

- Vacuum filters VAF
- Filters ESF
- Angle compensators ESWA
- Height compensators VAL
- Elbows LJK
- Vacuum gauges VAM
- Silencers UO
- Valves for vacuum operation

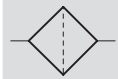
# Accessories for vacuum technology

Technical data

FESTO

## Vacuum filters VAF

### Function



### Note

The vacuum suction filter may only be used in open vacuum systems.

Temperature range  
0 ... +40 °C

Operating pressure  
-0.9 ... 0 bar

The vacuum suction filter serves for filtering dirt in the direction of suction.  
It is inserted in the tubing as an inline filter.



General technical data			
Size	PK-3	PK-4	PK-6
Design	Filter element in the translucent status		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	In-line installation		
Vacuum port	PK-3 with locknut	PK-4 with locknut	PK-6 with locknut
Grade of filtration [µm]	50		
Vacuum filter flow [l/min]	50.8	70	210
Nominal size [mm]	2	3	4.6
Operating pressure [bar]	-0.95 ... 0		
Ejector pulse possibility [bar]	≤8		

1) At vacuum pressure = -0.75 bar

Ambient conditions			
Size	PK-3	PK-4	PK-6
Ambient temperature [°C]	0 ... +40		

Materials	
Housing	Polyamide
Filter	Mesh / Polyamide
Union nut	Polyacetate

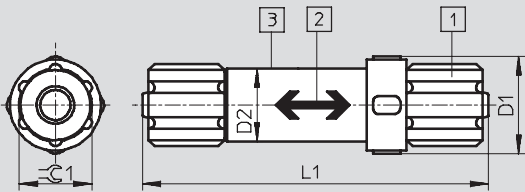
Weights [g]			
Size	PK-3	PK-4	PK-6
VAF- ...	4	6	9

# Accessories for vacuum technology

Technical data

FESTO

**Dimensions**



- 1 Quick connectors for plastic tubing
- 2 Flow direction indicated with arrow
- 3 Degree of contamination visible through the transparent housing

Type	D1 Ø	D2 Ø	L1	≈ C 1
VAF-PK-3	16	12	50.8	8
VAF-PK-4	16	12	57	12
VAF-PK-6	24	19	64	14

Ordering data		
Pneumatic connection	Part No.	Type
PK-3	535 883	VAF-PK-3
PK-4	15 889	VAF-PK-4
PK-6	160 239	VAF-PK-6

# Accessories for vacuum technology

Technical data

FESTO

## Filter ESF

Temperature range  
0 ... +60 °C

Operating pressure  
-0.95 ... 4 bar

Note

For suction gripper ESG, between  
suction cup and suction cup holder  
→ 6 / 2.1-6



General technical data			
Holder size	3	4A	4B
Mounting position	Any		
Type of mounting	In-line installation with threaded connection		
Grade of filtration [µm]	10		
Flow rate [l/min]	100	260	270
Operating pressure [bar]	-0.95 ... 4		

Ambient conditions			
Holder size	3	4A	4B
Housing	Aluminium, nickel-plated brass		
Seals	Nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	0 ... +60		
Corrosion resistance CRC <sup>1)</sup>	1		

- 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.

Weights [g]			
Holder size	3	4A	4B
ESF- ...	9	19	57

Dimensions						

Type	D1 Ø	D2	D3 Ø	L1	L2	L3
ESF-3	25	M4x0.7	7.8	10.5	4.5	3.1
ESF-4A	25	M6x1	8.8	10.5	5.5	3.9
ESF-4B	40	M6x1	8.8	14	5.5	3.9

Ordering data		
Holder size	Part No.	Type
3	191 202	ESF-3
4A	191 203	ESF-4A
4B	191 204	ESF-4B

# Accessories for vacuum technology

Technical data

FESTO

## Angle compensator ESWA

Temperature range  
0 ... +60 °C

Note

For suction gripper ESG, between  
suction cup and suction cup holder  
→ 6 / 2.1-6



General technical data			
Holder size	3	4	5
Design	Ball joint with $\pm 15^\circ$ swivel angle		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	With threaded connection		

Ambient conditions			
Holder size	3	4	5
Housing	Aluminium		
Seals	Nitrile rubber		
Ambient temperature [°C]	0 ... +60		
Corrosion resistance CRC <sup>1)</sup>	1		

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.

Weights [g]			
Holder size	3	4	5
ESWA- ...	9	19	57

Dimensions				

Type	D1 Ø	D2	L1	L2
ESWA-3	15	M4x0.7	23	4
ESWA-4	20	M6x1	28.5	6
ESWA-5	28	M10x1.5	40.5	10

Ordering data		
Holder size	Part No.	Type
3	191 205	ESWA-3
4	191 206	ESWA-4
5	191 207	ESWA-5

# Accessories for vacuum technology

Technical data

FESTO

## Height compensator VAL

Temperature range  
-10 ... +60 °C

Note

For suction cup VAS/VASB  
→ 6 / 2.1-78

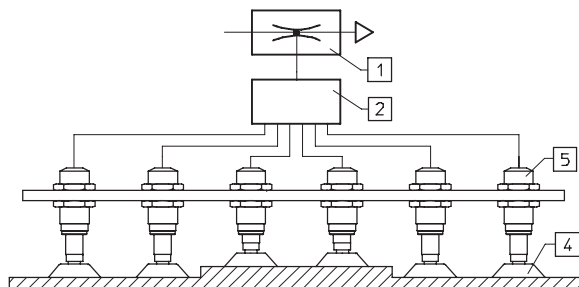


General technical data			
Size	5	10	20
Design	Vacuum port on top		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	Mounting on the male thread or via the female air connection thread of the housing		
Vacuum port	M5	G1/8	G1/4
Operating pressure [bar]	-0.95 ... 8		

Ambient conditions			
Size	5	10	20
Housing	Aluminium		
Seals	Nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	-10 ... +60		

Gentle handling of the workpieces by compensating for any excess stroke of the handling device or tolerance differences in the workpiece thickness.

- 1 Vacuum generator
- 2 Distributor
- 4 Suction cup
- 5 Height compensator

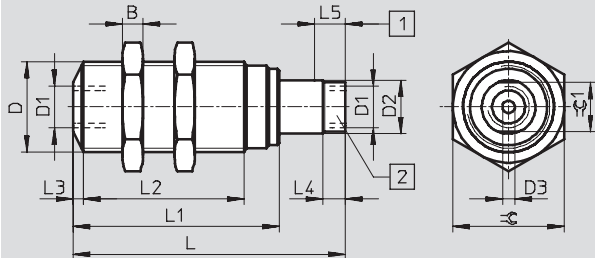


# Accessories for vacuum technology

Technical data

**FESTO**

## Dimensions



- [1] Spring travel for height compensator  
[2] Suction cup connector

Type	B	D	D1	D2 Ø	D3 Ø	L	L1	L2	L3	L4	L5	⌀	⌀ 1
VAL-M5-5	5	M16x1	M5	8	2	46	35	25.5	2	4.5	5	19	7
VAL-1/8-10	6	M22x1.5	G1/8	13	3	66	50	39	2.5	5.5	10	27	12
VAL-1/4-20	8	M26x1.5	G1/4	17	4	100	73	60	2.5	6.5	20	32	16

## Ordering data

Height compensator [mm]	Vacuum port	Part No.	Type
5	M5	151 209	VAL-M5-5 <sup>1)</sup>
10	G1/8	151 210	VAL-1/8-10 <sup>1)</sup>
20	G1/4	151 211	VAL-1/4-20 <sup>1)</sup>

1) Free of copper, PTFE and silicone

# Accessories for vacuum technology

Technical data

FESTO

## Elbow fitting LJK

Temperature range  
-10 ... +60 °C

Operating pressure  
-0.95 ... 8 bar

Note

For suction cup VAS/VASB  
→ 6 / 2.1-78

- Redirection of air connection
- Swivel joint rotatable 360°
- For decoupling from mounting thread



General technical data			
Size	M5	G1/8	G1/4
Design	Swivel fitting with female thread		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	Mounting via the lateral connection section on the male thread of the hollow bolt		
Vacuum port	M5	G1/8	G1/4
Operating pressure [bar]	-0.95 ... 8		

Ambient conditions			
Size	M5	G1/8	G1/4
Swivel fitting	Die-cast zinc		
Seals	Nitrile rubber and steel/nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	-10 ... +60		
Corrosion resistance CRC <sup>1)</sup>	2		

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Dimensions		<div>1 Air connection (vacuum)</div> <div>2 Mounting thread</div>	

Vacuum port	B	D	H	H1	H2	L	L1	≡
M5	10	M5	20.3	3.8	7.5	17.5	12.5	8
G1/8	16	G1/8	30	5	10.6	28	20	13
G1/4	20	G1/4	39	8	13.5	36	26.5	17

Ordering data		
Vacuum port	Part No.	Type
M5	151 783	LJK-M5-I/I
G1/8	151 784	LJK-1/8-I/I
G1/4	151 785	LJK-1/4-I/I

## Accessories for vacuum technology


Technical data


FESTO

### Vacuum gauge VAM, DIN EN 837-1

#### Function



-  - Temperature range  
-10 ... +60 °C

-  - Pressure  
-1 ... +9 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to  $\frac{3}{4}$  of their full scale value under static load and up to  $\frac{2}{3}$  under intermittent load conditions



General technical data			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Pneumatic connection	R $\frac{1}{8}$	R $\frac{1}{4}$	
Operating pressure [bar]	-1 ... 0	-1 ... 0	-1 ... +9
Operating medium	Dried air, lubricated or unlubricated, vacuum		
Design	Bourdon tube pressure gauge		
Based on standard	DIN EN 837-1		
Type of mounting	Can be screwed in		
Type of seal on threaded plug	Coating		
Mounting position	Any		
Connection position	Centre, rear side		
Ambient temperature [°C]	-10 ... +60		
Accuracy of measurement, class	2.5		
Factor, continuous load	0.75		
Factor, intermittent load	0.66		

Display			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Scale	Double scale		
	bar (outer)		
	inHg/psi (inner)		
Indicating range [bar]	-1 ... 0	-1 ... 0	-1 ... +9
[inHg]	-30 ... 0	-30 ... 0	-30 ... 0
[psi]	-	-	0 ... +130

Product weights [g]		
Nominal tubing size, pressure gauge	40	63
VAM	63	83

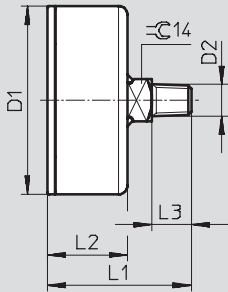
Materials	
Housing	Acrylic butadiene styrene
Window shield	Polystyrene
Threaded plug	Brass

# Accessories for vacuum technology

Technical data

**FESTO**

## Dimensions



Type	D1 Ø	D2	L1	L2	L3
VAM-40	39 ±0.5	R <sup>1</sup> / <sub>8</sub>	46 ±1	26 ±0.5	12
VAM-63	62 ±0.5	R <sup>1</sup> / <sub>4</sub>	47.5 ±1	26.5 ±0.5	13

## Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range			Part No.	Type
		[bar]	[inHg]	[psi]		
40	R <sup>1</sup> / <sub>8</sub>	-1 ... 0	-30 ... 0	-	537 810	VAM-40-V1/0-R <sup>1</sup> / <sub>8</sub> -EN
63	R <sup>1</sup> / <sub>4</sub>	-1 ... 0	-30 ... 0	-	537 811	VAM-63-V1/0-R <sup>1</sup> / <sub>4</sub> -EN
		-1 ... 9	-30 ... 0	0 ... +130	537 814	VAM-63-V1/9-R <sup>1</sup> / <sub>4</sub> -EN

## Accessories for vacuum technology


Technical data

**Vacuum gauge VAM, DIN EN 837-1, with red-green range**

Function



-  - Temperature range  
-10 ... +60 °C

-  - Pressure  
-1 ... 0 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to  $\frac{3}{4}$  of their full scale value under static load and up to  $\frac{2}{3}$  under intermittent load conditions
- The adjustable red-green range provides additional safety when monitoring compressed air



General technical data		
Nominal tubing size, pressure gauge	40	63
Type	VAM-40-V1/0-R $\frac{1}{8}$	VAM-63-V1/0-R $\frac{1}{4}$
Pneumatic connection	R $\frac{1}{8}$	R $\frac{1}{4}$
Operating pressure [bar]	-1 ... 0	
Operating medium	Dried air, lubricated or unlubricated	
Design	Bourdon tube pressure gauge	
Based on standard	DIN EN 837-1	
Type of mounting	Can be screwed in	
Type of seal on threaded plug	Coating	
Mounting position	Any	
Connection position	Centre, rear side	
Ambient temperature [°C]	-10 ... +60	
Accuracy of measurement, class	2.5	
Factor, continuous load	0.75	
Factor, intermittent load	0.66	

Display		
Nominal tubing size, pressure gauge	40	63
Type	VAM-40-V1/0-R $\frac{1}{8}$	VAM-63-V1/0-R $\frac{1}{4}$
Scale	Single scale bar	
Indicating range [bar]	-1 ... 0	-1 ... 0

Product weights [g]		
Nominal tubing size, pressure gauge	40	63
Type	VAM-40-V1/0-R $\frac{1}{8}$	VAM-63-V1/0-R $\frac{1}{4}$
VAM	65	90

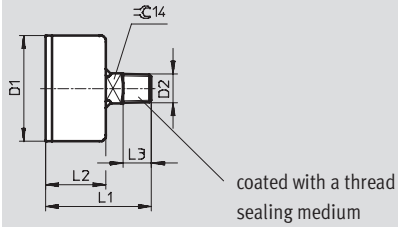
Materials	
Housing	Acrylic butadiene styrene
Window shield	Polystyrene
Segment	Polystyrene
Threaded plug	Brass

## Accessories for vacuum technology

**FESTO**

Technical data

### Dimensions



Type	D1 Ø	D2	L1	L2	L3
VAM-40-...-E-RG	39 ±0.5	R <sup>1</sup> / <sub>8</sub>	48.5 ±1	28.5 ±0.5	12
VAM-63-...-E-RG	62 ±0.5	R <sup>1</sup> / <sub>4</sub>	50.5 ±1	29.5 ±0.5	13

### Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range	Part No.	Type
		[bar]		
40	R <sup>1</sup> / <sub>8</sub>	-1 ... 0	547 842	VAM-40-V1/0-R <sup>1</sup> / <sub>8</sub> -E-RG
63	R <sup>1</sup> / <sub>4</sub>	-1 ... 0	547 843	VAM-63-V1/0-R <sup>1</sup> / <sub>4</sub> -E-RG

# Accessories for vacuum technology

Technical data


FESTO

## Vacuum gauge VAM

### Function



-  - Temperature range  
-40 ... +60 °C

-  - Pressure  
-1 ... 0 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to  $\frac{3}{4}$  of their full scale value under static load and up to  $\frac{2}{3}$  under intermittent load conditions



General technical data		
Nominal tubing size, pressure gauge	40	63
Type	VAM-40-V1/0	VAM-63-V1/0
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$
Operating pressure [bar]	-1 ... 0	-1 ... 0
Operating medium	Filtered compressed air, lubricated or unlubricated, vacuum	
Design	Bourdon tube pressure gauge	
Conforms to	DIN EN 837-1	
Type of mounting	Can be screwed in	
Connection position	Centre, rear side	
Ambient temperature [°C]	-40 ... +60	
Corrosion resistance classification CRC <sup>1)</sup>	4	
Accuracy of measurement, class	2.5	
Protection class	IP43	

1) CRC4: Corrosion resistance class to Festo standard 940 070

Components with very heavy corrosion exposure. Components in contact with aggressive media, e.g. in food or chemical industries. These applications must, if necessary, be verified by special tests with the media concerned.

Display		
Nominal tubing size, pressure gauge	40	63
Type	VAM-40-V1/0	VAM-63-V1/0
Scale	Double scale bar (outer) inHg (inner)	
Indicating range [bar]	-1 ... 0	-1 ... 0
[inHg]	-30 ... 0	-30 ... 0

Product weights [g]		
Nominal tubing size, pressure gauge	40	63
VAM	63	112

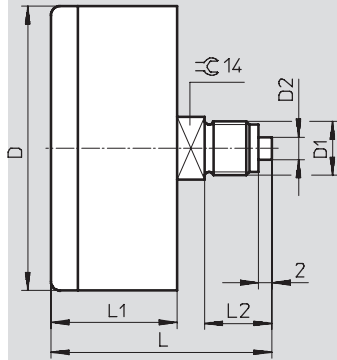
Materials	
Housing	High-alloy stainless steel
Window shield	Polycarbonate
Note on material	Free of copper and PTFE

# Accessories for vacuum technology

Technical data

**FESTO**

## Dimensions



Type	D Ø	D1	D2 Ø	L	L1	L2
VAM-40	40	G $\frac{1}{8}$	8	43.5	27.5	10
VAM-63	63	G $\frac{1}{4}$	5	51	30	15

## Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range		Part No.	Type
		[bar]	[inHg]		
40	G $\frac{1}{8}$	-1 ... 0	-30 ... 0	183 521	VAM-40-V1/0- $\frac{1}{8}$ -CT
63	G $\frac{1}{4}$	-1 ... 0	-30 ... 0	183 522	VAM-63-V1/0- $\frac{1}{4}$ -CT

## Accessories for vacuum technology


Technical data


FESTO

### Vacuum gauge FVAM, DIN EN 837-1

Function



-  - Temperature range  
-10 ... +60 °C

-  - Pressure  
-1 ... 0 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to  $\frac{3}{4}$  of their full scale value under static load and up to  $\frac{2}{3}$  under intermittent load conditions.



General technical data		
Nominal tubing size, pressure gauge	40	63
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$
Operating pressure [bar]	-1 ... 0	-1 ... 0
Operating medium	Dried air, lubricated or unlubricated, vacuum	
Design	Bourdon tube pressure gauge	
Based on standard	DIN EN 837-1	
Type of mounting	Panel mounting	
Type of seal on threaded plug	Coating	
Mounting position	Any	
Connection position	Centre, rear side	
Ambient temperature [°C]	-10 ... +60	
Accuracy of measurement, class	2.5	
Factor, continuous load	0.75	
Factor, intermittent load	0.66	

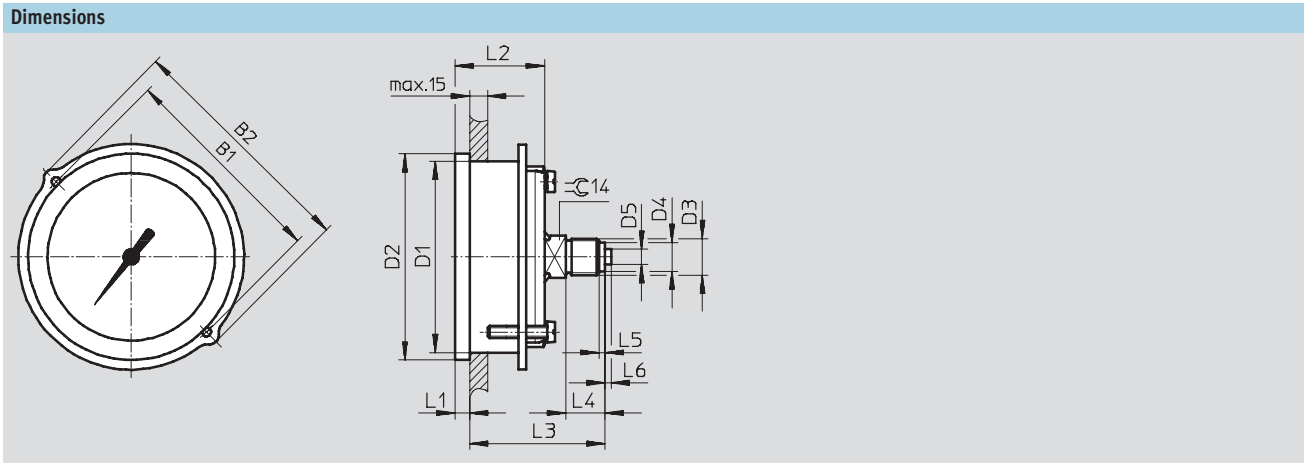
Display		
Nominal tubing size, pressure gauge	40	63
Scale	Double scale	
	bar (outer)	
	inHg/psi (inner)	
Indicating range [bar]	-1 ... 0	-1 ... 0
[inHg]	-30 ... 0	-30 ... 0

Product weights [g]		
Nominal tubing size, pressure gauge	40	63
FVAM	81	121

Materials	
Housing	Acrylic butadiene styrene
Window shield	Polymethylmethacrylate
Threaded plug	Brass

# Accessories for vacuum technology

Technical data



Type	B1	B2	D1 Ø	D2 Ø	D3 Ø	D4 Ø	D5 Ø	L1	L2	L3	L4	L5	L6
FVAM-40	48	56	40	45	G1/8	8	–	4.5	26.5	40	10	2	–
FVAM-63	70	79	63	68	G1/4	9.5	5	4.8	29.5	42.5	13	2	2

Ordering data					
Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range		Part No.	Type
		[bar]	[inHg]		
40	G1/8	–1 ... 0	–30 ... 0	537 812	FVAM-40-V1/0-G1/8-EN
63	G1/4	–1 ... 0	–30 ... 0	537 813	FVAM-63-V1/0-G1/4-EN

# Accessories for vacuum technology

Technical data

FESTO

## Silencer UO

for vacuum generators VN-T2/T3

→ 6 / 1.1-13, 6 / 1.1-35

- Special minimal resistance silencer
- Facilitates trouble-free operation of the vacuum generator

Function

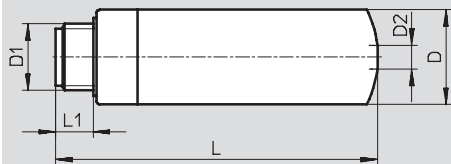


General technical data			
Size	M7	G1/8	G1/4
Pneumatic connection	M7	G1/8	G1/4
Type of mounting	Threaded connection		
Assembly position	Any		
Product weight [g]	2.5	5	8

Operating and environmental conditions	
Operating pressure of vacuum generator [bar]	0 ... 8
Operating medium	Dried compressed air
Ambient temperature [°C]	-10 ... +60
Corrosion resistance class CRC <sup>1)</sup>	2

1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Materials	
Silencer insert	Polyethylene
Threaded collar	Polyethylene
Note on materials	Free of copper and PTFE

Dimensions	
	

Connection	D Ø	D1	D2	L	L1
M7	9.8	M7	3	36.7	5.5
G1/8	13.8	G1/8	3.5	48	6.5
G1/4	17.8	G1/4	5.3	62.3	8.5

Ordering data	
Pneumatic connection	Part No. Type
M7	197 582 UO-M7
G1/8	197 583 UO-1/8
G1/4	197 584 UO-1/4

## Accessories for vacuum technology

Technical data

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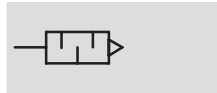
### Silencer UOM

#### Silencer extension UOMS

for vacuum generators VN-T4/T6

→ 6 / 1.1-13, 6 / 1.1-35

Function



- Special minimal resistance silencer
- Facilitates trouble-free operation of the vacuum generator
- Silencer extension for extending the silencer for further noise reduction



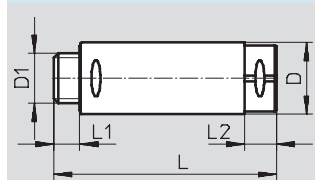
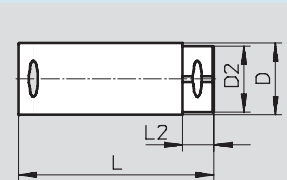
General technical data				
Type	UOM		UOMS	
Size	G1/4	G3/8	G1/4	G3/8
Pneumatic connection	G1/4	G3/8	–	
Design	Silencer, open			
Type of mounting	Screw-in		Engaging	
Assembly position	Any			
Type of seal on threaded collar	No seal			
Product weight [g]	11.1	22.7	8.6	17.5



Operating and environmental conditions		
Operating pressure of vacuum generator	[bar]	0 ... 8
Operating medium		Compressed air
Ambient temperature	[°C]	0 ... +60
Corrosion resistance class CRC <sup>1)</sup>		2

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

Materials	
Housing	Polyacetate
Inner piping	Wrought aluminium alloy
Silencer insert	Polyurethane foam
Threaded plug	Polyacetate
Note on materials	Free of copper and PTFE

Dimensions		Download CAD data → <a href="http://www.festo.com/en/engineering">www.festo.com/en/engineering</a>
UOM	UOMS	
		

Ordering data							Part No.	Type
D	D1	D2	L	L1	L2			
Ø		Ø						
Silencer								
17.8	G1/4	–	73	8	10		<b>538 432</b>	<b>UOM-1/4</b>  New
23.8	G3/8	–	74	8.6	10.5		<b>538 433</b>	<b>UOM-3/8</b>
Silencer extension								
17.8	–	16	64.5	–	10		<b>538 436</b>	<b>UOMS-1/4</b>  New
23.8	–	22	65.2	–	10.5		<b>538 437</b>	<b>UOMS-3/8</b>

## Accessories for vacuum technology

Accessories

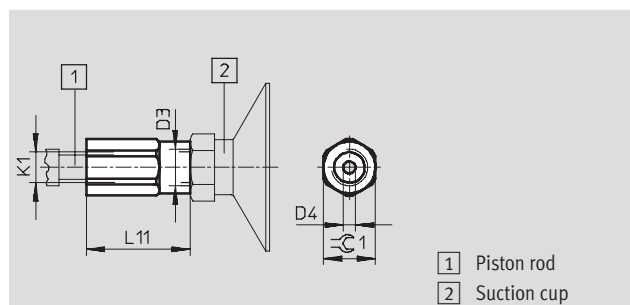
**FESTO**

### Adapter AD

for suction cups VAS/VASB

→ 6 / 2.1-78

for connection of suction cup with piston rod thread, for example



Ordering data					
Pneumatic connection	Vacuum port	D4	L11	≈C 1	Part No. Type
K1	D3	Ø			
M6	M5	2.3	27	10	157 328 AD-M6-M5
	G1/8	2.3	27	13	157 329 AD-M6-1/8
	G1/4	2.3	30	17	157 330 AD-M6-1/4
M8	G1/8	3.2	29	13	157 331 AD-M8-1/8
	G1/4	3.2	32	17	157 332 AD-M8-1/4
M10x1.25	G1/8	4	31	13	157 333 AD-M10x1,25-1/8
	G1/4	4	34	17	157 334 AD-M10x1,25-1/4
M12x1.25	G1/4	6	34	17	160 256 AD-M12x1,25-1/4
	G3/8	6	37	22	160 257 AD-M12x1,25-3/8

### Mounting plate VN-T...-NRH

for vacuum generator VN

→ 6 / 1.1-13

for mounting on H-rail or via through-hole

Ambient temperature: 0 ... +60 °C

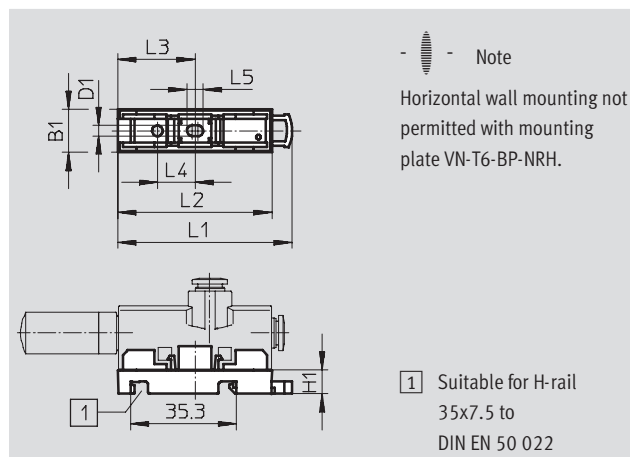
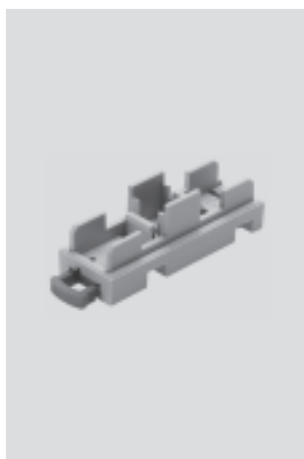
Material:


Plate VN-T2/T3/T4: Polyacetate, reinforced

Plate VN-T6: Polyamide, reinforced

Slide: Polyacetate

Free of copper and PTFE



Dimensions and ordering data											
Width [mm]	B1	D1	H1	L1	L2	L3	L4	L5	CRC <sup>1)</sup>	Weight [g]	Part No. Type
10	10.4	3.5	8	56.5	51	25.5	12.5	5.5	2	3.5	196 951 VN-T2-BP-NRH
14	14.4	3.5	8	57.9	51.2	25.6	12.5	5.5	2	4.5	193 641 VN-T3-BP-NRH
18	18.4									5.5	195 279 VN-T4-BP-NRH
24	24	4.3	7.3	98	91	45.5	32.5	6.3	2	12.4	196 956 VN-T6-BP-NRH  New

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

## Accessories for vacuum technology

Accessories

**FESTO**

### Mounting plate VN-T

for vacuum generators VN-A/B/M

→ 6 / 1.1-35

For wall mounting with through hole

for housing type T3/T4

[www.festo.com](http://www.festo.com)

Material:

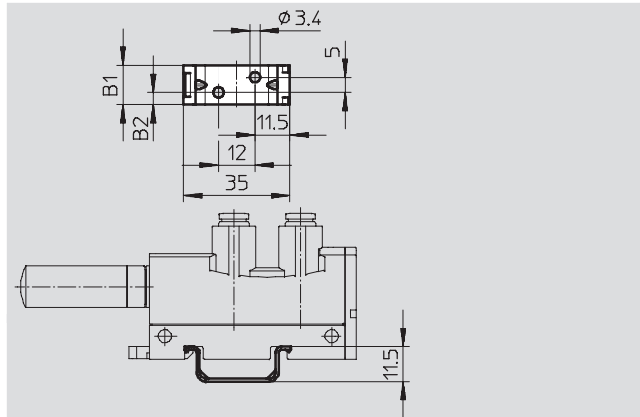
Plate: Galvanised steel

Free of copper and PTFE

 - Note

Mounting plate VN-T6-NRH must be used with housing type T6

→ 6 / 4.1-19



Dimensions and ordering data						
Width [mm]	B1	B2	CRC <sup>1)</sup>	Weight [g]	Part No.	Type
14	13	4	2	4.8	<b>547 436</b>	<b>VN-T3-BP</b>
18	17	6		6.4	<b>547 437</b>	<b>VN-T4-BP</b>

1) Corrosion resistance class 2 according to Festo standard 940 070

Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

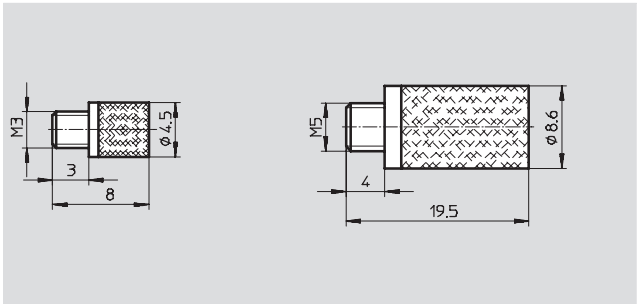
# Accessories for vacuum technology

Accessories



## Silencer U

Material:  
Sintered bronze



Ordering data			
Connection	Weight [g]	Part No.	Type
M5	5	4 645	U-M5

## Accessories for vacuum technology

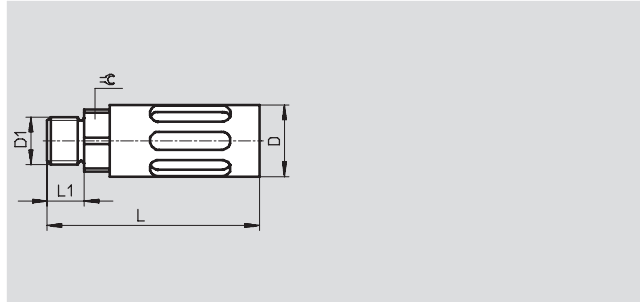
Accessories

FESTO

### Silencer U-...-B

Material:

Die-cast metal



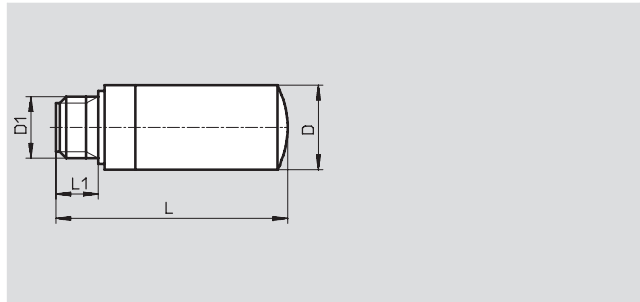
Ordering data							
Connection	D Ø	D1	L	L1	≅	Part No.	Type
G $\frac{1}{8}$	16	G $\frac{1}{8}$	39.2	5.5	14	6 841	U- $\frac{1}{8}$ -B <sup>1)</sup>
G $\frac{1}{4}$	19.5	G $\frac{1}{4}$	55.6	6.5	17	6 842	U- $\frac{1}{4}$ -B <sup>1)</sup>
G $\frac{3}{8}$	25	G $\frac{3}{8}$	86.6	7.5	19	6 843	U- $\frac{3}{8}$ -B <sup>1)</sup>

1) Free of copper, PTFE and silicone

### Silencer UC

Material:

Polyethylene



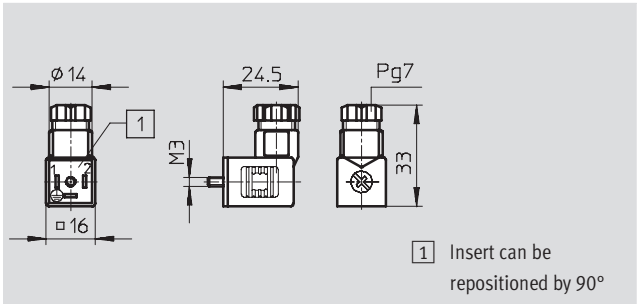
Ordering data							
Connection	D Ø	D1	L	L1	Part No.	Type	
G $\frac{1}{8}$	13.8	G $\frac{1}{8}$	38.0	6.5	161 419	UC- $\frac{1}{8}$	
G $\frac{1}{4}$	17.8	G $\frac{1}{4}$	51.0	8.5	165 004	UC- $\frac{1}{4}$	

# Accessories for vacuum technology

Accessories

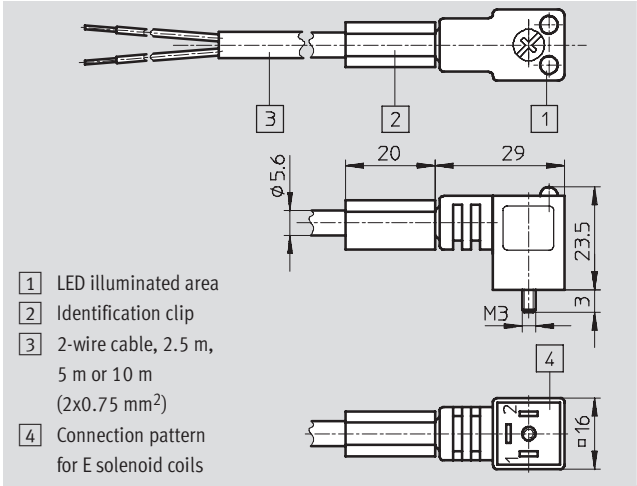
FESTO

Plug socket MSSD-E  
for solenoid coil ME



Ordering data			
		Part No.	Type
Plug socket		14 098	MSSD-E

Plug socket with cable KME-...  
for solenoid coil ME



Ordering data			
Length [m]	Voltage [V DC]	Part No.	Type
2.5	24	30 943	KME-1-24DC-2,5-LED
5	24	30 945	KME-1-24DC-5-LED
10	24	193 455	KME-1-24DC-10-LED

Illuminating seal ME-...  
for solenoid coil ME



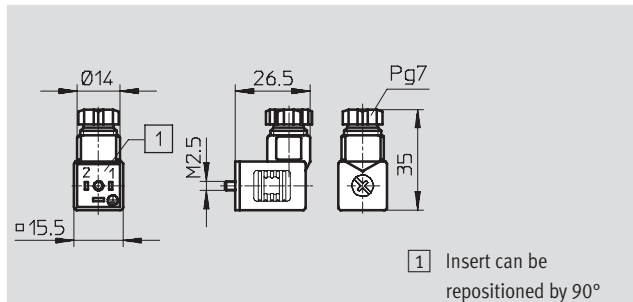
Ordering data			
Voltage [V DC]		Part No.	Type
24		19 141	ME-LD-12-24DC

## Accessories for vacuum technology

Accessories

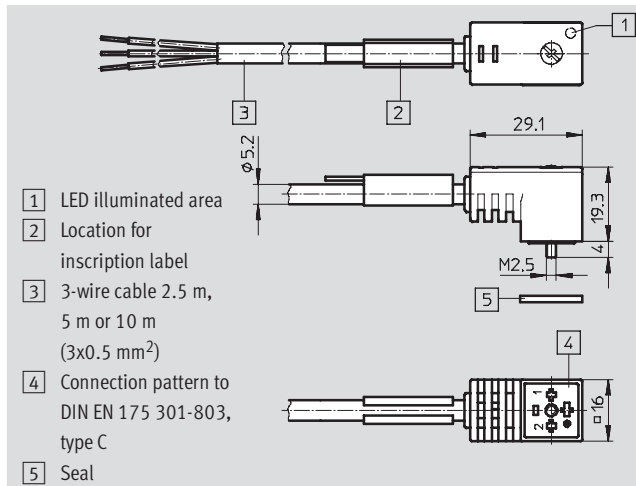
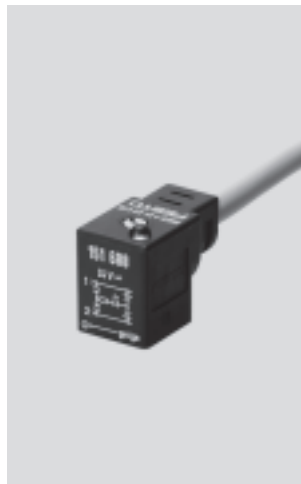
FESTO

**Plug socket MSSD-EB**  
for solenoid coil MEB



Ordering data			
	Part No.	Type	
Plug socket	151 687	MSSD-EB	

**Plug socket with cable KMEB-...**  
for solenoid coil MEB



Ordering data			
Length [m]	Voltage [V DC]	Part No.	Type
2.5	24	151 688	KMEB-1-24-2,5-LED
5.0	24	151 689	KMEB-1-24-5-LED
10.0	24	193 457	KMEB-1-24-10-LED

**Illuminating seal MEB-...**  
for solenoid coil MEB



Ordering data			
Voltage [V DC]	Part No.	Type	
24	151 717	MEB-LD-12-24DC	

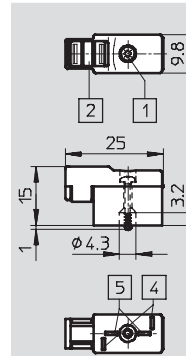
## Accessories for vacuum technology

Accessories

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### Plug socket MSSD-ZBZC

for solenoid coils MZB, MYB

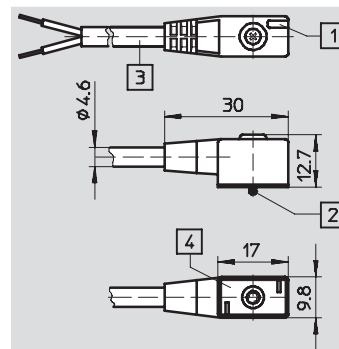


- 1 Mounting screw (self-tapping KB 18x12) max. tightening torque 0.3 Nm
- 2 Identification plates
- 4 Connection pattern for MSZB
- 5 Connection pattern for MSZC

Ordering data		
	Part No.	Type
Plug socket	185 521	MSSD-ZBZC

### Plug socket with cable KMYZ-....-LED

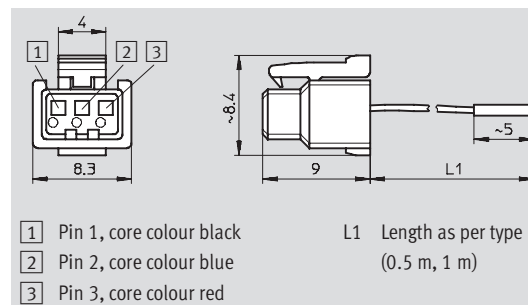
for solenoid coils MZB, MYB



- 1 LED illuminated area
- 2 Mounting screw (self-tapping KB 18x12/4) max. tightening torque 0.3 Nm
- 3 2-wire cable 2.5 m, 5 m or 10 m (2x 0.25 mm<sup>2</sup>)
- 4 Connection pattern for ZB solenoid coils

Ordering data		
Length [m]	Part No.	Type
2.5	34 997	KMYZ-2-24-2,5-LED
5.0	34 998	KMYZ-2-24-5-LED
10.0	193 443	KMYZ-2-24-10-LED

### Plug socket with cable KMH-...



- 1 Pin 1, core colour black
- 2 Pin 2, core colour blue
- 3 Pin 3, core colour red

L1 Length as per type (0.5 m, 1 m)

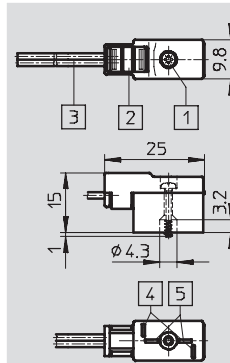
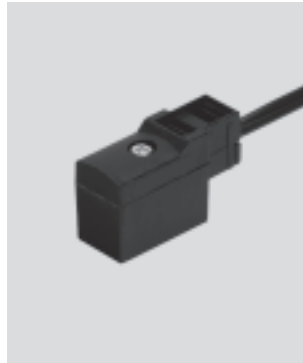
Ordering data		
Length [m]	Part No.	Type
0.5	197 263	KMH-0,5
1.0	197 264	KMH-1

## Accessories for vacuum technology

Accessories

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**Plug socket with cable KMYZ-...**  
for solenoid coils MZB, MYB



- 1 Mounting screw (self-tapping KB 18x12) max. tightening torque 0.3 Nm
- 2 Identification plates
- 3 2-wire cable 0.5 m or 2.5 m (1x0.35 mm<sup>2</sup>, 1x0.34 mm<sup>2</sup>)
- 4 Connection pattern for MSZB
- 5 Connection pattern for MSZC

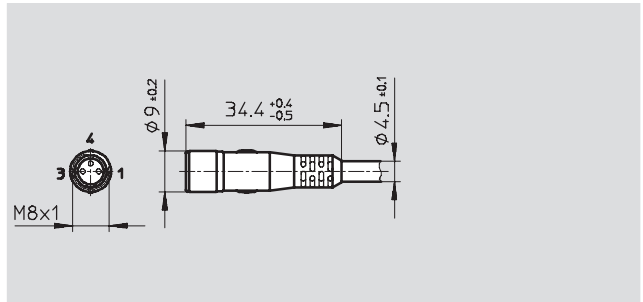
Ordering data		
Length [m]	Part No.	Type
0.5	185 519	KMYZ-4-24-0,5
2.5	185 520	KMYZ-4-24-2,5

**Plug socket with cable SIM-M8-3...**

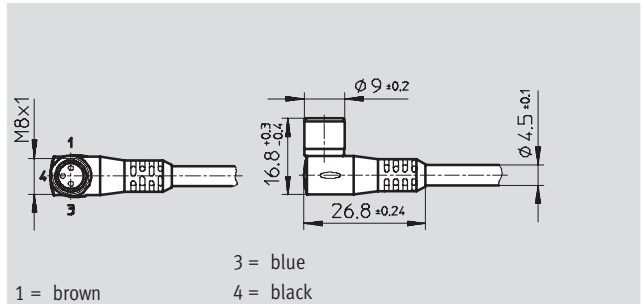
Material:  
Polyurethane



SIM-M8-3GD-...



SIM-M8-3WD-...



Ordering data				Technical data → Volume 4	
Ordering data				Technical data → <a href="http://www.festo.com">www.festo.com</a>	
Electrical connection	Cable length [m]	Connection direction		Part No.	Type
		Inline	Lateral		
M8x1, 3-pin	2.5	■	–	159 420	SIM-M8-3GD-2,5-PU
		–	■	159 422	SIM-M8-3WD-2,5-PU
	5	■	–	159 421	SIM-M8-3GD-5-PU
		–	■	159 423	SIM-M8-3WD-5-PU
	10	■	–	192 964	SIM-M8-3GD-10-PU
		–	■	192 965	SIM-M8-3WD-10-PU

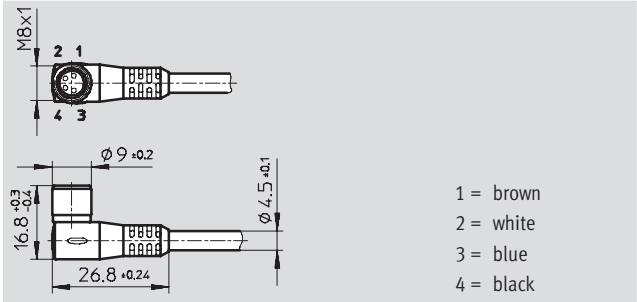
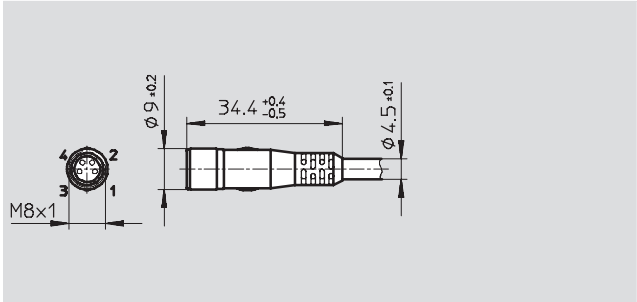
# Accessories for vacuum technology

Accessories



## Plug socket with cable SIM-M8-4...

Material:  
Polyurethane



Ordering data				Technical data → Volume 4	
Ordering data				Technical data → www.festo.com	
Electrical connection	Cable length [m]	Connection direction		Part No.	Type
		Inline	Lateral		
M8x1, 4-pin	2.5	■	—	158 960	SIM-M8-4GD-2,5-PU
		—	■	158 962	SIM-M8-4WD-2,5-PU
	5	■	—	158 961	SIM-M8-4GD-5-PU
		—	■	158 963	SIM-M8-4WD-5-PU

# Accessories for vacuum technology

Accessories

FESTO

## Valves suitable for vacuum

In contrast to the vacuum generator, the vacuum pump is an instrument for central vacuum generation that evacuates the entire network and does not create a vacuum directly on an installation – as is the case with the generator. From this network – or the

connected reservoirs – tubing is connected, which draws the vacuum. This requires the use of valves or valve terminals suitable for vacuum, which have a short response time in order to be able to achieve the shortest

possible evacuation times despite remote vacuum generation. The most important characteristic of these valves is their nominal size, as it determines the maximum suction rate and therefore the evacuation time.

The evacuation times to be achieved are also derived from the laval nozzle diameter of the vacuum generator. The evacuation time is thus the connection between the nominal valve size and laval nozzle diameter.

### For vacuum generators with high vacuum ...

- Vacuum generator VN
- Vacuum generator VAD
- Vacuum generator VADM/VADMI
- Vacuum generator VAD-M

... the following rules of thumb apply:

$$\frac{\text{Valve nom. size}}{3} = \text{Laval nozzle dia.}$$

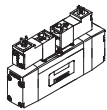
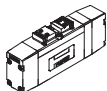
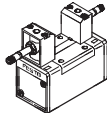
### For vacuum generators with high suction rate ...

- Vacuum generator VN

$$\frac{\text{Valve nom. size}}{4} = \text{Laval nozzle dia.}$$

## Standard directional control valves

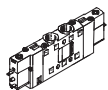
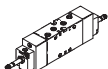
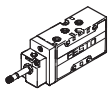
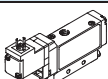
→ Volume 2

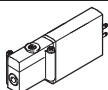
	ISO size	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
				On	Off		
Solenoid valves, ISO 15407-1							
	02	G1/8	6	18 ... 23	27 ... 34	5/2-way valve	MN2H-5/2-...-02-S
				16	16		JMN2H-5/2-...-02-S
	01	G1/4	8	24 ... 31	43 ... 58		MN2H-5/2-...-01-S
				16 ... 18	18		JMN2H-5/2-...-01-S
Pneumatic valves, ISO 15407-1							
	02	G1/8	6	8 ... 9	18	5/3-way valve	VL-5/3G-...-02
				6	6	5/2-way valve	J-5/2-...-02
				6	6		JD-5/2-...-02
	01	G1/4	8	13	32 ... 38	5/3-way valve	VL-5/3-...-01
				10	10	5/2-way valve	J-5/2-...-01
				9	9		JD-5/2-...-01
Solenoid valves, ISO 5599-1							
	1	G1/4	8	16 ... 23	35 ... 45	5/2-way valve	MFH-...-S-C
				16	16	5/3-way valve	JMFH-...-S-C
				17 ... 23	32 ... 39		MN1H-...-S-C
				18	18		JMN1H-...-S-C
	2	G3/8	11.5	27 ... 48	71 ... 73		MFH-...-S-C
				18	18	JMFH-...-S-C	
				24 ... 46	62 ... 69	MN1H-...-S-C	
				21	21	JMN1H-...-S-C	
	3	G1/2	14.5	30 ... 60	66 ... 82	MFH-...-S-C	
				18	18	JMFH-...-S-C	
				33 ... 49	71 ... 74	MN1H-...-S-C	
				21	21	JMN1H-...-S-C	

## Accessories for vacuum technology

Accessories

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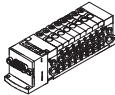
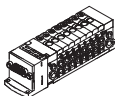
Directional control valves for standard applications						→Volume 2
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Solenoid valves CPE, Compact Performance						
	M5, M7, G1/8, G1/4, G3/8, push-in connector 4, 6, 8, 10, 12 mm	6	12 ... 27	12 ... 42	3/2-way valve	CPE14-...-S
		8	13 ... 28	13 ... 38	5/2-way valve	CPE18-...-S
		11	25 ... 50	25 ... 55	5/3-way valve	CPE24-...-S
Solenoid valves, Tiger 2000						
	G1/8	8	10 ... 24	12 ... 30	5/2-way valve	JMFH-...-S-B
			18 ... 30	18 ... 36	5/3-way valve	JMVH-...-S-B
	G1/4	10	14 ... 34	14 ... 44		JMFH-...-S-B
			16 ... 33	16 ... 40		JMVH-...-S-B
	G3/8	12	14 ... 36	14 ... 82		JMFH-...-S-B
			17 ... 32	17 ... 88		JMVH-...-S-B
Solenoid valves, Tiger Classic						
	G1/8	5	9	29	3/2-way valve	MFH-3-...-S
			4	10	5/2-way valve	VL/O-3-...-B
	G1/4	7	10	29		MFH-3-...-S
			8	30		VL/O-3-...-B
	G1/2	14	18	90		MFH-3-...-S
			17	30		VL/O-3-...-B
	G3/4	19	40	29		MFH-3-...-S
			23	23		VL/O-3-...-B
Solenoid valves, midi pneumatics						
	G1/8	5	10 ... 15	18 ... 28	3/2-way valve	MEBH-5/2-...
			10	10	5/2-way valve	JMEBH-5/2-...
			12	25	5/3-way valve	MEBH-5/3-...
			10 ... 15	18 ... 28		MEH-5/2-...
			10	10		JMEH-5/2-...
			12	25		MEH-5/3-...

Application-optimised directional control valves						→Volume 2
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Solenoid valves MH2, MH3, fast switching valves						
	M5, M7, QS4	2	2 ... 7	2 ... 7	3/2-way valve	MHE/P/A2-...
	G1/8, QS6	3				MHE/P/A3-...

# Accessories for vacuum technology

Accessories

**FESTO**

Application-optimised valve terminals						→ Volume 4
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Valve terminal type 82 CPASC1, Smart Cubic						
	M5, push-in connectors 3, 4 mm	2.5	10	25	2/2-way valve	CPASC1-M1H-B-...
			10	25	3/2-way valve	CPASC1-M1H-G-...
			10	25	5/2-way valve	CPASC1-M1H-E-...
			10	20	5/3-way valve	CPASC1-M1H-X-...
Valve terminal type 80 CPVSC1, Smart Cubic						
	M5, push-in connectors 3, 4 mm	2.5	10	10	2/2-way valve	CPVSC1-M1H-D-P
					3/2-way valve	CPVSC1-M1H-M-P
					5/2-way valve	CPVSC1-M1H-J-P
						CPVSC1-M1H-N-P
						CPVSC1-M1H-K-P

# Accessories for vacuum technology











Accessories

**FESTO**

## Modern connection technology

Festo offers a broad spectrum of tubing accessories in nominal sizes ranging from 2 ... 28 mm.

The range of accessories from Festo assures clear-cut control system layouts and easy assembly.

Product overview	Brief description	→ Volume 3
<b>Pipes</b>		
	<ul style="list-style-type: none"> <li>• Plastic pipes</li> <li>• Metal pipes</li> </ul>	
<b>Tubing</b>		
	<ul style="list-style-type: none"> <li>• Standard O.D., standard I.D.</li> <li>• Operating medium: Compressed air, water, vacuum</li> <li>• Variants: Temperature and chemical resistant, hydrolysis resistant, suitable for foodstuffs</li> </ul>	
<b>Spiral tubing</b>		
	<ul style="list-style-type: none"> <li>• Standard O.D.</li> <li>• Operating medium: Compressed air, water, vacuum</li> <li>• Materials: Polyamide, polyurethane</li> </ul>	
<b>Push-in fittings</b>		
	<ul style="list-style-type: none"> <li>• Threaded connection: Metric thread, G thread, R thread</li> <li>• Suitable for vacuum</li> <li>• Variants: Metal, stainless steel, flame retardant, antistatic</li> </ul>	
<b>Plugs/couplings</b>		
	<ul style="list-style-type: none"> <li>• Threaded connection: Metric thread, G thread</li> <li>• Self-sealing, shut-off on one side, safety coupling</li> <li>• Variants: Male thread, female thread</li> </ul>	
<b>Distributors</b>		
	<ul style="list-style-type: none"> <li>• Connection sizes: M3 ... G½</li> </ul>	
<b>Tubing cutters</b>		
	<ul style="list-style-type: none"> <li>• Pipe and tubing cutters</li> </ul>	
<b>Protective conduits</b>		
	<ul style="list-style-type: none"> <li>• Flexible, separable, fittings, adapters, connectors, distributors</li> </ul>	
<b>Air reservoirs</b>		
	<ul style="list-style-type: none"> <li>• EC directive 87/404</li> <li>• Variants: Stainless steel</li> </ul>	
<b>Air guns</b>		
	<ul style="list-style-type: none"> <li>• Variant: Air-saving function</li> </ul>	



# 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



**PLCs 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

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