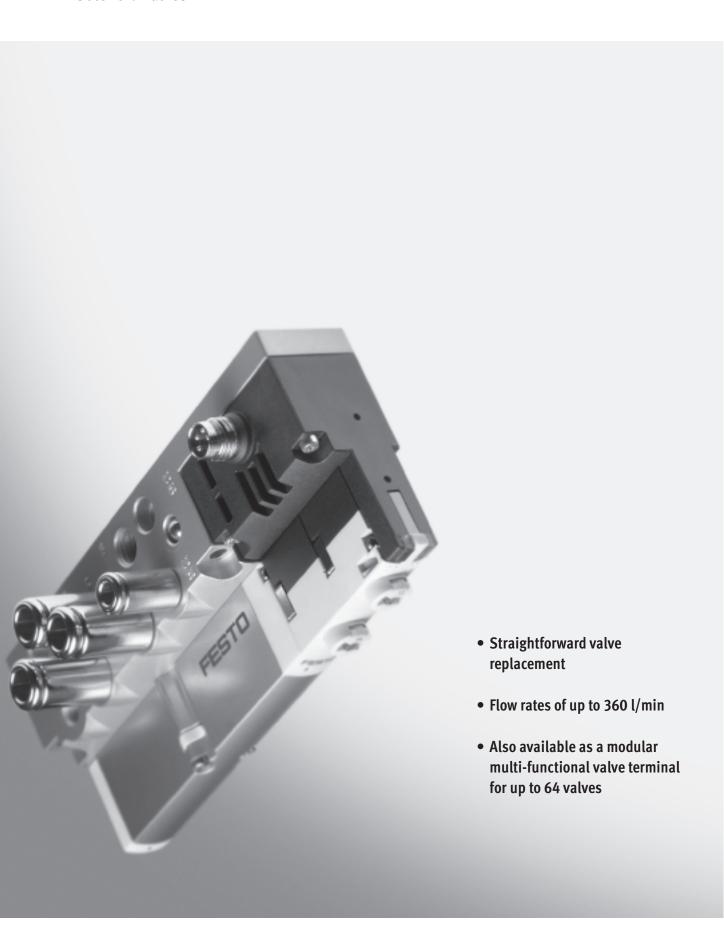
# **Directional control valves for standard applications** Valves MPA

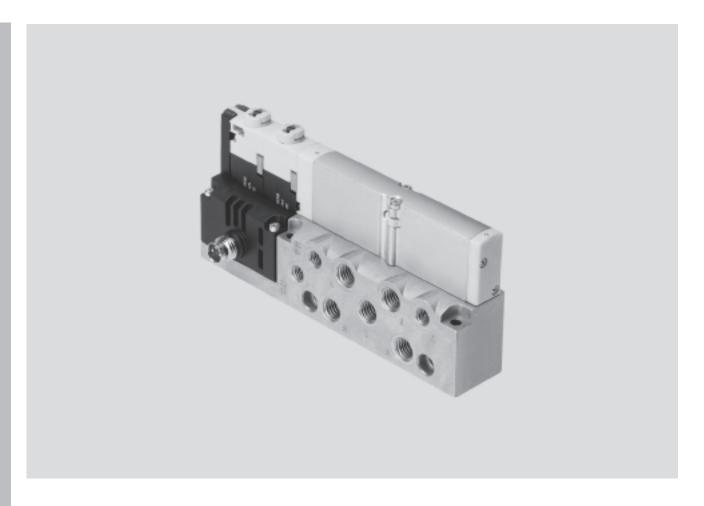
# **Solenoid valves VMPA1**





Key features





## Innovative

• Slim high-performance valves in sturdy metal housing, size MPA1 up to 360 l/min

The valves are identical with the valves in the valve terminal MPA. This simplifies planning, ordering and warehousing.

## Flexible

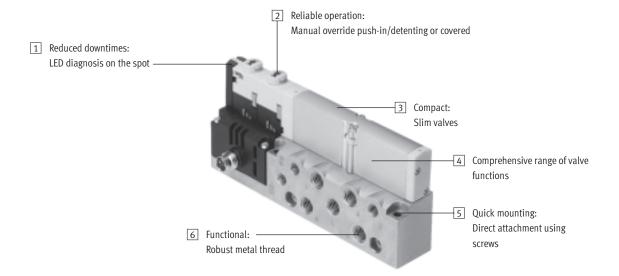
- High pressure range -0.9 ... 10 bar
- Wide range of valve functions

## Reliable

- Sturdy and durable metal components
  - Valves
  - Sub-bases
  - Seals
- Fast troubleshooting thanks to LEDs on the valves and diagnosis via fieldbus
- High operating voltage tolerance ±25%
- Reliable servicing through replaceable valves and electronics modules
- Manual override either push-in, detenting or secured against unauthorised activation (covered)
- Durable thanks to the use of triedand-tested piston spool valves
- Secure wall mounting

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

2.5

## **Solenoid valves VMPA1**

Peripherals overview

## **FESTO**

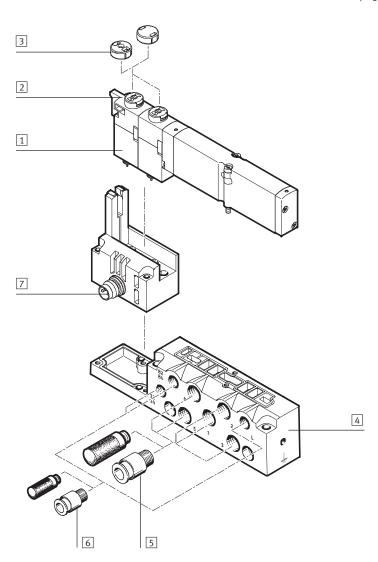
## Individual sub-base

## Ordering:

• Using individual part numbers

Individual sub-bases can be equipped with any valve.

The electrical connection is established using a standard 4-pin M8 plug (VDMA 24 571).

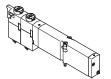


- 1 MPA valve
- 2 Manual override (per solenoid coil, push-in/ rotary-detenting)
- 3 Cover for manual override (push-in, covered only)
- 4 Sub-base for individual valve
- 5 Threaded connectors and/or silencers M7 for working lines (2, 4) and supply air/exhaust ports (1, 3, 5)
- 6 Threaded connectors, silencers or blanking plugs M5 for auxiliary pilot air supply/exhaust ports (12/14, 82/84) and pressure compensation
- 7 Electrical connection M8, 4-pin

Key features – Pneumatic components

## **FESTO**

## Sub-base valve



MPA offers a comprehensive range of valve functions. All valves are equipped with piston spool and patented sealing system which facilitates efficient sealing, a broad pressure range and long service life. To increase power they have a pneumatic pilot control supplied by auxiliary pilot air.

Sub-base valves can be quickly replaced since the pipe connection remains 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).

Valve fur	nction		
Code	Circuit symbol	Size 10	Description
M	14. 84 5 1 3 12	•	5/2-way valve, single solenoid • Pneumatic spring return
J	14 2 12 12 14/12 84/82 5 1 3	•	5/2-way valve, double solenoid
N	12/14 1 5 82/84 3	•	2x 3/2-way valve, single solenoid  Normally open Pneumatic spring return
K	12/14 1 5 82/84 3	-	2x 3/2-way valve, single solenoid  Normally closed Pneumatic spring return
Н	14 10 12 1 10 110 12 110 110 12 110 110 11	•	2x 3/2-way valve, single solenoid  Normal position 1x open 1x closed  Pneumatic spring return
В	14 W 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	•	5/3-way valve  • Mid-position pressurised <sup>1)</sup> • Spring force return
G	14 W 12 12 12 12 12 12 12 12 12 12 12 12 12	•	5/3-way valve  ■ Mid-position closed¹)  ■ Spring force return

<sup>1)</sup> Mid-position can be reached without electrical signal or using both signals

Key features - Pneumatic components



Valve fund	ction		
Code	Circuit symbol	Size 10	Description
E	14 W 12 12 12 12 12 12 12 12 12 12 12 12 12	-	5/3-way valve  • Mid-position exhausted <sup>1)</sup> • Spring force return
D	12/14 82/84 1	•	2x 2/2-way valve  Normally closed  Pneumatic spring return

<sup>1)</sup> Mid-position can be reached without electrical signal or using both signals

## Constructional design

## Valve replacement

The valves are attached to the metal sub-base using two screws. This means that they can be easily replaced. The mechanical robustness of the sub-base guarantees good longterm tightness.

The valve code (M, J, N, K, B, G, E, D) is located on the front of the valve beneath the manual override.

## Auxiliary pilot air

The port for the main pneumatic supply is located on the sub-base. The ports differ for the following auxiliary pilot air types:

- internal auxiliary pilot air and
- external auxiliary pilot air

## Internal auxiliary pilot air

An internal auxiliary pilot air supply can be selected if the required working pressure is between 3 and 8 bar.

The auxiliary pilot air is then branched from the compressed air supply 1 at the sub-base using an internal connection. The port 12/14 is sealed at the factory.

# External auxiliary pilot air

If the supply pressure is less than 3 bar or greater than 8 bar, you must operate your MPA valve using an external auxiliary pilot air supply. In this case the auxiliary pilot air is supplied externally via port 12/14 in the sub-base.

Note

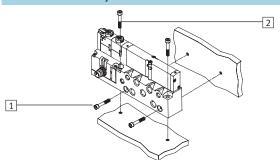
If a slow pressure rise by means of a soft-start valve is required in the equipment, external auxiliary pilot air should be selected whereby the pilot pressure applied during switch-on is already very high.

Sub-base	e variants			
Code		Size 10	Number of valve positions (solenoid coils)	Notes
-	Individual connection			
	VMPA1-M1HM7-PI		1 (max. 2)	<ul> <li>With working lines M7</li> <li>With ports M7 for supply air (1, 3, 5) and M5 for auxiliary pilot and pilot exhaust air (12/14, 82/84)</li> </ul>

Key features - Assembly and operation







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

- Horizontal mounting holes
- Vertical mounting holes

## Display and operation

Each valve solenoid coil is allocated an LED which indicates its switching

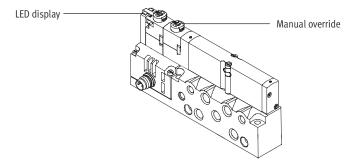
- · Indicator 12 shows the switching status of the pilot control for output 2
- Indicator 14 shows the switching status of the pilot control for output 4

## Manual override

The manual override (MO) allows the valve to be switched when in the electrically non-activated or deenergised status.

The valve is switched by pushing the manual override. The set switching status can also be locked by rotating the manual override (code: R). Alternatives:

- A cover (code: N) can be fitted over the manual override to prevent it from being locked. The valve can then only be activated by pushing it.
- A cover (code: V) can be fitted over the manual override to prevent it from being activated accidentally.



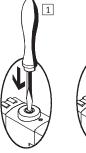


## Note

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)

Manual override with automatic return (push-in)





- 1 Press in the stem of the MO with a pointed object or screwdriver.
  - ----- Valve is in switching position
- 2 Remove the pointed object or screwdriver.
  - Spring force pushes the stem of the MO back.
  - position (not with double solenoid valve code J)



Manual override with lock (detenting)





- 1 Press in the stem of the MO using a screwdriver until the valve switches and then turn the stem clockwise by 90° until the stop is reached.
  - position
- 2 Turn the stem anti-clockwise by 90° until the stop is reached and then remove the pin or screwdriver. Spring force pushes the stem of the MO back.
  - position (not with double solenoid valve code J)



Key features – Electrical components

## **FESTO**

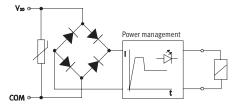
## Electrical power as a result of current reduction

Each valve solenoid coil is protected with a spark arresting protective circuit as well as against polarity reversal.

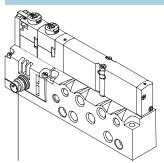
All valve types are additionally equipped with an integrated current reduction, e.g. for fieldbus:

- Pull current: 60 mA
- Holding current after 20 ms: 25 mA

MPA valves are supplied with operating voltage in the range  $18 \dots 30 \text{ V}$  (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**



Connector plug M8 x 1, 4-pin to EN 60 947-5-2



# Pin allocation on individual valve to

## VDMA 24 571

With positive logic: Pin 1 – Not allocated

Pin 2 – U<sub>B</sub> for coil 12

Pin 3 – 0 V for coils 12 and 14  $\,$ 

Pin 4 –  $U_B$  for coil 14

With negative logic: Pin 1 – Not allocated

Pin 2 – 0 V for coil 12

Pin 3 –  $U_B$  for coils 12 and 14

Pin 4 - 0 V for coil 14

## Tightening torque for M8 plug

0.25 ... 0.5 Nm (manual torque)

Connecting cable				
Designation	Version	Cable length [m]	Part No.	Туре
		[III]		
Plug socket with cable	Straight socket	2.5	158 960	SIM-M8-4GD-2,5-PU
Plug socket with cable	Straight socket	5	158 961	SIM-M8-4GD-5-PU
Plug socket with cable	Angled socket	2.5	158 962	SIM-M8-4WD-2,5-PU
Plug socket with cable	Angled socket	5	158 963	SIM-M8-4WD-5-PU

# Directional control valves for standard applications

## Solenoid valves VMPA1

Instructions for use

## Pneumatic equipment

Operate your equipment with unlubricated compressed air if possible. Festo valves and cylinders are designed for operation under normal use without any additional lubrication, yet still have a long service life. The quality of compressed air downstream from the compressor must correspond to that of unlubricated compressed air. If possible, do not operate all of your equipment with lubricated compressed air. The lubricators should, where possible, always be installed directly upstream of the actuator used.

Incorrect 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 51 524-HLP32; basic oil viscosity 32 CST at 40 °C).

## Bio-oils

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

## Mineral oils

When using mineral oils (e.g. HLP oils to DIN 51 524, parts 1 through 3) or similar oils based on poly-alphaolefins (PAO), the maximum residual oil content of 5 mg/m<sup>3</sup> 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.

**FESTO** 

# **Solenoid valves VMPA1**

Technical data

**FESTO** 



- N - Flow rates of up to



- \[ \] - Valve width 10 mm



- **\**  - Voltage 24 V DC



General technical data												
Valve function	5/2-way valve		2x 3/2-way	2x 3/2-way valve Normal position			5/3-way valve Mid-position					
	single	double	open	closed	1x open	pressur-	closed	exhausted	closed			
	solenoid	solenoid			1x closed	ised						
Valve function order code	M	J	N	K	Н	В	G	E	D			
Constructional design	Electromagne	etically actuat	ed piston spo	ol valve								
Width [mm]	10											
Nominal size [mm]	3.5	3.5	3.2	2.8	3.1	3.1	3.3	2.8	2.8			
Lubrication	Lubrication f	or life, PWIS-f	ree (free of pa	int-wetting imp	airment substan	ces)						
Type of mounting	Wall mounting											
Mounting position	Any	· ·										
Manual override	Push-in, rota	ry/detenting,	covered									
Pneumatic connections												
Pneumatic connection		al connections	on sub-base									
Supply port 1	M7											
Exhaust port 3/5	M7											
Working lines 2/4	M7											
Pilot air port 12/14	M5											
Pilot exhaust 82/84	M5											
air port												
Pressure compensation port	M5											

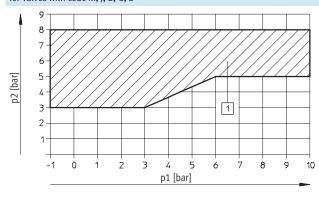


Technical data

Operating pressure [bar]									
Valve function order code	M	J	N	K	Н	В	G	Е	D
Internal auxiliary pilot air	3 8	38							
External auxiliary pilot air	-0.9 +10		3 10			-0.9 +10			3 10

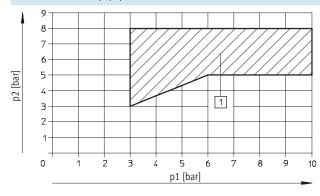
## Pilot pressure p2 as a function of the working pressure p1 with external auxiliary pilot air

for valves with code M, J, B, G, E



1 Operating range for valves with external auxiliary pilot air

## for valves with code N, K, H, D



1 Operating range for valves with external auxiliary pilot air

Valve response times [ms]										
Valve function order code		M	J	N	K	Н	В	G	Е	D
Response times	on	10	-	10	10	10	10	10	10	10
	off	20	-	20	20	20	35	35	35	20
	change-	-	10	-	-	-	-	-	-	-
	over									

Operating and environmental conditions											
Valve function order code		M	J	N	K	Н	В	G	Е	D	
Operating medium		Filtered co	mpressed a	ir, lubricated	or unlubricat	ed, inert gases	;				
Grade of filtration	[µm]	40 (averag	(average pore size)								
Ambient temperature	[°C]	-5 +50									
Storage temperature <sup>2)</sup>	[°C]	-20 +40	)								
Corrosion resistance class	CRC <sup>1)</sup>	1									

- Corrosion resistance class 1 according to Festo standard 940 070 Components requiring low corrosion resistance. 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.

  2) Long-term storage

# **Solenoid valves VMPA1**

**FESTO** 

Technical data

Electrical data											
Valve function order code		M	J	N	K	Н	В	G	Е	D	
Electromagnetic compatib	ility	Interferer	Interference emission tested to EN 61 000-6-4, industry								
		Interference immunity <sup>1)</sup> tested to EN 61 000-6-2, industry									
Protection against electric	shock	By means	of PELV po	wer supply uni	t						
(protection against direct	and indirect										
contact to EN 60204-1/IEC	204)										
Operating voltage	[V]	24 (±25%	(b)								
Current consumption per s	solenoid coil										
	at 18 V	Nominal pull current (up to 20 ms) 60 mA/nominal current with current reduction (after 20 ms) 20 mA									
	at 24 V	Nominal	pull curren	t (up to 20 ms)	80 mA/nomir	al current wit	h current redu	ction (after 20	) ms) 20 mA		
	at 30V	Nominal	pull curren	t (up to 20 ms)	100 mA/nom	inal current w	ith current rec	luction (after 2	20 ms) 20 mA		
Electrical power	[W]	Pull: 1									
consumption		Hold: 0.2	4								
Duty cycle		100% at	40°C ambi	ent temperatu	re						
Protection class to EN 60	529	IP65 (in a	ssembled:	state and with	detenting plu	g)					
Relative air humidity		90% at 4	0°C, non-c	ondensing							
Vibration resistance		To DIN/IE	C 68/EN 60	068, Parts 2-0	5: 0.35 mm at	10 60 Hz,	5 g at 60 15	0 Hz			
Shock resistance		To DIN/IE	C 68/EN 60	068, Parts 2-2	27: +/-30 g a	11 ms, 15 cy	rcles				
Continuous shock resistan	ice	To DIN/IE	C 68/EN 60	068, Parts 2-2	29: +/-15 g a	6 ms, 1000 c	cycles				

- The maximum signal line length is 10 m
   Intrinsic current consumption per electronics module

Materials										
Valve function order code	M	J	N	K	Н	В	G	E	D	
Sub-base	Die-cast alu	minium								
Valve	Die-cast alu	minium, PPS	, ST, PA-GF							
Seals	NBR, HNBR,	Elastomer								
Supply plate	Die-cast alu	minium								
Right-hand end plate	Die-cast alu									
Left-hand pneumatic interface	Die-cast alu	minium, poly	/amide 6 (cov	er)						
Exhaust plate	Polyamide									
Surface mounted silencer	Polyethylen	Polyethylene								
Electronics module	POM/polyca	ırbonate								
Electrical interlinking	CuBe/PBT									





Product weight [g]	approx. weig	hts							
Valve function order code	M	J	N	K	Н	В	G	Е	D
Individual sub-base	45								
per valve M	49								
per valve J, N, K, H, B, G, E, D	56								
QSM-M5-3-I	3								
QSM-M5-4-I	4								
QSM-M5-6-I	5								
QSM-M7-4-I	4								
QSM-M7-6-I	5								

<sup>1)</sup> With thin metal seal, inscription label holder, screws

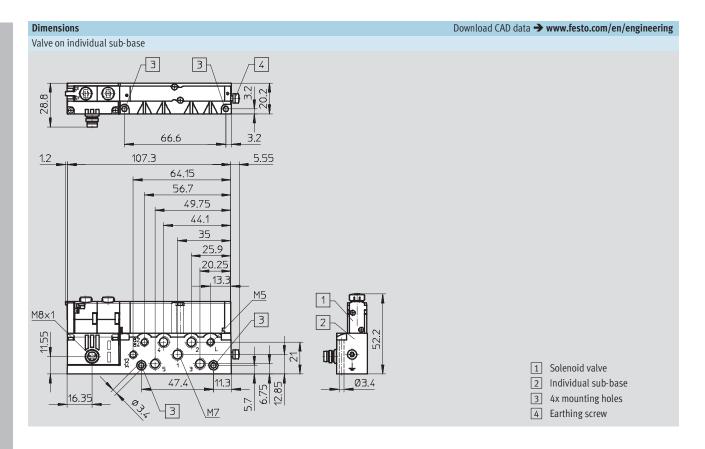
Nomin	al flow rate [l/min] <sup>1)</sup>			
Code	Valve function	Valve $(1 \rightarrow 2)^2$	Valve $(2 \rightarrow 3)^2$	
Sub-ba	se valve			
M	5/2-way valve,	360	360	
	single solenoid			
J	5/2-way valve,	360	360	
	double solenoid			
N	2x 3/2-way valve,	300	300	
	normally open			
K	2x 3/2-way valve,	230	310	
	normally closed			
Н	2x 3/2-way valve,	280	305	
	1x normally open			
	1x normally closed			
В	5/3-way valve,	300	270	
	mid-position pressurised			
G	5/3-way valve,	320	320	
	mid-position closed			
E	5/3-way valve,	240	240	
	mid-position exhausted			
D	2x 2/2-way valve	230	230	

Flow rates measured on sub-base with QS-6 push-in fittings
 Values refer to the flow direction 1 → 2 or 2 → 3

# **Solenoid valves VMPA1**

Technical data





# **Directional control valves for standard applications** Valves MPA

2.5

# **Solenoid valves VMPA1**

Ordering data



es on individual	l sub-base					
	Code	Valve function	Part No. Type			
<b>.</b>	Interna	Internal auxiliary pilot air				
17	M	5/2-way valve,	533 376 VMPA1-M1H-M-M7-PI			
		single solenoid				
00 00	J	5/2-way valve,	533 377 VMPA1-M1H-J-M7-PI			
00		double solenoid				
	N	2x 3/2-way valve,	533 382 VMPA1-M1H-N-M7-PI			
		normally open				
	K	2x 3/2-way valve,	533 381 VMPA1-M1H-K-M7-PI			
		normally closed				
	Н	2x 3/2-way valve,	533 383 VMPA1-M1H-H-M7-PI			
		1x normally open				
		1x normally closed				
	В	5/3-way valve,	533 378 VMPA1-M1H-B-M7-PI			
		mid-position pressurised				
	G	5/3-way valve,	533 379 VMPA1-M1H-G-M7-PI			
		mid-position closed				
	E	5/3-way valve,	533 380 VMPA1-M1H-E-M7-PI			
	_	mid-position exhausted				
	D	2x 2/2-way valve,	533 384 VMPA1-M1H-D-M7-PI			
	-	normally closed				
	Externa	External auxiliary pilot air				
	M	5/2-way valve,	533 385 VMPA1-M1H-MS-M7-			
		single solenoid				
	J	5/2-way valve,	533 386 VMPA1-M1H-JS-M7-P			
		double solenoid				
	N	2x 3/2-way valve,	533 391 VMPA1-M1H-NS-M7-F			
		normally open				
	K	2x 3/2-way valve,	533 390 VMPA1-M1H-KS-M7-F			
		normally closed				
	Н	2x 3/2-way valve,	533 392 VMPA1-M1H-HS-M7-F			
		1x normally open				
		1x normally closed				
	В	5/3-way valve,	533 387 VMPA1-M1H-BS-M7-F			
		mid-position pressurised				
	G	5/3-way valve,	533 388 VMPA1-M1H-GS-M7-F			
		mid-position closed				
	E	5/3-way valve,	533 389 VMPA1-M1H-ES-M7-P			
		mid-position exhausted				
	D	2x 2/2-way valve,	533 393 VMPA1-M1H-DS-M7-F			
		normally closed				

# **Solenoid valves VMPA1**Ordering data



Ordering data			
Individual sub-base	valve		
	Code	Valve function	Electrical plug-in connection
			Part No. Type
€ PERSON	M	5/2-way valve,	533 342 VMPA1-M1H-M-PI
		single solenoid	
	J	5/2-way valve,	533 343 VMPA1-M1H-J-PI
		double solenoid	
	N	2x 3/2-way valve,	533 348 VMPA1-M1H-N-PI
		normally open	
	K	2x 3/2-way valve,	533 347 VMPA1-M1H-K-PI
		normally closed	
	Н	2x 3/2-way valve,	533 349 VMPA1-M1H-H-PI
		1x normally open	
		1x normally closed	
	В	5/3-way valve,	533 344 VMPA1-M1H-B-PI
		mid-position pressurised	
	G	5/3-way valve,	533 345 VMPA1-M1H-G-PI
		mid-position closed	
	E	5/3-way valve,	533 346 VMPA1-M1H-E-PI
		mid-position exhausted	
	D	2x 2/2-way valve,	533 350 VMPA1-M1H-D-PI
		normally closed	

Accessories



Ordering data				
Designation			Part No.	Туре
Sub-base			<u>'</u>	
ATI	Individual connection, internal auxiliary pilot air	533 394	VMPA1-IC-AP-1	
	Individual connection, external auxiliary pilot air		533 395	VMPA1-IC-AP-S-1
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
000				
20				
Cover				
	Cover for manual override, detenting (10 pieces)		533 366	VMPA1-HBT
	Cover for manual override, covered (10 pieces)		535 257	VMPA1-HBV
	, , , , , , , , , , , , , , , , , , ,			
Individual connection	n, electrical			
	Plug socket with cable	2.5 m	158 960	SIM-M8-4GD-2,5-PU
		5 m	158 961	SIM-M8-4GD-5-PU
	Plug socket with cable	2.5 m	158 962	SIM-M8-4WD-2,5-PU
	i tag souther man capte	5 m	158 963	SIM-M8-4WD-5-PU
		3	130 703	3 1110 4110 3 1 0
Push-in fitting for su	h-hase			
<u> </u>	Connecting thread M5 for tubing O.D.	3 mm (10 pieces)	153 313	QSM-M5-3-I
	commenting through my for tubing order	4 mm (10 pieces)	153 315	QSM-M5-4-I
		6 mm (10 pieces)	153 317	QSM-M5-6-I
	Connecting thread M7 for tubing O.D.	4 mm (10 pieces)	153 319	QSM-M7-4-I
	connecting thread my for tabing o.b.	6 mm (10 pieces)	153 321	QSM-M7-6-I
		o IIIII (10 pieces)	133322	QSIII III, U I
Silencer				
Siterioer	Connecting thread	M5	165 003	UC-M5
	Connecting timead	M7	161 418	UC-M7
	Push-in sleeve connection type	3 mm	165 005	UC-QS-3H
	rusii-iii steeve connection type		165 006	UC-QS-4H
		4 mm		
		6 mm	165 007	UC-QS-6H
	1			
Planking plug				
Blanking plug	Throad MC		2.042	D Mr
	Thread M5		3 843	B-M5
$\mathcal{Y}$	Thursday AA7		174 309	D 147
	Thread M7			B-M7
81				
Plug	Tau in a sur	T.	T	
	Blanking plug for tubing O.D.	4 mm	153 267	QSC-4H
		6 mm	153 268	QSC-6H
<b>v</b>				

## **Product Range and Company Overview**

## **A Complete Suite of Automation Services**

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



**Custom Automation Components**Complete custom engineered solutions



**Custom Control Cabinets**Comprehensive engineering support and on-site services



**Complete Systems**Shipment, stocking and storage services

## **The Broadest Range of Automation Components**

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



**Electromechanical**Electromechanical actuators, motors, controllers & drives



**Pneumatics**Pneumatic linear and rotary actuators, valves, and air supply



PLC's and I/O Devices
PLC's, operator interfaces, sensors
and I/O devices

## Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

## Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



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## **Festo North America**

## **United States**

## **Customer Resource Center**

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For ordering assistance, or to find your nearest Festo Distributor, **Call:** 1.800.99.FESTO **Fax:** 1.800.96.FESTO

Email: customer.service@us.festo.com

For technical support,
Call: 1.866.GO.FESTO
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## **Festo Worldwide**

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