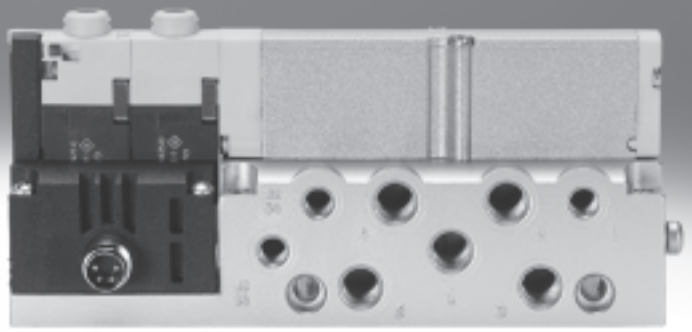
Solenoid valves VMPA

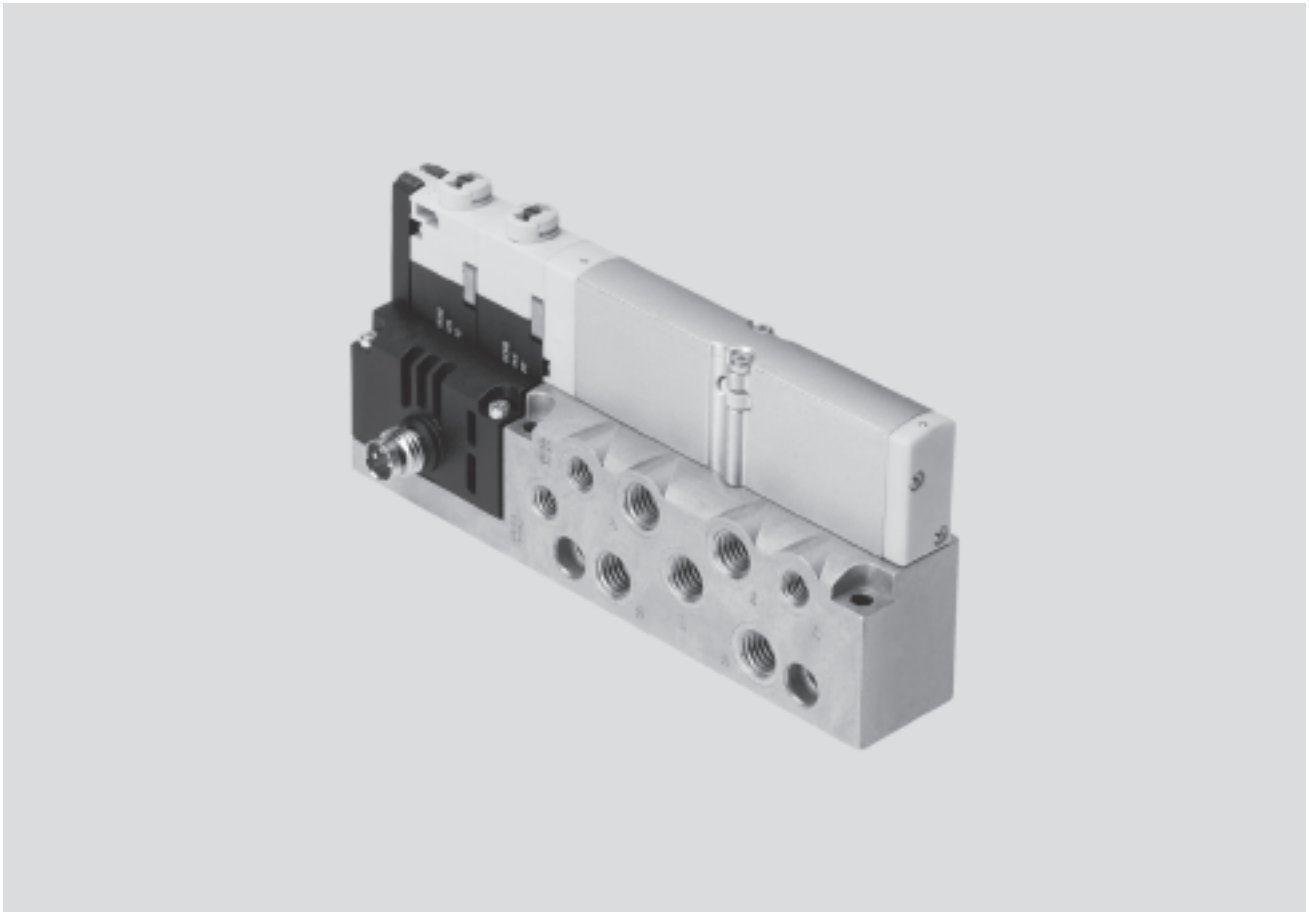
FESTO



New
Variants KU, NU, HU, MU, MS

Solenoid valves VMPA

Key features



Innovative

- Slim high-performance valves in a sturdy metal housing
- MPA1 (width 10 mm): flow rate up to 360 l/min
- MPA2 (width 20 mm) : flow rate up to 700 l/min

The valves are identical with the valves from the valve terminals MPA-S, MPA-F and MPA-L.
This simplifies planning, ordering and warehousing.

Versatile

- High pressure range –0.9 ... 10 bar
- Wide range of valve functions

Reliable

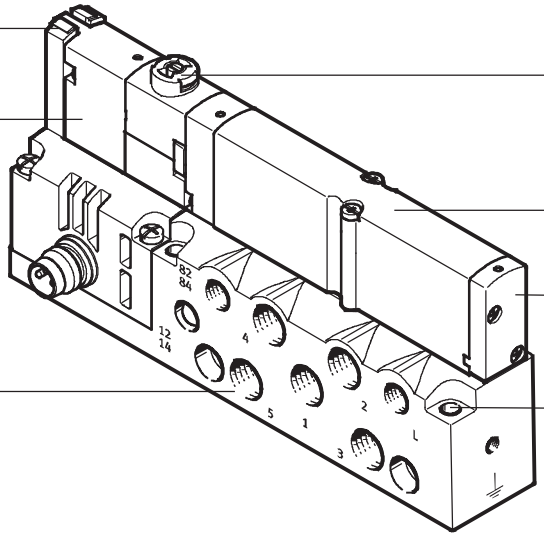
- Fast troubleshooting thanks to LEDs on the valves and diagnostics via fieldbus
- Extensive operating voltage range ±25%
- Easy to service thanks to replaceable valves and electronic modules
- Manual override either non-detenting, detenting or secured against unauthorised activation (covered)
- Durable thanks to tried-and-tested piston spool valves
- Large and durable labelling system, suitable for barcodes

Easy to mount

- Secure wall mounting

Solenoid valves VMPA

Key features



Equipment options

Valve functions

- 5/2-way valve, single solenoid
- 5/2-way valve, double solenoid
- 2x 3/2-way valve, normally open
- 2x 3/2-way valve, normally closed
- 2x 3/2-way valve, 1x normally open, 1x normally closed
- 5/3-way valve, mid-position pressurised
- 5/3-way valve, mid-position closed
- 5/3-way valve, mid-position exhausted
- 2x 2/2-way valve, normally closed

Special features

- Electrical M8 connection, 4-pin with screw connection
- Detachable electronics module with integrated holding current reduction

Solenoid valves VMPA

Peripherals overview

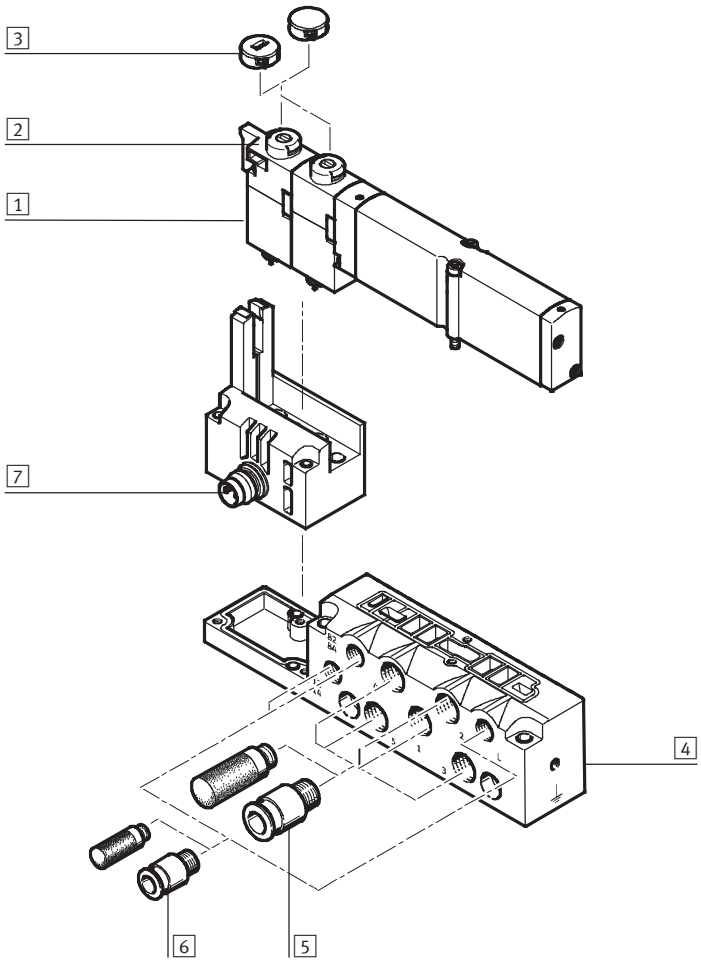
FESTO

Individual sub-base for solenoid valve width 10 mm

Ordering:
- Using individual part numbers

Individual sub-bases of the type VMPA1-IC-... can be equipped with any 10 mm solenoid valve VMPA1.

The electrical connection is established using a standardised 4-pin M8 plug (EN 60947-5-2).



Designation	Brief description	→ Page/Internet
1 Solenoid valve	VMPA1...	21
2 Manual override	Non-detenting/turning with detent, per solenoid coil	–
3 Cover cap for manual override	Conversion from detenting/non-detenting to non-detenting or covered	22
4 Sub-base	For solenoid valve VMPA1...	22
5 Fittings and/or silencers	M7 for working ports (2, 4) and supply air/exhaust ports (1, 3, 5)	22
6 Fittings, silencers or blanking plugs	M5 for pilot air supply/pilot exhaust air (12/14, 82/84) and pressure compensation	22
7 Electrical connection M8	4-pin	–

Solenoid valves VMPA

Peripherals overview

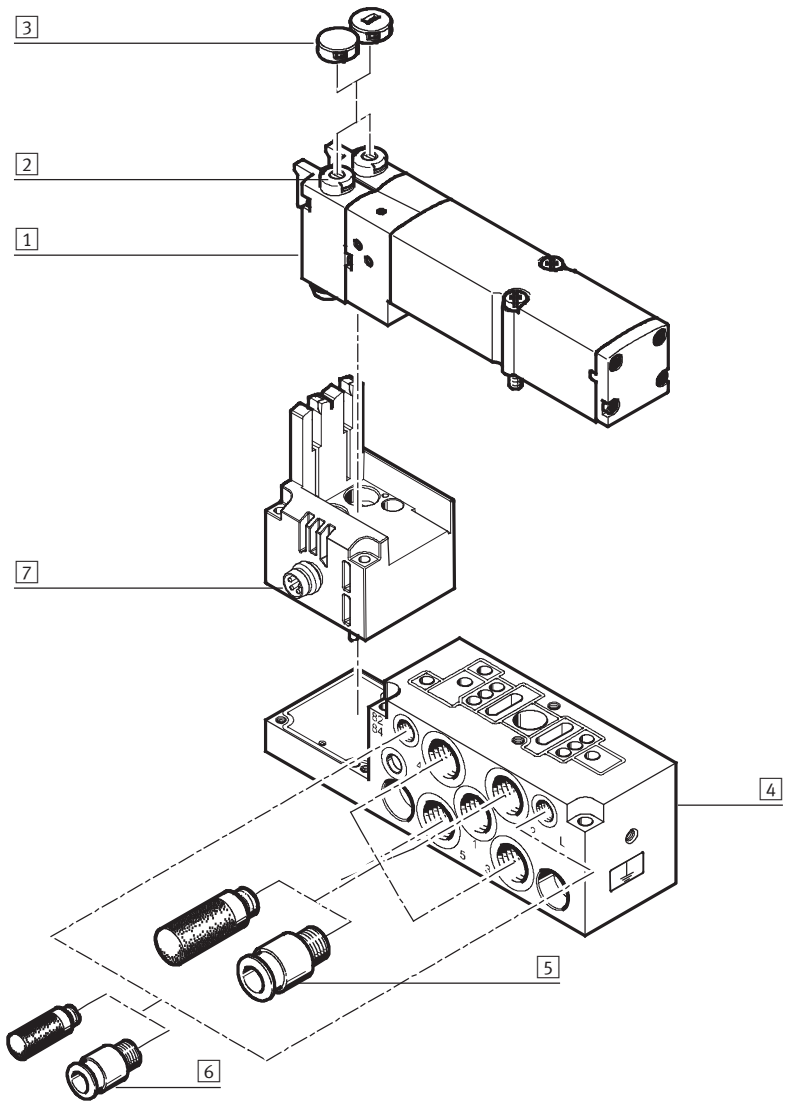
FESTO

Individual sub-base for solenoid valve width 20 mm

Ordering:
- Using individual part numbers

Individual sub-bases of the type VMPA2-IC-... can be equipped with any 20 mm solenoid valve VMPA2.

The electrical connection is established using a standardised 4-pin M8 plug (EN 60947-5-2).



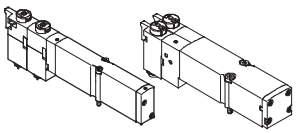
Designation	Brief description	➔ Page/Internet
1 Solenoid valve	VMPA2...	21
2 Manual override	Non-detenting/turning with detent, per solenoid coil	–
3 Cover cap for manual override	Conversion from detenting/non-detenting to non-detenting or covered	22
4 Sub-base	For individual valve VMPA2...	22
5 Fittings and/or silencers	G⅛ for working ports (2, 4) and supply air/exhaust ports (1, 3, 5)	22
6 Fittings, silencers or blanking plugs	M5 for pilot air supply/pilot exhaust air (12/14, 82/84) and pressure compensation	22
7 Electrical connection M8	4-pin	–

Solenoid valves VMPA

Key features – Pneumatic components

FESTO

Sub-base valve



The VMPA offers a comprehensive range of valve functions. All valves are equipped with a patented sealing system that facilitates efficient sealing, a broad pressure range and long service life. They have a pneumatic pilot control for optimising performance. Air is supplied by means of pilot air supply.

Sub-base valves can be quickly replaced since the tubing connectors remain on the sub-base.
This design is also particularly slim.

Irrespective of the valve function there are sub-base valves with one solenoid coil (single solenoid) or with two solenoid coils (double solenoid or two single solenoid valves in one housing).

Design

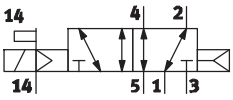
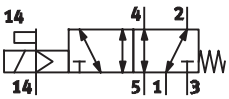
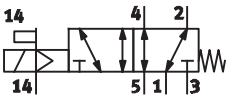
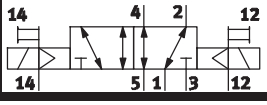
Valve replacement

The valves are attached to the metal manifold block using two screws, which means that they can be easily replaced. The mechanical sturdiness of the sub-base guarantees good long-term sealing.

Valve code

The valve code (M, MS, MU, J, N, NS, NU, K, KS, KU, H, HS, HU, B, G, E, X, W, D, DS, I) is located on the front of the valve beneath the manual override.

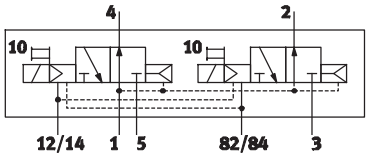
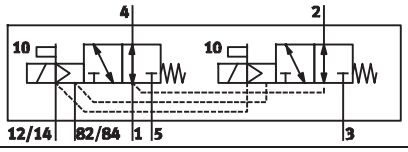
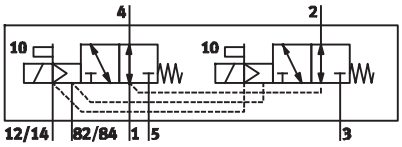
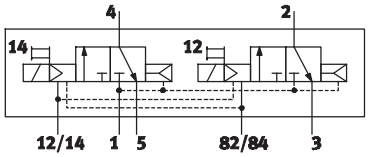
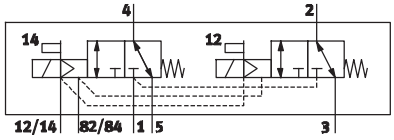
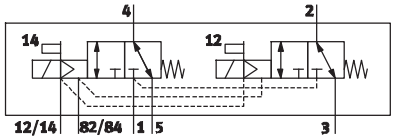
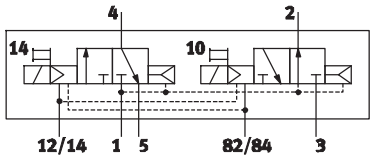
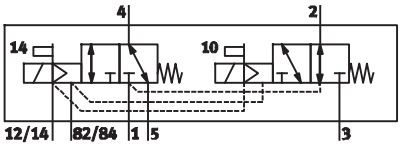
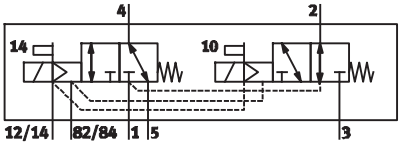
5/2-way valve

Type	Circuit symbol	Width [mm]	Description
...M1H-M...		10, 20	• Single solenoid • Pneumatic spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-MS...		10, 20	• Single solenoid • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +8 bar
...M1H-MU...		10	• Single solenoid • Polymer poppet valve • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-J...		10, 20	• Double solenoid • Reverse operation • Operating pressure –0.9 ... +10 bar

Solenoid valves VMPA

Key features – Pneumatic components

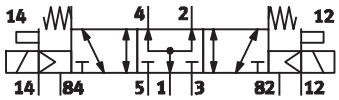
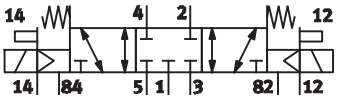
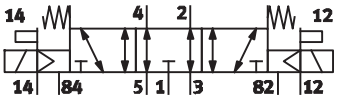
FESTO

2x 3/2-way valve			
Type	Circuit symbol	Width [mm]	Description
...M1H-N...		10, 20	• Single solenoid • Normally open • Pneumatic spring return • Operating pressure 3 ... 10 bar
...M1H-NS...		10, 20	• Single solenoid • Normally open • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +8 bar
...M1H-NU...		10	• Single solenoid • Polymer poppet valve • Normally open • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-K...		10, 20	• Single solenoid • Normally closed • Pneumatic spring return • Operating pressure 3 ... 10 bar
...M1H-KS...		10, 20	• Single solenoid • Normally closed • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +8 bar
...M1H-KU...		10	• Single solenoid • Polymer poppet valve • Normally closed • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-H...		10, 20	• Single solenoid • Normal position – 1x closed – 1x open • Pneumatic spring return • Operating pressure 3 ... 10 bar
...M1H-HS...		10, 20	• Single solenoid • Normal position – 1x closed – 1x open • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +8 bar
...M1H-HU...		10, 20	• Single solenoid • Polymer poppet valve • Normal position – 1x closed – 1x open • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar

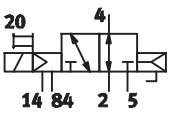
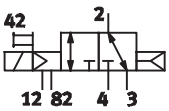
Solenoid valves VMPA

Key features – Pneumatic components

FESTO

5/3-way valve			
Type	Circuit symbol	Width [mm]	Description
...M1H-B...		10, 20	• Mid-position pressurised[1)] • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-G...		10, 20	• Mid-position closed[1)] • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar
...M1H-E...		10, 20	• Mid-position exhausted[1)] • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +10 bar

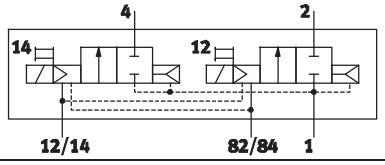
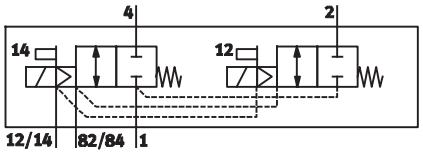
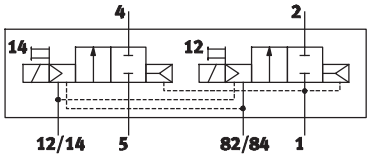
1) If neither solenoid coil is energised, the valve moves to its mid-position by means of spring force.
If both coils are energised at the same time, the valve remains in the previously assumed switching position.

3/2-way valve			
Type	Circuit symbol	Width [mm]	Description
...M1H-W...		10, 20	• Single solenoid • Normally open • External compressed air supply • Pneumatic spring return • Reverse operation • Operating pressure –0.9 ... +10 bar Compressed air (–0.9 ... +10 bar) supplied at working port 2 can be switched with both internal and external pilot air supply.
...M1H-X...		10, 20	• Single solenoid • Normally closed • External compressed air supply • Pneumatic spring return • Reverse operation • Operating pressure –0.9 ... +10 bar Compressed air (–0.9 ... +10 bar) supplied at working port 4 can be switched with both internal and external pilot air supply.

Solenoid valves VMPA

Key features – Pneumatic components

FESTO

2x 2/2-way valve			
Type	Circuit symbol	Width [mm]	Description
...M1H-D...		10, 20	• Single solenoid • Normally closed • Pneumatic spring return • Operating pressure 3 ... 10 bar
...M1H-DS...		10, 20	• Single solenoid • Normally closed • Mechanical spring return • Reverse operation • Operating pressure –0.9 ... +8 bar
...M1H-I...		10, 20	• Single solenoid • 1x normally closed • 1x normally closed, reverse operation • Pneumatic spring return • Operating pressure 3 ... 10 bar • Vacuum at port 3/5 only

Note

A filter must be installed upstream of valves operated in vacuum mode. This prevents any foreign matter in the intake air getting into the valve (e.g. when operating a suction cup).

Solenoid valves VMPA

Key features – Pneumatic components

FESTO

Pilot air supply

The pneumatic connection is located on the individual sub-base.
The ports differ for the following types of pilot air supply:
- internal pilot air and
- external pilot air.

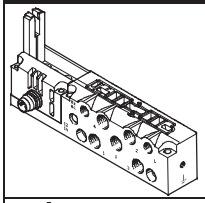
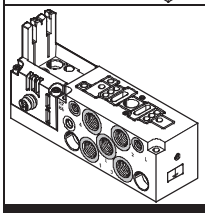
Internal pilot air supply
Internal pilot air supply can be selected if the required working pressure is between 3 and 8 bar.
The pilot air in the sub-base is branched from the compressed air supply 1 using an internal connection. Port 12/14 is sealed with a blanking plug at the factory.

External pilot air supply
If the supply pressure is less than 3 bar or greater than 8 bar, you must operate your valve VMPA using external pilot air.
The pilot air is supplied via port 12/14 of the sub-base in this case.

Note

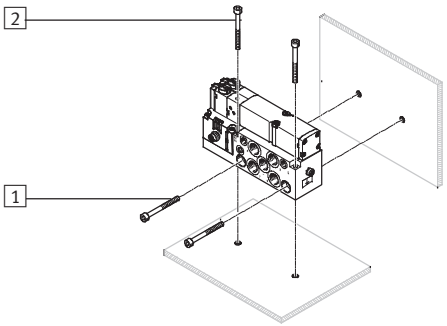
If a slow pressure rise by means of a soft-start valve is required in the system, external pilot air should be selected whereby the pilot pressure applied during switch-on is already very high.

Individual sub-base

Graphical illustration	Type **Without ATEX certification:**	**With ATEX certification[3]:**	Width [mm]	Notes
	VMPA1-1-IC-AP-1[1] VMPA1-1-IC-AP-S-1[2]	VMPA1-1-IC-AP-1-EX1E[1] VMPA1-1-IC-AP-S-1-EX1E[2]	10	• Working ports: M7, QS4, QS6 • Ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84) • For internal or external pilot air supply
	VMPA2-IC-AP-1[1] VMPA2-IC-AP-S-1[2]	VMPA2-IC-AP-1-EX1E[1] VMPA2-IC-AP-S-1-EX1E[2]	20	• Working ports: G1⁄8, QS6, QS8 • Ports for supply air (1, 12/14) and exhaust air (3, 5, 82/84) • For internal or external pilot air supply

1) Internal pilot air supply
2) External pilot air supply
3) For special ATEX applications, please talk to your technical consultant

Assembling the solenoid valve on an individual sub-base



1 Horizontal mounting holes
2 Vertical mounting holes

The individual sub-base for wall mounting is designed for integration into a system or machine. It can be mounted horizontally or vertically.

Display and operation

Each valve solenoid coil is allocated an LED which indicates its operating status.

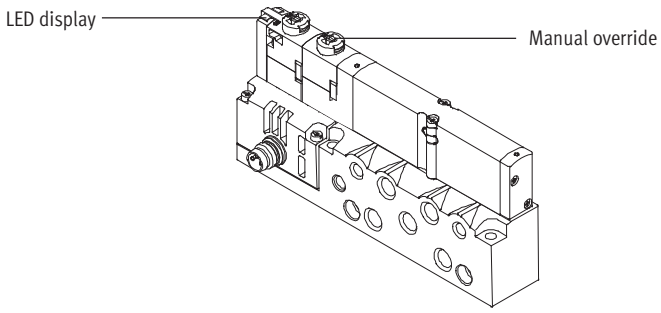
- Indicator 12 shows the switching status of the coil for output 2
- Indicator 14 shows the switching status of the coil for output 4

Manual override

The manual override (MO) enables the valve to be actuated when not electrically activated or energised. The pilot valve is switched by pushing the manual override. The set switching status can also be locked by turning the manual override.

Alternatives:

- A cover (VMPA-HBT-B) can be fitted over the manual override to prevent it from being locked. The manual override can then only be activated by pushing it.
- A cover (VMPA-HBV-B) can be fitted over the manual override to prevent it from being accidentally actuated.

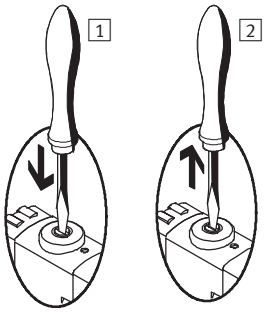


Note

A manually actuated valve (manual override) cannot be reset electrically. Conversely, an electrically actuated valve cannot be reset using the mechanical manual override.

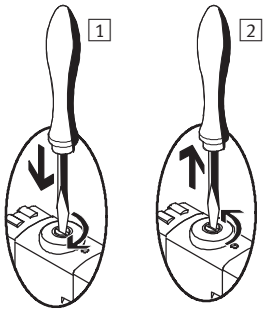
Manual override (MO)

MO with automatic return (non-detenting)



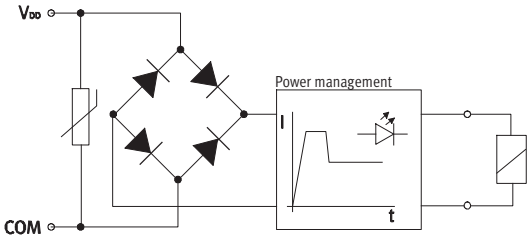
1 Press in the stem of the MO with a pointed object or screwdriver. Pilot valve switches and actuates the main valve.
2 Remove the pointed object or screwdriver. Spring force pushes the stem of the MO back. Pilot valve returns to its initial position and so too the single solenoid main valve (not with double solenoid valve code J).

MO set via turning (detenting)



1 Press in the stem of the MO with a pointed object or screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached. Valve remains switched.
2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the pointed object or screwdriver. Spring force pushes the stem of the MO back. Valve returns to its initial position (not with double solenoid valve code J).

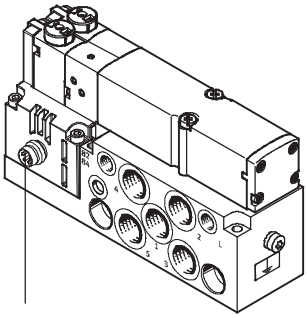
Electrical power as a result of current reduction



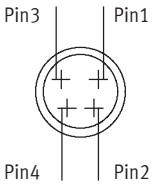
Each solenoid coil MPA is protected with a spark arresting protective circuit as well as against polarity reversal.
All valve types are additionally equipped with integrated current reduction.

Valves MPA are supplied with operating voltage in the range 18 ... 30 V (24 V +/–25%). This high tolerance is made possible through integrated control electronics and offers additional security, e.g. if the operating voltage drops.

Electrical connection – Individual valve interface



Connector plug M8 x 1, male, 4-pin to EN 60947-5-2



Pin allocation on individual valve to VDMA 24571

With positive logic:
Pin1 – Unused
Pin2 – U_B for coil 12
Pin3 – 0 V for coil 12 and 14
Pin4 – U_B for coil 14

With negative logic:
Pin1 – Unused
Pin2 – 0 V for coil 12
Pin3 – U_B for coil 12 and 14
Pin4 – 0 V for coil 14

Tightening torque for M8 plug
0.25 ... 0.5 Nm (manual torque)

Instructions for use

Equipment

Operate system equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed so that, if used as designated, they will not require additional lubrication and will still achieve a long service life.
The quality of compressed air downstream of the compressor must correspond to that of unlubricated compressed air. If possible, do not operate all of your system equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used.

Unsuitable additional oil and too high an oil content in the compressed air reduce the service life of the valve terminal.
Use Festo special oil OFSW-32 or the alternatives listed in the Festo catalogue (as specified in DIN 51524 HLP32; basic oil viscosity 32 CST at 40 °C).

Bio-oils

When using bio-oils (oils which are based on synthetic or native ester, e.g. rapeseed oil methyl ester), the maximum residual oil content of 0.1 mg/m^3 must not be exceeded (see ISO 8573-1 Class 2).

Mineral oils

When using mineral oils (e.g. HLP oils to DIN 51524, parts 1 to 3) or similar oils based on poly-alpha-olefins (PAO), the maximum residual oil content of 5 mg/m^3 must not be exceeded (see ISO 8573-1 Class 4).
A higher residual oil content irrespective of the compressor oil cannot be permitted, as the basic lubricant would be flushed out over time.

New
Variants KU, NU, HU, MU, MS

Solenoid valves VMPA

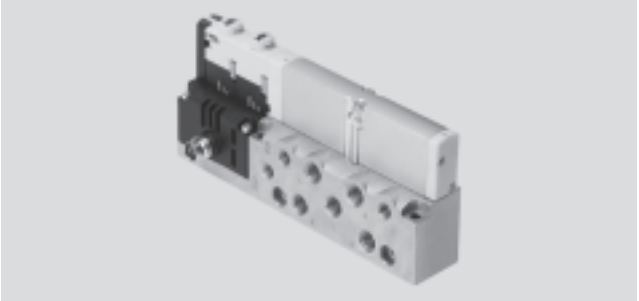
Technical data

FESTO

Flow rate
VMPA1: Up to 360 l/min
VMPA2: Up to 700 l/min

Valve width
VMPA1: 10 mm
VMPA2: 20 mm

Voltage
24 V DC



General technical data			
Width		10 mm	20 mm
Lubrication		Life-time lubrication, PWIS-free (free of paint-wetting impairment substances)	
Type of mounting		Wall mounting	
		On H-rail to EN 60715	
Mounting position		Any	
Manual override		Non-detenting, detenting, blocked	
Valve weight	[g]	➔ Page 15	
Sub-base weight	[g]	185	
Pneumatic connections			
Pneumatic connection		Via sub-base	
Supply port	1	M7	
Exhaust port	3/5	M7	
Working ports	2/4	Depending on the connection type selected	
		• M7 • QS4 • QS6	• G⅛ • QS6 • QS8
Pilot air port	12/14	M5	
Pilot exhaust air port	82/84	M5	
Pressure compensation port		With ducted exhaust air: via port 82/84 (M5 with individual sub-base) With flat plate silencer: venting to atmosphere	

Operating and environmental conditions		
Operating medium		Compressed air to ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Lubricated operation possible (required during subsequent operation)
Ambient temperature	[°C]	–5 ... +50
Temperature of medium	[°C]	–5 ... +50
Storage temperature[1]	[°C]	–20 ... +40
Relative air humidity at 40 °C	[%]	90
Corrosion resistance class CRC[2]		1

1) Long-term storage
2) Corrosion resistance class 1 according to Festo standard 940 070
Components subject to low corrosion stress. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Solenoid valves VMPA

Technical data

FESTO

Technical data – Valve width 10 mm													
Code			M	J	N	K	H	B	G	E	X	W	D	I
Switching times	On	[ms]	10	10	10	10	10	10	10	10	10	10	10	8
	Off	[ms]	20	–	20	20	20	35	35	35	20	20	20	20
	Change over	[ms]	–	15	–	–	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +10		3 ... 10			–0.9 ... +10					3 ... 10	
Pilot pressure		[bar]	3 ... 8											
Standard nominal flow rate		[l/min]	360	360	300	230	300	300	320	240	255	255	230	260
Design			Piston spool valve											
Max. tightening torque of valve mounting		[Nm]	0.25											
Materials			Die-cast aluminium											
Product weight		[g]	49	56	56	56	56	56	56	56	49	49	56	–

Technical data – Valve width 10 mm										
Code			MS	NS	KS	HS	DS	MU	NU	KU	HU
Switching times	On	[ms]	10	10	10	10	10	10	8	8	8
	Off	[ms]	27	20	20	20	20	12	8	10	10
	Change over	[ms]	–	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +8					–0.9 ... +10			
Pilot pressure		[bar]	3 ... 8								
Standard nominal flow rate		[l/min]	360	300	230	300	230	190	190	160	190
Design			Piston spool valve					Poppet valve with spring return			
Max. tightening torque of valve mounting		[Nm]	0.25								
Materials			Die-cast aluminium					PPA reinforced			
Product weight		[g]	56	56	56	56	56	35	42	42	42

Technical data – Valve width 20 mm																		
Code			M	J	N	K	H	B	G	E	X	W	D	I	MS	NS	KS	HS	DS
Switching times	On	[ms]	15	9	8	8	8	11	10	11	13	13	7	7	8	12	12	12	12
	Off	[ms]	28	–	28	28	28	46	40	47	22	22	25	23	36	25	25	25	25
	Change over	[ms]	–	22	–	–	–	23	21	23	–	–	–	–	–	–	–	–	–
Operating pressure		[bar]	–0.9 ... +10		3 ... 10			–0.9 ... +10					3 ... 10		–0.9 ... +8				
Pilot pressure		[bar]	3 ... 8																
Standard nominal flow rate		[l/min]	700	700	560	500	560	520	630	610	590	500	680	680	700	560	500	560	680
Design			Piston spool valve																
Max. tightening torque of valve mounting		[Nm]	0.65																
Materials			Die-cast aluminium																
Product weight		[g]	100											–	100				

Certifications	
Sub-base for individual connection	→ 22
ATEX category for gas	II 3 G
Explosion ignition protection type for gas	Ex nA IIC T4 X Gc
ATEX ambient temperature [°C]	–5 ≤ Ta ≤ +50

Solenoid valves VMPA

Technical data

FESTO

Current consumption per solenoid coil at nominal voltage			
Width		10 mm	20 mm
Nominal pick-up current	[mA]	50	110
Nominal current with current reduction	[mA]	10	23
Time until current reduction	[ms]	20	20

Electrical data		
Nominal voltage	[V DC]	24
Operating voltage range	[V DC]	18 ... 30
Residual ripple	[Vss]	4
Protection class to EN 60529		IP65 (for all types of signal transmission in assembled state)

Note

Note possible restrictions for the IP protection class
➔ ATEX conformity declaration

Materials	
Sub-base	Die-cast aluminium
Seals	Nitrile rubber, elastomer
Note on materials	RoHS-compliant

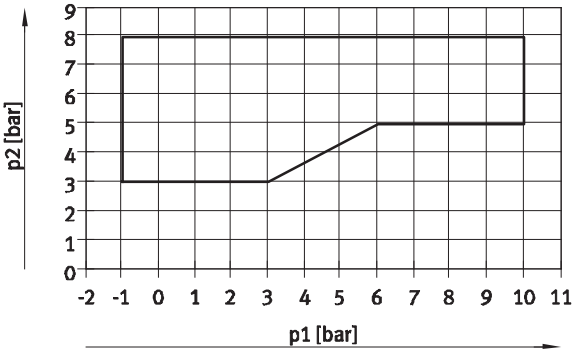
Solenoid valves VMPA

Technical data

FESTO

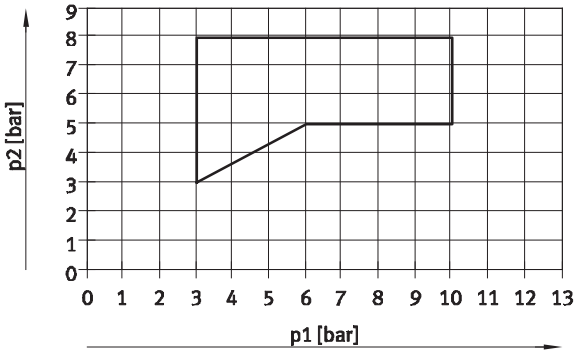
Pilot pressure p2 as a function of working pressure p1 with external pilot air supply

For valves with code: M, J, B, G, E, W, X



1 Operating range for valves with external pilot air supply

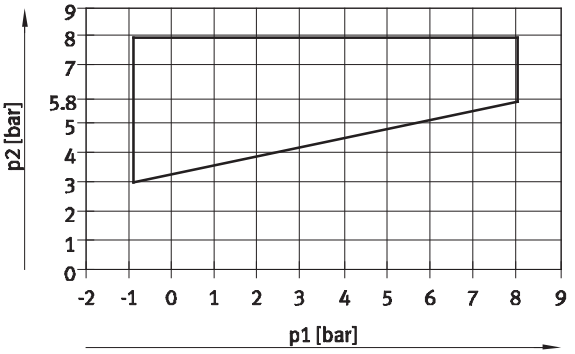
For valves with code: N, K, H, D, I



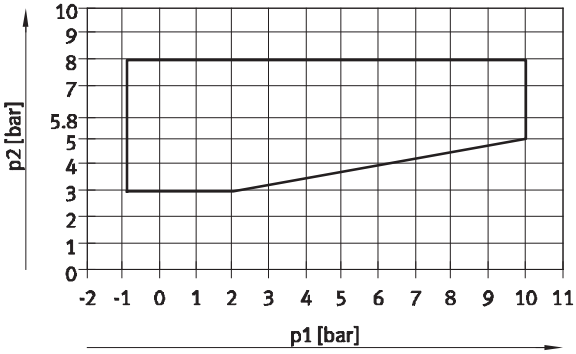
1 Operating range for valves with external pilot air supply

Pilot pressure p2 as a function of working pressure p1 for valves with mechanical spring return

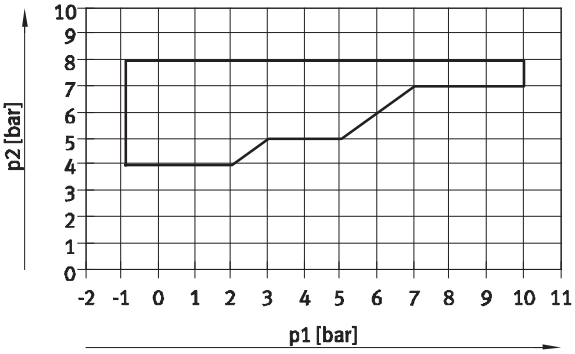
For valves in width 10 mm with code: MS, NS, KS, HS, DS



For valves in width 20 mm with code: MS, NS, KS, HS, DS

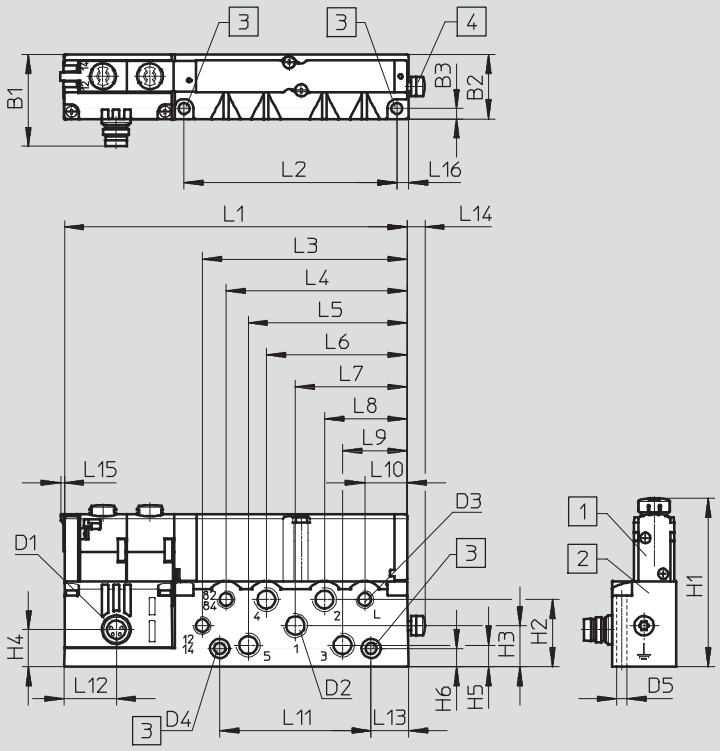


For polymer poppet valve in width 10 mm with code: MU, NU, KU, HU



Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Solenoid valve width 10 mm on individual sub-base



1 Solenoid valve
2 Individual sub-base
3 4x mounting holes for screw M3
4 Earthing screw

Type	B1	B2	B3	D1	D2	D3	D4 ∅	D5 ∅	H1	H2	H3	H4	H5	H6
VMPA1-...	28.8	20.2	3.2	M8x1	M7	M5	3.4	3.4	52.2	21	12.9	11.6	6.8	5.7

Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16
VMPA1-...	107.3	66.6	64.2	56.7	49.8	44.1	35	25.9	20.3	13.3	47.4	16.4	11.3	5.6	1.2	3.2

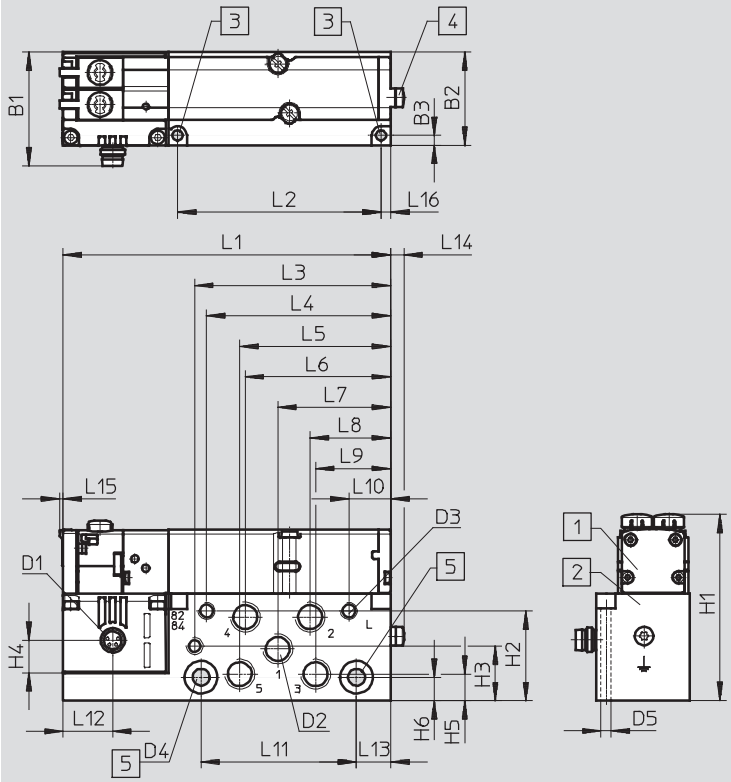
Solenoid valves VMPA

Technical data

FESTO

Dimensions Download CAD Data ➔ **www.festo.com/us/cad**

Solenoid valve width 20 mm on individual sub-base



1 Solenoid valve
2 Individual sub-base
3 2x mounting holes for screw M3
4 Earthing screw
5 2x mounting holes for screw M5

Type	B1	B2	B3	D1	D2	D3	D4 ∅	D5 ∅	H1	H2	H3	H4	H5	H6
VMPA2-...	37.2	30.5	3.2	M8x1	G1/8	M5	5.5	3.4	60.5	29.4	17.9	10.7	8.7	7.7

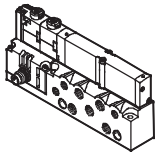
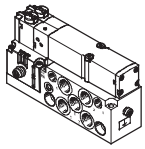
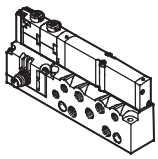
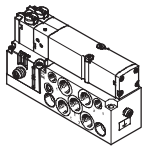
Type	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15	L16
VMPA2-...	107.3	66.6	64.2	60.3	49.4	47.6	37	26.4	24.6	13.7	50.9	16.3	11.2	4.4	1.2	3.2

Solenoid valves VMPA

Ordering data – Solenoid valve on individual sub-base

FESTO

Ordering data – Set, comprising solenoid valve on individual sub-base

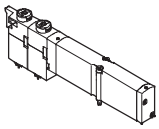
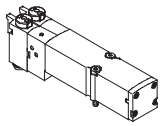
	Valve function	Width [mm]	Part No.	Type
Internal pilot air supply				
	5/2-way valve			
	Single solenoid	10	533376	VMPA1-M1H-M-M7-PI
		20	537963	VMPA2-M1H-M-G⅛-PI
	Double solenoid	10	533377	VMPA1-M1H-J-M7-PI
		20	537964	VMPA2-M1H-J-G⅛-PI
	2x 3/2-way valve			
	Normally open	10	533382	VMPA1-M1H-N-M7-PI
		20	537969	VMPA2-M1H-N-G⅛-PI
	Normally closed	10	533381	VMPA1-M1H-K-M7-PI
		20	537968	VMPA2-M1H-K-G⅛-PI
	1x normally open, 1x normally closed	10	533383	VMPA1-M1H-H-M7-PI
		20	537970	VMPA2-M1H-H-G⅛-PI
	5/3-way valve			
	Mid-position pressurised	10	533378	VMPA1-M1H-B-M7-PI
		20	537965	VMPA2-M1H-B-G⅛-PI
	Mid-position closed	10	533379	VMPA1-M1H-G-M7-PI
		20	537966	VMPA2-M1H-G-G⅛-PI
	Mid-position exhausted	10	533380	VMPA1-M1H-E-M7-PI
		20	537967	VMPA2-M1H-E-G⅛-PI
	2x 2/2-way valve			
	Normally closed	10	533384	VMPA1-M1H-D-M7-PI
		20	537971	VMPA2-M1H-D-G⅛-PI
	1x normally closed	10	545230	VMPA1-M1H-I-M7-PI
	1x normally closed, reverse operation	20	545232	VMPA2-M1H-I-G⅛-PI
External pilot air supply				
	5/2-way valve			
	Single solenoid	10	533385	VMPA1-M1H-M-S-M7-PI
		20	537972	VMPA2-M1H-M-S-G⅛-PI
	Double solenoid	10	533386	VMPA1-M1H-J-S-M7-PI
		20	537973	VMPA2-M1H-J-S-G⅛-PI
	2x 3/2-way valve			
	Normally open	10	533391	VMPA1-M1H-N-S-M7-PI
		20	537978	VMPA2-M1H-N-S-G⅛-PI
	Normally closed	10	533390	VMPA1-M1H-K-S-M7-PI
		20	537977	VMPA2-M1H-K-S-G⅛-PI
	1x normally open, 1x normally closed	10	533392	VMPA1-M1H-H-S-M7-PI
		20	537979	VMPA2-M1H-H-S-G⅛-PI
	5/3-way valve			
	Mid-position pressurised	10	533387	VMPA1-M1H-B-S-M7-PI
		20	537974	VMPA2-M1H-B-S-G⅛-PI
	Mid-position closed	10	533388	VMPA1-M1H-G-S-M7-PI
		20	537975	VMPA2-M1H-G-S-G⅛-PI
	Mid-position exhausted	10	533389	VMPA1-M1H-E-S-M7-PI
		20	537976	VMPA2-M1H-E-S-G⅛-PI
	2x 2/2-way valve			
	Normally closed	10	533393	VMPA1-M1H-D-S-M7-PI
		20	537980	VMPA2-M1H-D-S-G⅛-PI
	1x normally closed	10	545231	VMPA1-M1H-I-S-M7-PI
	1x normally closed, reverse operation	20	545233	VMPA2-M1H-I-S-G⅛-PI

Solenoid valves VMPA

Ordering data – Solenoid valve

FESTO

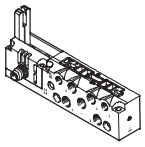
Ordering data – Individual solenoid valve

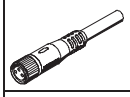
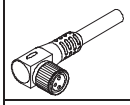
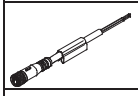
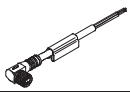
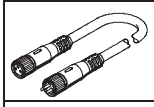
	Valve function	Width [mm]	Part No.	Type	
	5/2-way valve				
	Single solenoid	10	533342	VMPA1-M1H-M-PI	
		20	537952	VMPA2-M1H-M-PI	
	Single solenoid, mechanical spring return	10	571334	VMPA1-M1H-MS-PI	
		20	571333	VMPA2-M1H-MS-PI	
	Polymer poppet valve, single solenoid, mechanical spring return	10	553113	VMPA1-M1H-MU-PI	
	Double solenoid	10	533343	VMPA1-M1H-J-PI	
		20	537953	VMPA2-M1H-J-PI	
	2x 3/2-way valve				
	Normally open	10	533348	VMPA1-M1H-N-PI	
		20	537958	VMPA2-M1H-N-PI	
	Normally open, mechanical spring return	10	556839	VMPA1-M1H-NS-PI	
		20	568655	VMPA2-M1H-NS-PI	
	Polymer poppet valve, normally open, mechanical spring return	10	553111	VMPA1-M1H-NU-PI	
	Normally closed	10	533347	VMPA1-M1H-K-PI	
		20	537957	VMPA2-M1H-K-PI	
	Normally closed, mechanical spring return	10	556838	VMPA1-M1H-KS-PI	
		20	568656	VMPA2-M1H-KS-PI	
	Polymer poppet valve, normally closed, mechanical spring return	10	553110	VMPA1-M1H-KU-PI	
	1x normally open, 1x normally closed	10	533349	VMPA1-M1H-H-PI	
		20	537959	VMPA2-M1H-H-PI	
	1x normally open, 1x normally closed, mechanical spring return	10	556840	VMPA1-M1H-HS-PI	
		20	568658	VMPA2-M1H-HS-PI	
	Polymer poppet valve, 1x normally open, 1x normally closed, mechanical spring return	10	553112	VMPA1-M1H-HU-PI	
	5/3-way valve				
	Mid-position pressurised	10	533344	VMPA1-M1H-B-PI	
		20	537954	VMPA2-M1H-B-PI	
	Mid-position closed	10	533345	VMPA1-M1H-G-PI	
		20	537955	VMPA2-M1H-G-PI	
	Mid-position exhausted	10	533346	VMPA1-M1H-E-PI	
		20	537956	VMPA2-M1H-E-PI	
	3/2-way valve				
	Normally open, external compressed air supply	10	540050	VMPA1-M1H-W-PI	
		20	540051	VMPA2-M1H-W-PI	
	Normally closed, external compressed air supply	10	534415	VMPA1-M1H-X-PI	
		20	537961	VMPA2-M1H-X-PI	
	2x 2/2-way valve				
	Normally closed	10	533350	VMPA1-M1H-D-PI	
		20	537960	VMPA2-M1H-D-PI	
	Normally closed, mechanical spring return	10	556841	VMPA1-M1H-DS-PI	
		20	568657	VMPA2-M1H-DS-PI	
	1x normally closed 1x normally closed, reverse operation	10	543605	VMPA1-M1H-I-PI	
		20	543703	VMPA2-M1H-I-PI	

Solenoid valves VMPA

Accessories

FESTO

Ordering data – Sub-base for individual valve					
Designation			Width [mm]	Part No.	Type
	Without ATEX specification	Internal pilot air	10	**533394**	**VMPA1-IC-AP-1**
			20	**537981**	**VMPA2-IC-AP-1**
		External pilot air	10	**533395**	**VMPA1-IC-AP-S-1**
			20	**537982**	**VMPA2-IC-AP-S-1**
	With ATEX specification[1]: II 3G Ex nA IIC T4 X Gc	Internal pilot air	10	**8005149**	**VMPA1-IC-AP-1-EX1E**
			20	**8005151**	**VMPA2-IC-AP-1-EX1E**
		External pilot air	10	**8005150**	**VMPA1-IC-AP-S-1-EX1E**
			20	**8005152**	**VMPA2-IC-AP-S-1-EX1E**

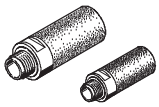
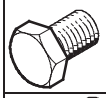
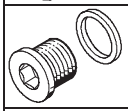
Ordering data				
Designation		Part No.	Type	PU[2]
Cover				
	Cover for manual override, non-detenting	**540897**	**VMPA-HBT-B**	10
	Cover for manual override, covered	**540898**	**VMPA-HBV-B**	10
Connecting cable, individual connection				
	• Straight socket, M8x1, 4-pin • Open end, 4-wire, 2.5 m	**158960**	**SIM-M8-4GD-2,5-PU**	1
	• Straight socket, M8x1, 4-pin • Open end, 4-wire, 5 m	**158961**	**SIM-M8-4GD-5-PU**	1
	• Angled socket, M8x1, 4-pin • Open end, 4-wire, 2.5 m	**158962**	**SIM-M8-4WD-2,5-PU**	1
	• Angled socket, M8x1, 4-pin • Open end, 4-wire, 5 m	**158963**	**SIM-M8-4WD-5-PU**	1
	• Straight socket, M8x1, 4-pin • Open end, 4-wire, 2.5 m	**541342**	**NEBU-M8G4-K-2.5-LE4**	1
	• Straight socket, M8x1, 4-pin • Open end, 4-wire, 5 m	**541343**	**NEBU-M8G4-K-5-LE4**	1
	• Angled socket, M8x1, 4-pin • Open end, 4-wire, 2.5 m	**541344**	**NEBU-M8W4-K-2.5-LE4**	1
	• Angled socket, M8x1, 4-pin • Open end, 4-wire, 5 m	**541345**	**NEBU-M8W4-K-5-LE4**	1
	Modular system for connecting cables	–	→ Internet: nebu	–
Push-in fitting				
	Connecting thread M5 for tubing O.D., 3 mm	**153313**	**QSM-M5-3-I**	10
	Connecting thread M5 for tubing O.D., 4 mm	**153315**	**QSM-M5-4-I**	10
	Connecting thread M5 for tubing O.D., 6 mm	**153317**	**QSM-M5-6-I**	10
	Connecting thread M7 for tubing O.D., 4 mm	**153319**	**QSM-M7-4-I**	10
	Connecting thread M7 for tubing O.D., 6 mm	**153321**	**QSM-M7-6-I**	10
	Connecting thread G1⁄8 for tubing O.D., 6 mm	**186107**	**QS-G1⁄8-6-I**	10
	Connecting thread G1⁄8 for tubing O.D., 8 mm	**186109**	**QS-G1⁄8-8-I**	10

1) For special ATEX applications, please talk to your technical consultant
2) Packaging unit

Solenoid valves VMPA

Accessories

FESTO

Ordering data				
Designation			Part No.	Type
Silencer				
	Connecting thread	M5	**165003**	**UC-M5**
		M7	**161418**	**UC-M7**
		G⅛	**161419**	**UC-⅛**
	Push-in sleeve connection	3 mm	**165005**	**UC-QS-3H**
		4 mm	**165006**	**UC-QS-4H**
		6 mm	**165007**	**UC-QS-6H**
		8 mm	**175611**	**UC-QS-8H**
Blanking plug				
	Thread M5		**3843**	**B-M5**
	Thread M7		**174309**	**B-M7**
	Thread G⅛		**3568**	**B-⅛**
Plug				
	Blanking plug for tubing O.D.	4 mm	**153267**	**QSC-4H**
		6 mm	**153268**	**QSC-6H**
		8 mm	**153269**	**QSC-8H**

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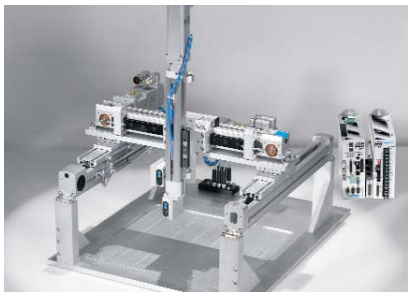

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