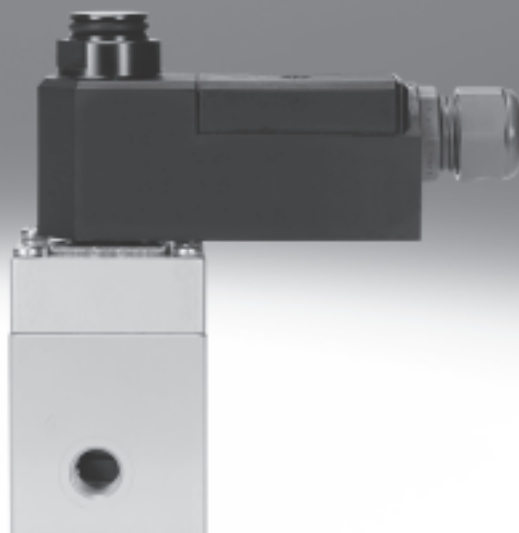


Valve series VOFC

FESTO



Solenoid valves VOFC

Key features

FESTO

General information

- The valves in the VOFC series are special 3/2-way and 5/2-way valves for process automation, for use within chemical and petrochemical systems, where they are frequently used as pilot valves for flaps and drives. Their sturdy design and high resistance to corrosion make these valves suitable for outdoor use under harsh ambient conditions.
- The Namur flange pattern makes the solenoid valves especially suitable for quarter-turn actuators. The integrated spring chamber ventilation protects quarter-turn actuators with spring return (single-acting cylinders and drives) against contaminated ambient air and weather influences such as rain.
- With German Technical Control Board (TÜV) report up to AK7/SIL-4.

Function, design

- 3/2-way or 5/2-way, single solenoid or double solenoid, depending on type.
- Piloted piston spool and piston poppet valves.

Sturdy

- The surface of the valve housing is treated with hard Ematal. This treatment involves converting the aluminium surface into a very hard aluminium oxide layer with titanium oxide intercalations and gives the valves very high resistance to wear and abrasion as well as first-class sliding qualities. This provides optimum protection against atmospheric and chemical influences.
- You can find information on the media resistance of the product at www.festo.com.

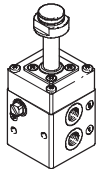
Flexible in function

- The valve is easily modified for internal or external pilot air using a screw.
- Depending on the required function, the pressure connection is established independently of the working pressure as a pressure or vacuum connection.

Economical

- One type, one part number for two functions.
- Internal and external pilot air function integrated in one valve.
- One valve, two connection options.
- Port pattern to Namur for direct mounting of a drive as well as G and NPT threaded connections.

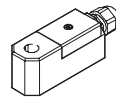
VOFC – Basic valves



- 3/2-way, 5/2-way valves
- Connections G1/4, NPT1/4, G1/2
- Namur port pattern, optional with P channel

→ 6

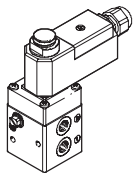
VACC-S13 – Solenoid coils



- AC and DC voltage 24V, 110V, 230V
- Type of explosion protection Ex emb II, Ex ia IIC

→ 28

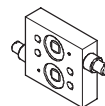
VOFC – Solenoid valves



- Combination of basic valve VOFC and S13 coil VACC
- 3/2-way, 5/2-way valves
- Type of explosion protection Ex emb II

→ 20

VOFC – Accessories



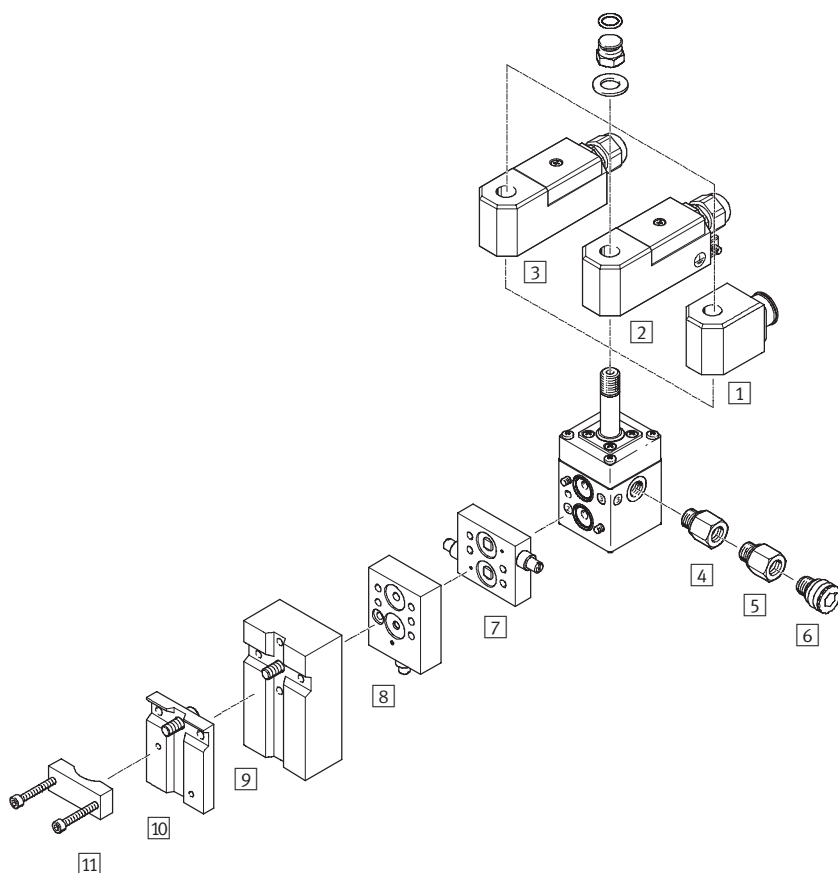
- Throttle plate
- Mounting plate
- Adapter with filter
- Hand lever

→ 33

Solenoid valves VOFC

Peripherals overview

FESTO



Mounting attachments and accessories		
	Brief description	→ Page/Internet
1	Solenoid coil VACC-S13	Standard magnet
2	Solenoid coil VACC-S13-me	Ex-me magnet
3	Solenoid coil VACC-S13-A	Ex-ia magnet
4	Adapter NPFV-AF-G14-N14-MF	Adapter from G $\frac{1}{4}$ to NPT $\frac{1}{4}$, with filter
5	Adapter NPFV-AF-G14-G14-MF	Adapter from G $\frac{1}{4}$ to G $\frac{1}{4}$, with filter
6	Exhaust protection VABD-D3-SN-G14	Exhaust protection to IP65. The spring chamber of drive 8 solenoid valve is protected against the ingress of aggressive ambient air and water by the one-way flow control system
7	Flow control plate VABF-S7-F1B1P2-F	Exhaust air flow control plate for Namur interface for installation between the solenoid valve and double-acting drives
8	Flow control plate VABF-S7-F1B5P1-F	Exhaust air flow control plate for Namur interface for installation between the solenoid valve and single-acting drives
9	Connection plate kit VABF-S7-S-G14	Mounting plate for attaching the valve to a Namur rib
10	Mounting plate VAME-S7-P	Mounting plate for attaching the valve to a Namur rib
11	Mounting bracket VAME-S7-Y	Alternative option (instead of screw) of attaching the valve to a Namur rib with the help of a mounting bracket

Solenoid valves VOFC

Type codes

FESTO

		VOFC	-	L	-	B52	-	M	-	Z	-	G12	-	1	-	A1
Type																
VOFC	Solenoid valve															
Type of directional control valve																
L	In-line valve															
Valve function																
B52	5/2-way valve, double solenoid															
M32C	3/2-way valve, normally closed															
M52	5/2-way valve, single solenoid															
Reset method for single solenoid valves																
M	Mechanical spring															
Pilot supply air																
	Internal															
Z	External															
C	Internal/external pilot air															
Pneumatic connection																
G12	G $\frac{1}{2}$															
G14	G $\frac{3}{4}$															
N12	$\frac{1}{2}$ NPT															
N14	$\frac{3}{4}$ NPT															
FG12	Namur G $\frac{1}{2}$															
FG14	Namur G $\frac{3}{4}$															
Nominal operating voltage																
	Without solenoid coil, not relevant															
1	24 V DC															
1U	24 V DC and AC															
2A	110 V AC/50-60 Hz															
2U	110 V DC and AC															
3A	230 V AC/50-60 Hz															
3U	230 V DC and AC															
Electrical connection																
A1	Port pattern type A, to EN 175 301															
K4	Cable connector M20															
F9	Armature tube for solenoid coil 13															
F10	Armature tube for solenoid coil 18															
K1	Cable															

Solenoid valves VOFC

Type codes

FESTO

		F	-	EX3	-	D
Protective circuit						
	None/standard					
F	Fuse					
FX	Fuse and freewheeling diode					
X	Freewheeling diode					
Approval EU, US						
	Approval defined upon introduction (standard)					
Ex3	II 2G					
Ex4	II 2GD					
Type of explosion protection						
	None					
D	Pressure-resistant casing					
E	Enhanced safety					
M	Moulded encapsulation					
ME	Moulded encapsulation, enhanced safety					
N	Non-sparking					
Q	Sand casing					
A	Intrinsically safe					

Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{4}$ and Namur

FESTO

Function

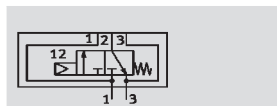
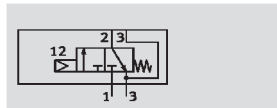
3/2-way valve

Temperature range

–25 ... +60 °C

Flow rate

600 l/min



General technical data					
		G1/4 basic valve, Namur	G1/4 Exi variant, for low ratings	G1/4 basic valve, Namur, P connection	G1/4 basic valve, for low ratings
Valve function		3/2-way closed, single solenoid			
Pneumatic connection	1	G1/4			Namur port pattern
	2	G1/4 and Namur port pattern			
	3	G1/4			
	4	G1/4 and Namur port pattern			
Design		Piloted piston poppet valve			
Width [mm]		51			
Mounting position		Any			
Duty cycle		100%			
Sealing principle		Soft			
Manual override		None			
Reset method		Mechanical spring			
Actuation type		Electrical			
Type of control		Piloted			
Pilot air supply		Internal			
Flow rate Kv pressurisation [m³/h]		0.5			
Flow rate Kv exhausting [m³/h]		0.65			
Direction of flow		Non-reversible			
Product weight [g]		600			550
Response time off [ms]		12			
Response time on [ms]		20			
Nominal size [mm]		6			
Standard nominal flow rate [l/min]		600			

Operating and environmental conditions		G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant, for low ratings	G $\frac{1}{4}$ basic valve, Namur, P connection	G $\frac{1}{4}$ basic valve, for low ratings
Operating medium		Compressed air			
Protection class		IP65			
Operating pressure range	[bar]	2 ... 8			
Temperature of medium	[°C]	–25 ... +60			
Ambient temperature	[°C]	–25 ... +60			
Safety integrity level	[SIL]	Up to SIL 4 Low Demand mode			
		Up to SIL 4 High Demand mode			
Corrosion resistance class CRC ¹⁾		4			

1) Corrosion resistance class 4 according 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.

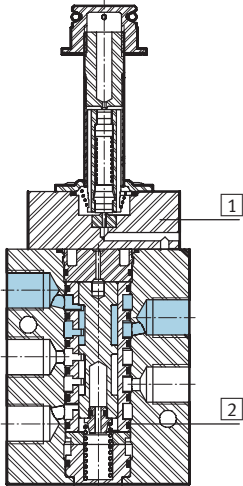
Basic valves VOFC



Technical data – 3/2-way valves, G $\frac{1}{4}$ and Namur

FESTO

Materials

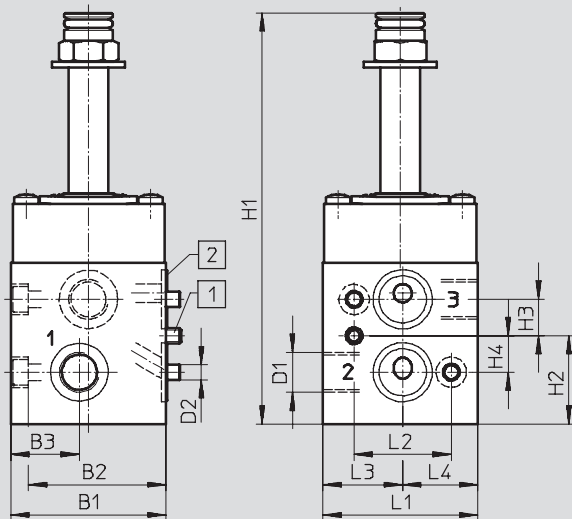
Sectional view



Solenoid valves	G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant, for low ratings	G $\frac{1}{4}$ basic valve, Namur, P connection 	G $\frac{1}{4}$ basic valve, for low ratings 
1 Housing	Hard Ematal-anodised aluminium			
2 Seals	Nitrile rubber			
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant			

Dimensions

Download CAD Data → www.festo.com/us/cad



- 1 Coding pin M5x10
2 O-ring 16x2

Type	B1	B2	B3	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4
VOFC-L-M32C-M-FG14-F9	51	45.3	22.5	G $\frac{1}{4}$	M5	135.3	29	12	12	51	32	26.3	24.7
VOFC-L-M32C-M-FG14-F9-A													

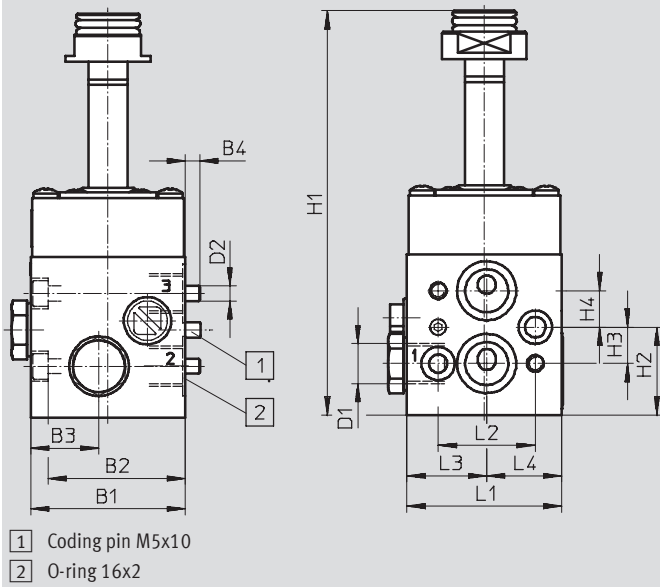
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{4}$ and Namur

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4
VOFC-L-M32C-M-FGP14-F9	51	45.3	22.5	4.7	Namur G $\frac{1}{4}$	M5	133.4	29	12	12	51	32	26.3	24.7
VOFC-L-M32C-M-FGP14-F9-A														

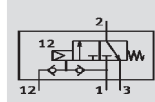
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{4}$

FESTO

Function

3/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
600 l/min



General technical data					
Type		G1/4 basic valve	G1/4 Exi variant	NPT basic valve	NPT Exi variant
Valve function		3/2-way closed, single solenoid			
Pneumatic connection	1	G1/4	G1/4	NPT1/4-18	NPT1/4-18
	2	G1/4	G1/4	–	–
	2	–	–	NPT1/4-18	NPT1/4-18
	3	G1/4	G1/4	NPT1/4-18	NPT1/4-18
	4	G1/4	G1/4	–	–
	4	–	–	NPT1/4-18	NPT1/4-18
Design		Piloted piston poppet valve			
Width [mm]		51			
Mounting position		Any			
Duty cycle		100%			
Sealing principle		Soft			
Manual override		None			
Reset method		Mechanical spring			
Actuation type		Electrical			
Type of control		Piloted			
Pilot air supply		Internal, external			
Flow rate for piston valve pressurisation [m³/h]		0.72 1.38			
Direction of flow		Non-reversible			
Product weight [g]		550			
Response time off [ms]		12			
Response time on [ms]		20			
Nominal size [mm]		6			
Standard nominal flow rate [l/min]		900			

Operating and environmental conditions					
Type		G¼ basic valve	G¼ Exi variant	NPT basic valve	NPT Exi variant
Operating medium		Compressed air			
Protection class		IP65			
Operating pressure range	[bar]	2 ... 8			
External operating pressure range	[bar]	0 ... 8			
Temperature of medium	[°C]	–25 ... +60			
Ambient temperature	[°C]	–25 ... +60			
Safety integrity level	[SIL]	Up to SIL 4 Low Demand mode			
		Up to SIL 4 High Demand mode			
Corrosion resistance class CRC ¹⁾		4			

1) Corrosion resistance class 4 according 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.

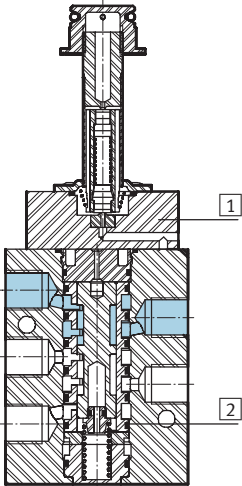
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{4}$

FESTO

Materials

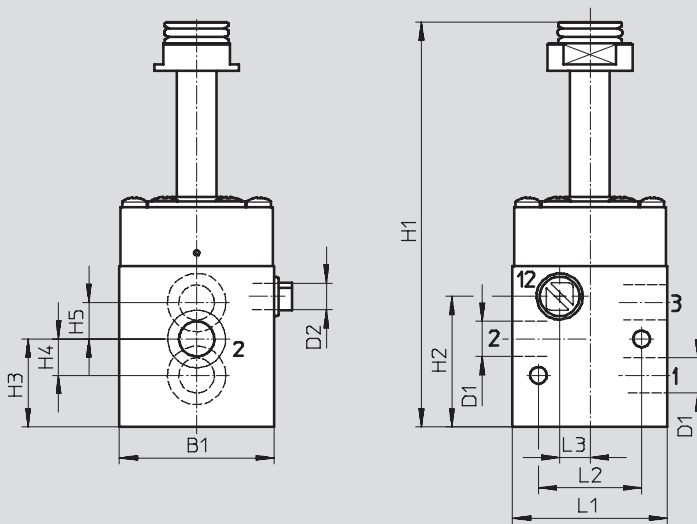
Sectional view



Solenoid valves	G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant	NPT basic valve	NPT Exi variant
1 Housing	Hard Ematal-anodised aluminium			
2 Seals	Nitrile rubber			
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant			

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3
VOFC-L-M32C-MC-G14-F9	51	G $\frac{1}{4}$	G $\frac{1}{8}$	133	43	29	12	12	51	34	10
VOFC-L-M32C-MC-G14-F9-A											
VOFC-L-M32C-MC-N14-F9											
VOFC-L-M32C-MC-N14-F9-A											

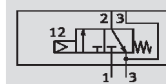
Basic valves VOFC

FESTO

Technical data – 3/2-way valves, G $\frac{1}{2}$ and Namur

Function

3/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
3,000 l/min



General technical data		G $\frac{1}{2}$ basic valve	G $\frac{1}{2}$ Exi variant
Valve function		3/2-way closed, single solenoid	
Pneumatic connection	1	G $\frac{1}{2}$	
	2	G $\frac{1}{2}$ and Namur port pattern	
	3	G $\frac{1}{2}$	
	4	G $\frac{1}{2}$ and Namur port pattern	
Design		Piloted piston poppet valve	
Width	[mm]	51	
Mounting position		Any	
Duty cycle		100%	
Sealing principle		Soft	
Manual override		None	
Reset method		Mechanical spring	
Actuation type		Electrical	
Type of control		Piloted	
Pilot air supply		Internal	
Flow rate for piston valve pressurisation	[m ³ /h]	3.8	
Direction of flow		Non-reversible	
Product weight	[g]	880	
Response time off	[ms]	14	
Response time on	[ms]	25	
Nominal size	[mm]	12	
Standard nominal flow rate	[l/min]	3,000	

Operating and environmental conditions		G $\frac{1}{2}$ basic valve	G $\frac{1}{2}$ Exi variant
Operating medium		Compressed air	
Protection class		IP65	
Operating pressure range	[bar]	2 ... 8	
Temperature of medium	[°C]	–25 ... +60	
Ambient temperature	[°C]	–25 ... +60	
Corrosion resistance class CRC ¹⁾		4	

1) Corrosion resistance class 4 according 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.

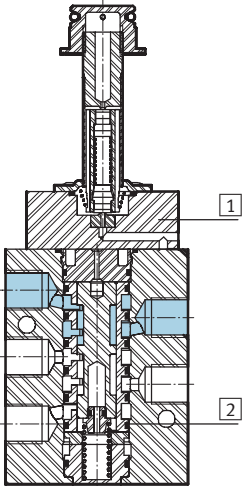
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{2}$ and Namur

FESTO

Materials

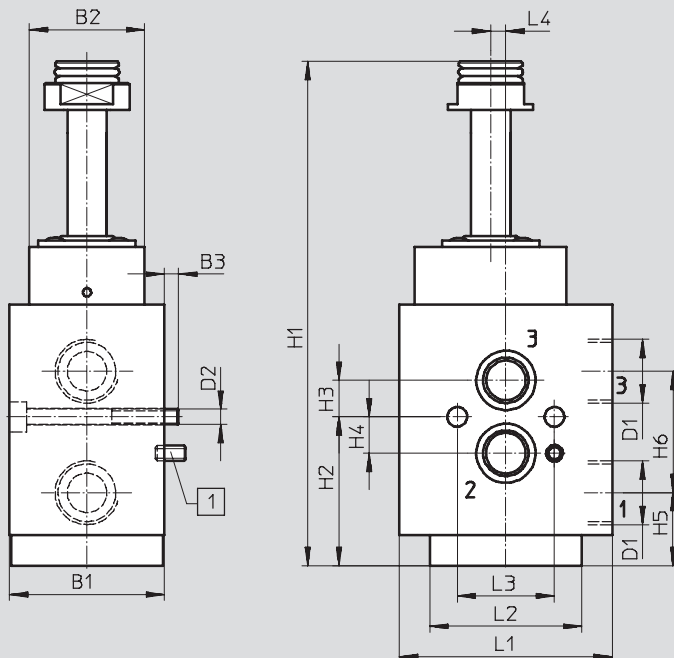
Sectional view



Solenoid valves	G $\frac{1}{2}$ basic valve	G $\frac{1}{2}$ Exi variant
1 Housing	Hard Ematal-anodised aluminium	
2 Seals	Nitrile rubber	
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Dimensions

Download CAD Data → www.festo.com/us/cad



1 Coding pin M5x10

Type	B1	B2	B3	D1	D2	H1	H2	H3	H4	H5	H6	L1	L2	L3	L4
VOFC-L-M32C-M-FG12-F9	51	38	4.7	G $\frac{1}{2}$	M5	166	49	12	12	24	40	70	50	32	5
VOFC-L-M32C-M-FG12-F9-A															

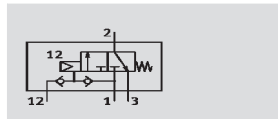
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{2}$

FESTO

Function

3/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
3,000 l/min



General technical data		G $\frac{1}{2}$ basic valve	G $\frac{1}{2}$ Exi variant
Valve function		3/2-way closed, single solenoid	
Pneumatic connection	1	G $\frac{1}{2}$	
	2	G $\frac{1}{2}$	
	3	G $\frac{1}{2}$	
	4	G $\frac{1}{2}$	
Design		Piloted piston poppet valve	
Width	[mm]	51	
Mounting position		Any	
Duty cycle		100%	
Sealing principle		Soft	
Manual override		None	
Reset method		Mechanical spring	
Actuation type		Electrical	
Type of control		Piloted	
Pilot air supply		Internal, external	
Flow rate for piston valve pressurisation	[m 3 /h]	3.8	
Direction of flow		Non-reversible	
Product weight	[g]	880	
Response time off	[ms]	14	
Response time on	[ms]	25	
Nominal size	[mm]	12	
Standard nominal flow rate	[l/min]	3,000	

Operating and environmental conditions		Basic valve	Exi variant
Operating medium		Compressed air	
Protection class		IP65	
Operating pressure range	[bar]	2 ... 8	
External operating pressure range	[bar]	0 ... 8	
Temperature of medium	[°C]	–25 ... +60	
Ambient temperature	[°C]	–25 ... +60	
Corrosion resistance class CRC ¹⁾		4	

1) Corrosion resistance class 4 according 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.

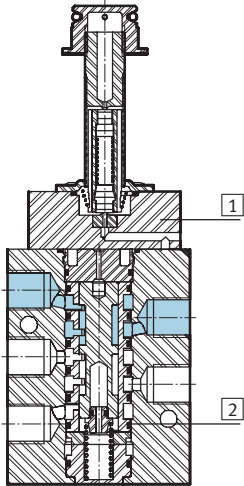
Basic valves VOFC

Technical data – 3/2-way valves, G $\frac{1}{2}$

FESTO

Materials

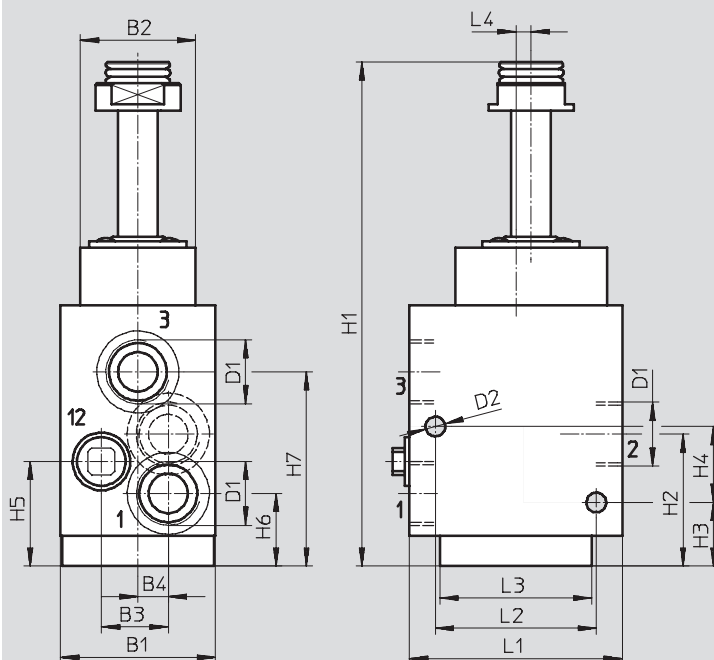
Sectional view



Solenoid valves	G $\frac{1}{2}$ basic valve	G $\frac{1}{2}$ Exi variant
1 Housing	Hard Ematal-anodised aluminium	
2 Seals	Nitrile rubber	
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4
VOFC-L-M32C-MC-G12-F9	51	37	22	10	G $\frac{1}{2}$	6.5	166	43.5	21	25	34.5	70	53	50	5
VOFC-L-M32C-MC-G12-F9-A															

Basic valves VOFC

FESTO

Technical data – 5/2-way valves, G $\frac{1}{4}$ and Namur

Function

5/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
750 l/min



General technical data		G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
Valve function		5/2-way, single solenoid	
Pneumatic connection	1	G $\frac{1}{4}$	
	2	G $\frac{1}{4}$ and Namur port pattern	
	3	G $\frac{1}{4}$	
	4	G $\frac{1}{4}$ and Namur port pattern	
Design		Hard piston spool valve	
Mounting position		Any	
Width	[mm]	40	
Duty cycle		100%	
Sealing principle		Hard	
Manual override		None	
Reset method		Mechanical spring	
Actuation type		Electrical	
Type of control		Piloted	
Pilot air supply		Internal	
Flow rate for piston valve pressurisation	[m ³ /h]	0.65	
Direction of flow		Non-reversible	
Product weight	[g]	620	
Response time off	[ms]	40	
Response time on	[ms]	24	
Nominal size	[mm]	6	
Standard nominal flow rate	[l/min]	750	

Operating and environmental conditions		G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
Operating medium		Compressed air	
Protection class		IP65	
Operating pressure range	[bar]	2 ... 8	
Temperature of medium	[°C]	–25 ... +60	
Ambient temperature	[°C]	–25 ... +60	
Corrosion resistance class CRC ¹⁾		4	

1) Corrosion resistance class 4 according 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.

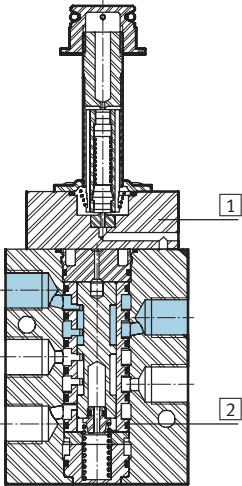
Basic valves VOFC

Technical data – 5/2-way valves, G $\frac{1}{4}$ and Namur

FESTO

Materials

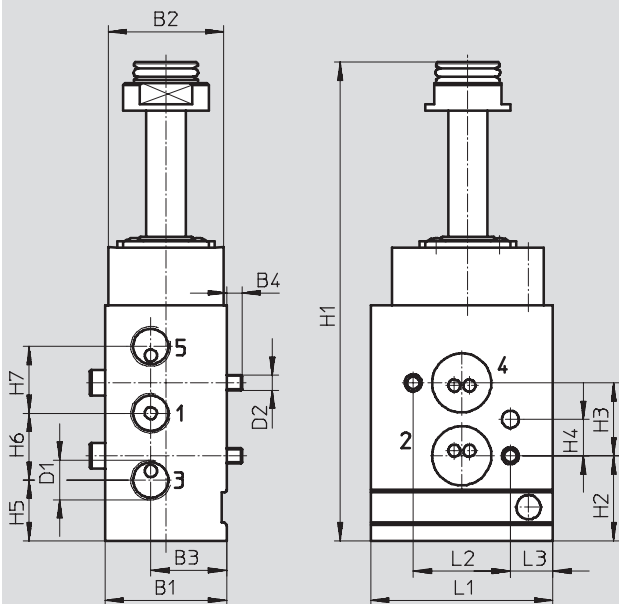
Sectional view



Solenoid valves	G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
1 Housing	Hard Ematal-anodised aluminium	
2 Seals	Nitrile rubber	
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	H5	H6	H7	L1	L2	L3
VOFC-L-M52-M-FG14-F9	40	38	25	5	G $\frac{1}{4}$	M5	158	28	24	12	20	22	22	60	32	14
VOFC-L-M52-M-FG14-F9-A																

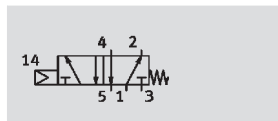
Basic valves VOFC

Technical data – 5/2-way valves, G $\frac{1}{4}$

FESTO

Function

5/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
850 l/min



General technical data		G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
Valve function		5/2-way single solenoid	
Pneumatic connection	1	G $\frac{1}{4}$	
	2	G $\frac{1}{4}$	
	3	G $\frac{1}{4}$	
	4	G $\frac{1}{4}$	
Design		Hard piston spool valve	
Mounting position		Any	
Width	[mm]	40	
Duty cycle		100%	
Sealing principle		Hard	
Manual override		None	
Reset method		Mechanical spring	
Actuation type		Electrical	
Type of control		Piloted	
Pilot air supply		Internal	
Flow rate for piston valve pressurisation	[m ³ /h]	0.65	
Direction of flow		Non-reversible	
Product weight	[g]	620	
Response time off	[ms]	40	
Response time on	[ms]	24	
Nominal size	[mm]	6	
Standard nominal flow rate	[l/min]	850	

Operating and environmental conditions		G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
Operating medium		Compressed air	
Protection class		IP65	
Operating pressure range	[bar]	2 ... 8	
Temperature of medium	[°C]	–25 ... +60	
Ambient temperature	[°C]	–25 ... +60	
Corrosion resistance class CRC ¹⁾		4	

1) Corrosion resistance class 4 according 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.

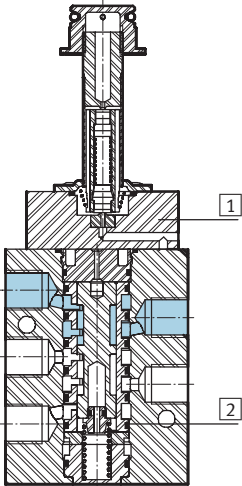
Basic valves VOFC

Technical data – 5/2-way valves, G $\frac{1}{4}$

FESTO

Materials

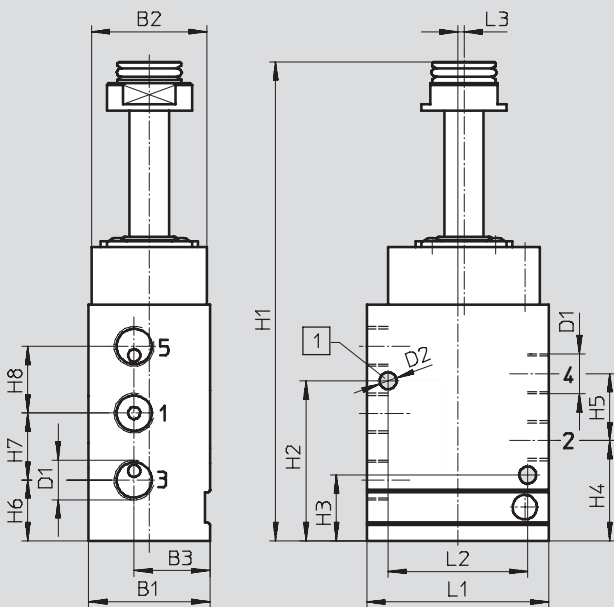
Sectional view



Solenoid valves	G $\frac{1}{4}$ basic valve	G $\frac{1}{4}$ Exi variant
1 Housing	Hard Ematal-anodised aluminium	
2 Seals	Nitrile rubber	
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	

Dimensions

Download CAD Data → www.festo.com/us/cad



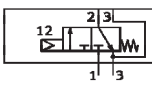
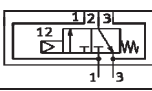


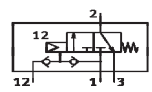
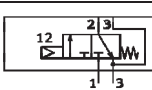
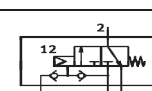
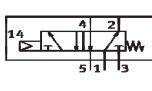
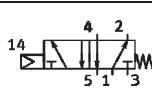
1 Coding pin M5x10

Type	B1	B2	B3	D1	D2	H1	H2	H3	H4	H5	H6	H7	H8	L1	L2
VOFC-L-M52M-G14-F9	40	38	25	G $\frac{1}{4}$	M5	158	52.6	21.6	33	22	20	22	22	60	46
VOFC-L-M52M-G14-F9-A															

Basic valves VOFC

Technical data

FESTO

Ordering data					
Circuit symbol	Function	Pneumatic connection	Pilot air supply	Part No.	Type
In-line valve					
 	3/2-way closed, single solenoid	G $\frac{1}{4}$ and Namur	Internal	562 857	VOFC-L-M32C-M-FG14-F9
		G $\frac{1}{4}$ and Namur, P connection		562 858	VOFC-L-M32C-M-FG14-F9-A
		G $\frac{1}{4}$ and Namur, P connection		570 787	VOFC-L-M32C-M-FGP14-F9 
		G $\frac{1}{4}$ and Namur, P connection		570 788	VOFC-L-M32C-M-FGP14-F9-A 
	3/2-way closed, single solenoid	G $\frac{1}{4}$	Internal, external	562 859	VOFC-L-M32C-MC-G14-F9
			Internal, external	562 860	VOFC-L-M32C-MC-G14-F9-A
			Internal, external	562 861	VOFC-L-M32C-MC-N14-F9
			Internal, external	562 862	VOFC-L-M32C-Mc-N14-F9-A
	3/2-way closed, single solenoid	G $\frac{1}{2}$ and Namur	Internal	562 863	VOFC-L-M32C-M-FG12-F9
				562 864	VOFC-L-M32C-M-FG12-F9-A
	3/2-way closed, single solenoid	G $\frac{1}{2}$	Internal, external	562 865	VOFC-L-M32C-MC-G12-F9
				562 866	VOFC-L-M32C-MC-G12-F9-A
	5/2-way, single solenoid	G $\frac{1}{4}$ and Namur	Internal	562 867	VOFC-L-M52-M-FG14-F9
				562 868	VOFC-L-M52-M-FG14-F9-A
	5/2-way, single solenoid	G $\frac{1}{4}$	Internal	562 871	VOFC-L-M52-M-G14-F9
				562 872	VOFC-L-M52-M-G14-F9-A

Solenoid valves VOFC

FESTO

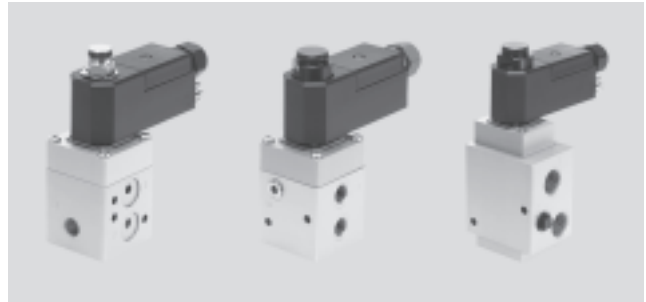
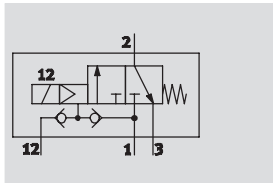
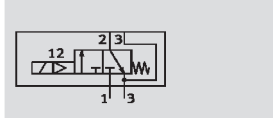
Technical data – 3/2-way valve with ignition protection type Ex-me

Function
3/2-way valve

Temperature range
–25 ... +60 °C

Flow rate
600 l/min

Voltage
14 ... 32 V DC



General technical data					
		G¼ and Namur	G¼	NPT¼	G½
Valve function		3/2-way closed, single solenoid			
Pneumatic connection	1	G¼		NPT¼-18	G½
	2	G¼		–	G½
	2	Namur port pattern	–	NPT¼-18	–
	3	G¼		NPT¼-18	G½
	4	Namur port pattern	G¼	NPT¼-18	G½
Width		51 mm			
Design		Piloted piston poppet valve			
Mounting position		Any			
Duty cycle		100%			
Sealing principle		Soft			
Manual override		None			
Reset method		Mechanical spring			
Actuation type		Electrical			
Type of control		Piloted			
Pilot air supply		Internal	Internal, external	Internal, external	Internal, external
Flow rate for piston valve pressurisation	[m³/h]	0.5	0.72	0.72	3.8
		0.65	1.38	1.38	3.8
Direction of flow		Non-reversible			
Electrical connection		Terminal box, cable entry thread M20x1.5			
Reset method		Mechanical spring			
Product weight	[g]	930	880	880	1,210
Response time off	[ms]	12			
Response time on	[ms]	20			
Nominal size	[mm]	6			
Standard nominal flow rate	[l/min]	600	900	900	3,000

Solenoid valves VOFC

FESTO

Technical data – 3/2-way valve with ignition protection type Ex-me

Electrical data		G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$	NPT $\frac{1}{4}$	G $\frac{1}{2}$
Permissible voltage fluctuations	[%]	-15 ... +10			
Max. input power	[W]	-			
Max. input voltage	[V]	-			
Max. input current	[A]	-			
Required current consumption	[mA]	-			
Coil characteristics	DC voltage 24 V	[W]	1.8		
	AC voltage 24 V	[VA]	1.8		

Operating and environmental conditions					
		G¼ and Namur	G¼	NPT¼	G½
Operating medium		Compressed air			
Protection class		IP65			
Operating pressure range	[bar]	2 ... 8			
External operating pressure range	[bar]	–	0 ... 8		
Temperature of medium	[°C]	–25 ... 60			
ATEX category for gas		II 2G			
ATEX category for dust		II 2D			
Explosion ignition protection type for gas		Ex emb II T6, T5			
Explosion ignition protection type for dust		Ex tD A21 IP65 T80°C, T95°C			
Explosion-proof temperature rating	T5:	-20°C ≤ Ta ≤ +60°C			
	T6:	-20°C ≤ Ta ≤ +50°C			
	T80°C:	-20°C ≤ Ta ≤ +50°C			
	T95°C:	-20°C ≤ Ta ≤ +60°C			
CE mark (see declaration of conformity)		To EU Explosion Protection Directive (ATEX)			
Safety integrity level	[SIL]	Up to SIL 4 Low Demand mode			–
		Up to SIL 4 High Demand mode			–
Corrosion resistance class CRC ¹⁾		4			

1) Corrosion resistance class 4 according 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.

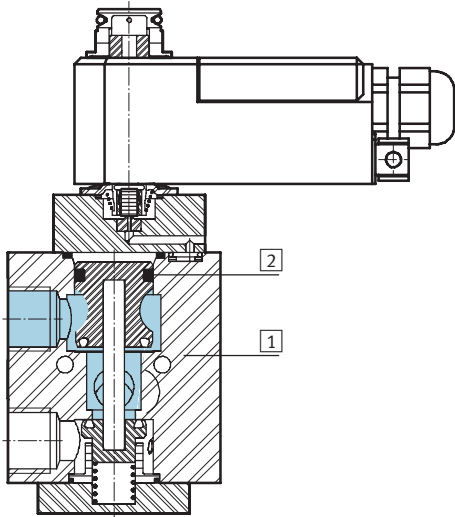
Solenoid valves VOFC

Technical data – 3/2-way valve with ignition protection type Ex-me

FESTO

Materials

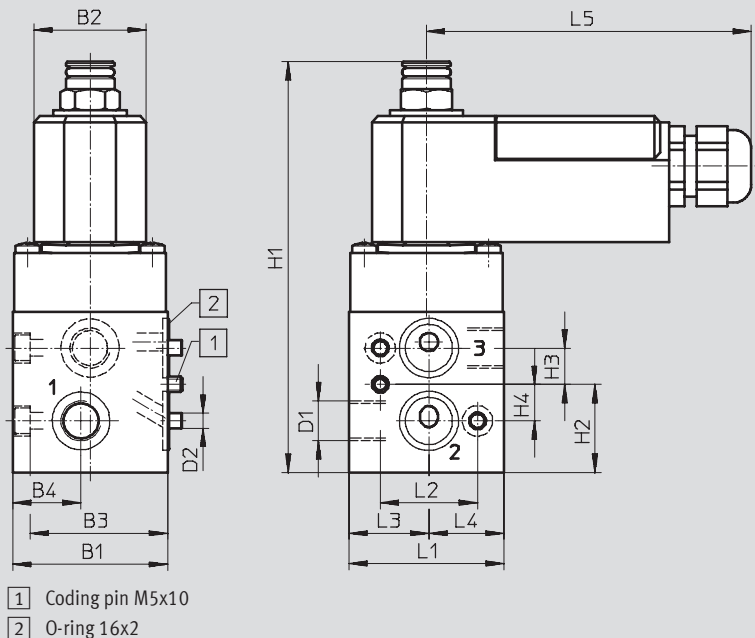
Sectional view



Solenoid valves	G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$	NPT $\frac{1}{4}$	G $\frac{1}{2}$
1 Housing	Hard Ematal-anodised aluminium			
2 Seals	Nitrile rubber			
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant			
– Certificate issuing authority	PTB 08 ATEX 2042 X			

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5
VOFC-L-M32C-M-FG14-1UK4-Ex4me	51	37	45.3	22.5	G $\frac{1}{4}$	M5	135.3	29	12	12	51	32	26.3	24.7	107

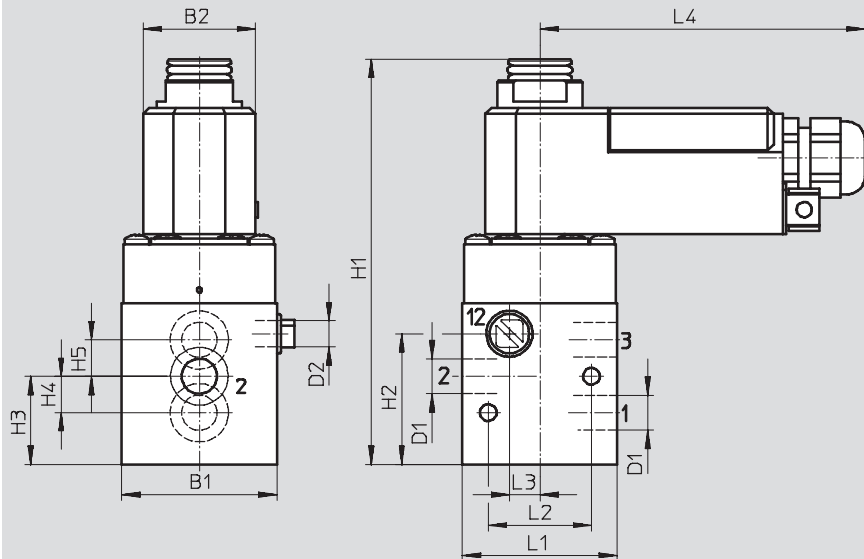
Solenoid valves VOFC

Technical data – 3/2-way valve with ignition protection type Ex-me

FESTO

Dimensions

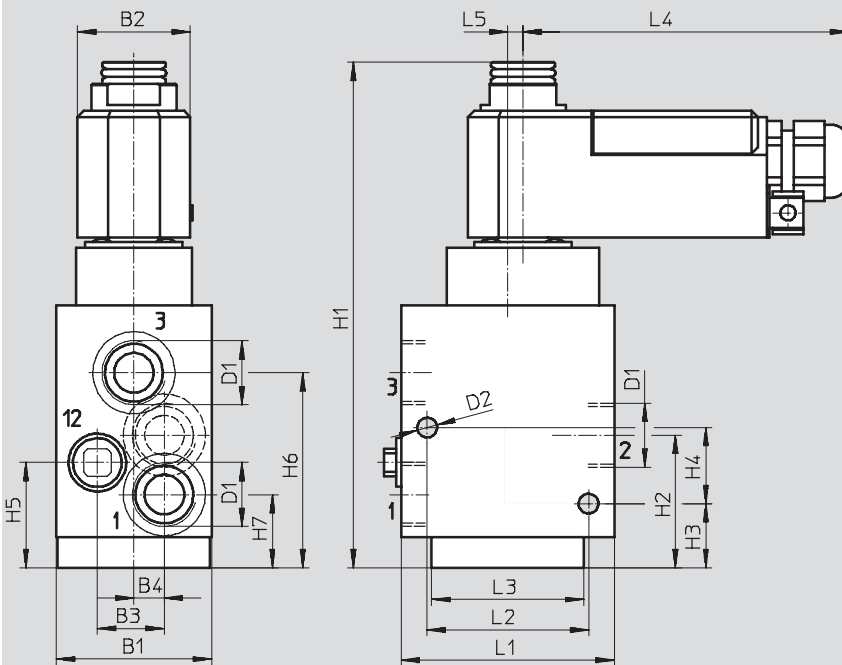
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Type	B1	B2	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4
VOFC-L-M32C-MC-G14-1UK4-Ex4me	51	37	G $\frac{1}{4}$	G $\frac{1}{8}$	133	43	29	12	12	51	34	10	107
VOFC-L-M32C-MC-N14-1UK													

Dimensions

Download CAD Data → www.festo.com/us/cad



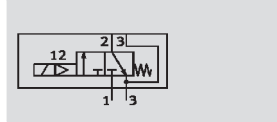
Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4	L5
VOFC-L-M32C-MC-G12-1UK4-Ex4me	51	37	22	10	G $\frac{1}{2}$	6.5	166	43.5	21	25	34.5	70	53	50	107	5

Solenoid valves VOFC

FESTO

Technical data – 3/2-way valve with ignition protection type Ex-ia

Function
3/2-way valve



Temperature range
–25 ... +60 °C

Flow rate
600 ... 900 l/min

Voltage
14 ... 32 V DC



General technical data		G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$
Valve function		3/2-way closed, single solenoid	
Pneumatic connection	1	G $\frac{1}{4}$	
	2	G $\frac{1}{4}$	
	2	Namur port pattern	–
	3	G $\frac{1}{4}$	
Width	[mm]	51	
Design		Piloted piston poppet valve	
Mounting position		Any	
Duty cycle		100%	
Sealing principle		Soft	
Manual override		None	
Reset method		Mechanical spring	
Actuation type		Electrical	
Type of control		Piloted	
Pilot air supply		Internal	Internal, external
Flow rate for piston valve pressurisation	[m ³ /h]	0.5	0.72
		0.65	1.38
Direction of flow		Non-reversible	
Electrical connection		Terminal box, cable entry thread M20x1.5	
Reset method		Mechanical spring	
Product weight	[g]	930	880
Response time off	[ms]	12	
Response time on	[ms]	20	
Nominal size	[mm]	6	
Standard nominal flow rate	[l/min]	600	900

Electrical data		G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$
Permissible voltage fluctuations	[%]	–15 ... +10	–
Max. input power	[W]	1.2	
Max. input voltage	[V]	32	
Max. input current	[A]	0.2	
Required current consumption	[mA]	16	
Coil characteristics	DC voltage 24 V	[V]	14 ... 32

Solenoid valves VOFC

FESTO

Technical data – 3/2-way valve with ignition protection type Ex-ia

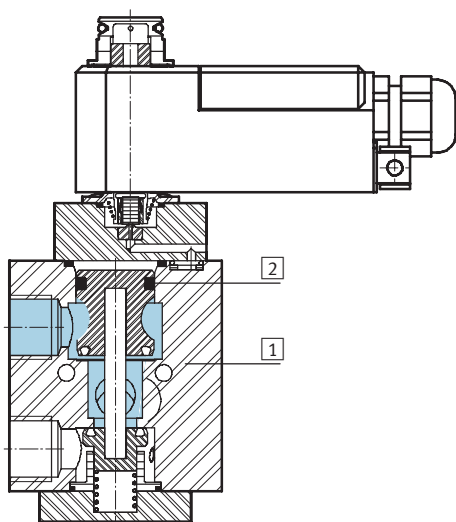
Operating and environmental conditions		
	G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$
Operating medium	Compressed air	
Protection class	IP65	
Operating pressure range	[bar]	2 ... 8
External operating pressure range	[bar]	– 0 ... 8
Temperature of medium	[°C]	–25 ... 60
ATEX category for gas	II 2G	
Explosion ignition protection type for gas	Ex ia IIC T6, T5	
Explosion-proof temperature rating	T5:	–30°C ≤ Ta ≤ +65°C
	T6:	–30°C ≤ Ta ≤ +50°C
	T80°C:	–20°C ≤ Ta ≤ +50°C
	T95°C:	–20°C ≤ Ta ≤ +60°C
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)	
Safety integrity level	[SIL]	Up to SIL 4 Low Demand mode
		Up to SIL 4 High Demand mode
Corrosion resistance class CRC ¹⁾	4	

1) Corrosion resistance class 4 according 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.

Materials

Sectional view



Solenoid valves	G $\frac{1}{4}$ and Namur	G $\frac{1}{4}$
1 Housing	Hard Ematal-anodised aluminium	
2 Seals	Nitrile rubber	
– Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	
– Certificate issuing authority	PTB 08 ATEX 2038	

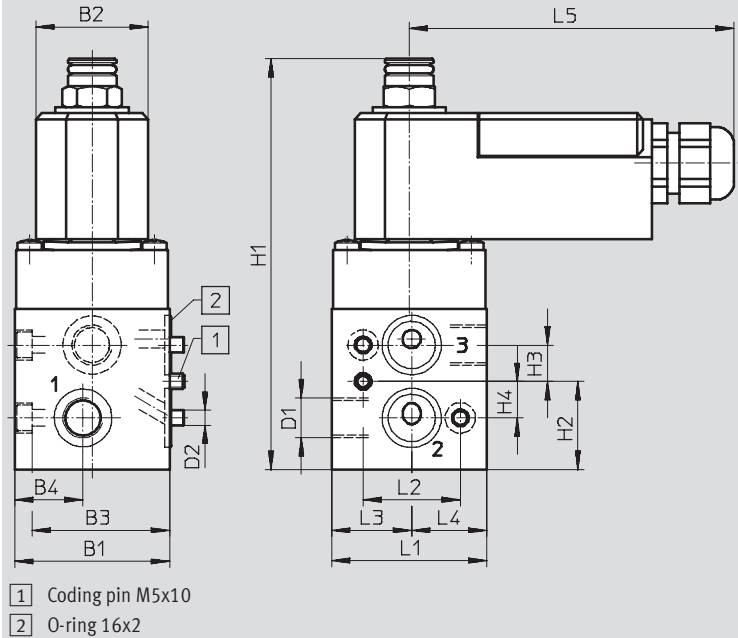
Solenoid valves VOFC

Technical data – 3/2-way valve with ignition protection type Ex-ia

FESTO

Dimensions

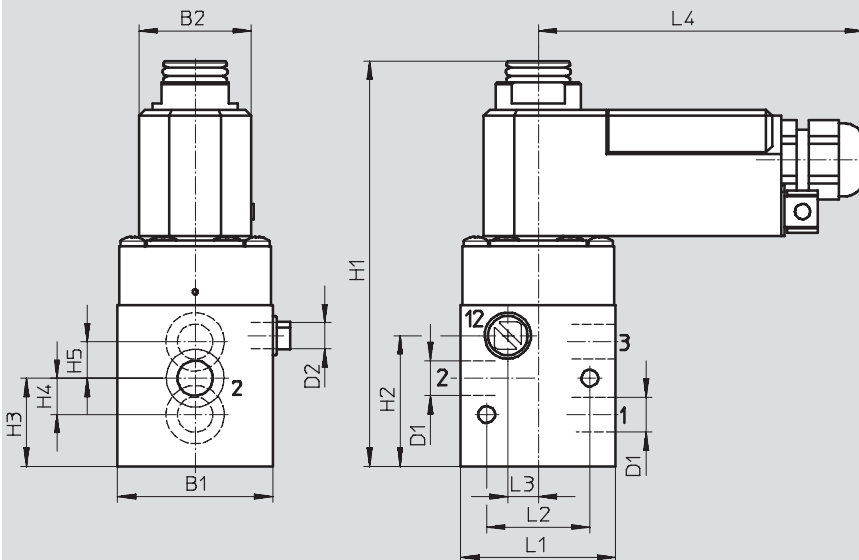
Download CAD Data → www.festo.com/us/cad



Type	B1	B2	B3	B4	D1	D2	H1	H2	H3	H4	L1	L2	L3	L4	L5
VOFC-L-M32C-M-FG14-1K4-EX3A	51	37	45.3	22.5	G $\frac{1}{4}$	M5	135.3	29	12	12	51	32	26.3	24.7	107

Dimensions

Download CAD Data → www.festo.com/us/cad

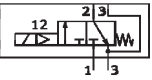
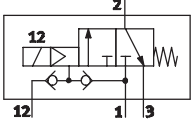


Type	B1	B2	D1	D2	H1	H2	H3	H4	H5	L1	L2	L3	L4
VOFC-L-M32C-MC-G14-1K4-EX3A	51	37	G $\frac{1}{4}$	G $\frac{1}{8}$	133	43	29	12	12	51	34	10	107

Solenoid valves VOFC

FESTO

Technical data – 3/2-way valve with ignition protection type Ex-ia

Ordering data						
Circuit symbol	Function	Size	Explosion ignition protection type for gas	Pilot air supply	Part No.	Type
	3/2-way closed, single solenoid	G $\frac{1}{4}$ and Namur	Ex emb II T6, T5	Internal	562 875	VOFC-L-M32C-M-FG14-1UK4-Ex4me
		G $\frac{1}{4}$ and Namur	Ex ia IIC T6, T5		562 876	VOFC-L-M32C-M-FG14-1K4-Ex3A
	3/2-way closed, single solenoid	G $\frac{1}{4}$	Ex emb II T6, T5	Internal, external	562 877	VOFC-L-M32C-MC-G14-1UK4-Ex4me
		G $\frac{1}{4}$	Ex ia IIC T6, T5	Internal, external	562 878	VOFC-L-M32C-MC-G14-1K4-Ex3A
		NPT1/4	Ex emb II T6, T5	Internal	562 879	VOFC-L-M32C-M-N14-1UK4-Ex4me
		G $\frac{1}{2}$	Ex emb II T6, T5		562 880	VOFC-L-M32C-MC-G12-1UK4-Ex4me

Solenoid coils VACC-S13

Technical data

FESTO

Voltage

24 V AC

Temperature range

-20 ... +60 °C



General technical data						
Type			VACC-S13-A1-1	VACC-S13-A1-1U	VACC-S13-A1-2U	VACC-S13-A1-3U
Actuation type			Electrical			
Mounting position			Any			
Duty cycle [%]			100			
Electrical connection			Plug design to EN 175301-803, type A			
Manual override			None			
Switching position display			None			
Product weight [g]			210			
Note on materials			Contains PWIS (paint-wetting impairment substances), RoHS-compliant			
Information on solenoid coil materials			Polyamide, polyurethane			
Coil characteristics	DC voltage 24 V	[W]	1.8	1.8	–	–
	AC voltage 24 V	[VA]	–	3	–	–
	DC voltage 110 V	[W]	–	–	1.8	–
	AC voltage 110 V	[VA]	–	–	3	–
	DC voltage 230 V	[W]	–	–	–	1.8
	AC voltage 230 V	[VA]	–	–	–	3

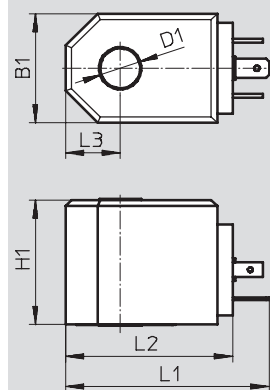
Operating and environmental conditions		
Protection class		IP65
Permissible voltage fluctuations		–15 ... +10
Ambient temperature		–20 ... +60
Corrosion resistance class CRC ¹⁾		4

1) Corrosion resistance class 4 according 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.

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	D1	H1	L1	L2	L3
VACC-S13-A1-1 ...	36	13.1	41	67	55	18

Solenoid coils VACC-S13

Technical data – Ignition protection type Ex-me

Voltage

24 V DC/AC

Temperature range

–20 ... +60 °C



General technical data						
Type			VACC-S13-K4-1U-Ex 4me	VACC-S13-K4-2U-Ex 4me	VACC-S13-K4-3U-Ex 4me	VACC-S13-K4-1UF-Ex4me
Actuation type			Electrical			
Mounting position			Any			
Duty cycle [%]			100			
Electrical connection			Terminal box, cable entry thread M20x1.5			
Manual override			None			
Switching position display			None			
Product weight [g]			330			
Note on materials			Contains PWIS (paint-wetting impairment substances), RoHS-compliant			
Information on solenoid coil materials			Polyamide, polyurethane			
Coil characteristics	DC voltage 24 V	[W]	1.8	–	–	1.8
	AC voltage 24 V	[VA]	1.8	–	–	1.8
	DC voltage 110 V	[W]	–	1.8	–	–
	AC voltage 110 V	[VA]	–	3	–	–
	DC voltage 230 V	[W]	–	–	1.8	–
	AC voltage 230 V	[VA]	–	–	3	–

Operating and environmental conditions	
Protection class	IP65
Permissible voltage fluctuations	–15 ... +10
ATEX category for gas	II 2G
Explosion ignition protection type for gas	Ex emb II T6, T5
ATEX category for dust	II 2D
Explosion ignition protection type for dust	Ex tD A21 IP65 T80°, T95°C
Explosion-proof temperature rating	T5: –20°C ≤ Ta ≤ +60°C
	T6: –20°C ≤ Ta ≤ +50°C
	T80°C: –20°C ≤ Ta ≤ +50°C
	T95°C: –20°C ≤ Ta ≤ +60°C
Certificate issuing authority	PTB 08 ATEX 2042 X
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)
Ambient temperature	–20 ... +60
Corrosion resistance class CRC ¹⁾	4

1) Corrosion resistance class 4 according 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.

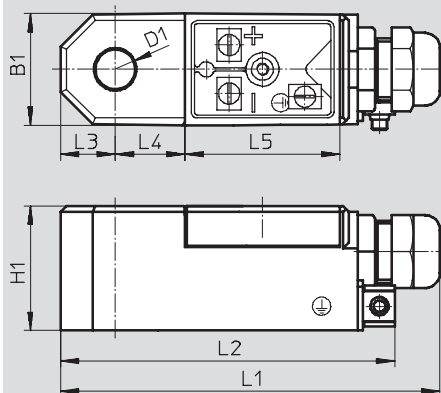
Solenoid coils VACC-S13

Technical data – Ignition protection type Ex-me

FESTO

Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	D1	H1	L1	L2	L3	L4	L5
VACC-S13-K4-...-Ex4me	37	13.1	41	125	98	18	23	51

Solenoid coils VACC-S13

Technical data – Ignition protection type Ex-ia

FESTO

Voltage

24 V DC/AC

Temperature range

–30 ... +60 °C



General technical data		
Type	VACC-S13-K4-Ex3A	
Actuation type	Electrical	
Mounting position	Any	
Duty cycle	[%]	100
Electrical connection	Terminal box, cable entry thread M20x1.5	
Manual override	None	
Switching position display	None	
Product weight	[g]	330
Note on materials	Contains PWIS (paint-wetting impairment substances), RoHS-compliant	
Information on solenoid coil materials	Polyamide, polyurethane	
Coil characteristics	[V]	14 ... 32
Max. input power	[W]	1.2
Max. input voltage	[V]	32
Max. input current	[A]	0.2
Required current consumption	[mA]	16

Operating and environmental conditions		
Protection class	IP65	
ATEX category for gas	II 2G	
Explosion ignition protection type for gas	Ex ia IIC T6, T5	
Explosion-proof temperature rating	T5: –30°C ≤ Ta ≤ +65°C	
	T6: –30°C ≤ Ta ≤ +50°C	
Certificate issuing authority	PTB 08 ATEX 2038	
CE mark (see declaration of conformity)	To EU Explosion Protection Directive (ATEX)	
Ambient temperature	[°C]	–30 ... +60
Corrosion resistance class CRC ¹⁾	4	

1) Corrosion resistance class 4 according 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.

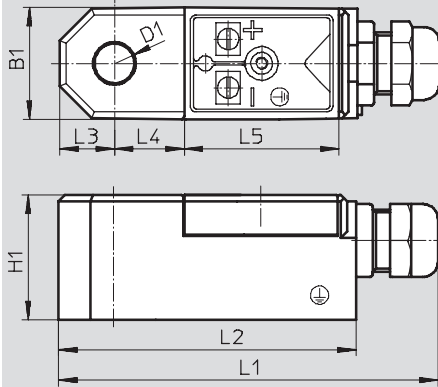
Solenoid coils VACC-S13

Technical data – Ignition protection type Ex-ia

FESTO





Dimensions

Download CAD Data → www.festo.com/us/cad



Type	B1	D1	H1	L1	L2	L3	L4	L5
VACC-S13-K4-...-Ex3A	37	13.1	41	125	98	18	23	51

Ordering data

	Part No.	Type
Standard		
	562 889	VACC-S13-A1-1
	562 890	VACC-S13-A1-1U
	562 891	VACC-S13-A1-2U
	562 892	VACC-S13-A1-3U
Ex-me coil		
	562 893	VACC-S13-K4-1U-Ex4me
	562 894	VACC-S13-K4-2U-Ex4me
	562 895	VACC-S13-K4-3U-Ex4me
	570 784	VACC-S13-K4-1UF-Ex4me 
Ex-ia coil		
	562 896	VACC-S13-K4- -Ex3A

Solenoid valves

Accessories

FESTO

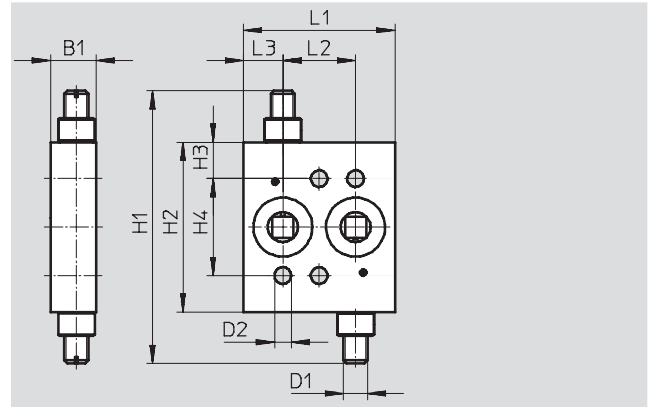
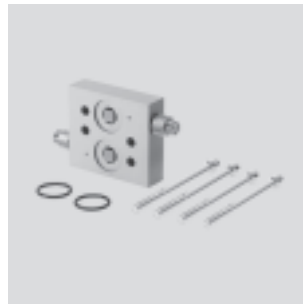
Flow control plate

Material:

Manifold rail:

Wrought aluminium alloy

Contains paint-wetting impairment substances, RoHS-compliant



Dimensions and ordering data													Part No.	Type
Type [mm]	B1	D1	D2	H1	H2	H3	H4	L1	L2	L3	CRC ¹⁾			
	15	G ¹ / ₄	5.5	73	56	12	32	50	24	13	3		563 401	VABF-S7-F1B5P1-F

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

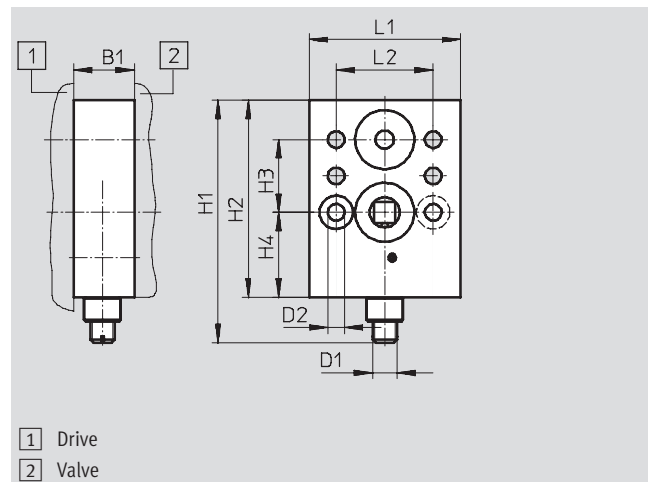
Flow control plate

Material:

Manifold rail:

Wrought aluminium alloy

Contains paint-wetting impairment substances, RoHS-compliant



Dimensions and ordering data													Part No.	Type
Type [mm]	B1	D1	D2	H1	H2	H3	H4	L1	L2	L3	CRC ¹⁾			
	20	G ¹ / ₄	5.5	80	65	24	28	50	32	3			563 395	VABF-S7-F1B1P2-F

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

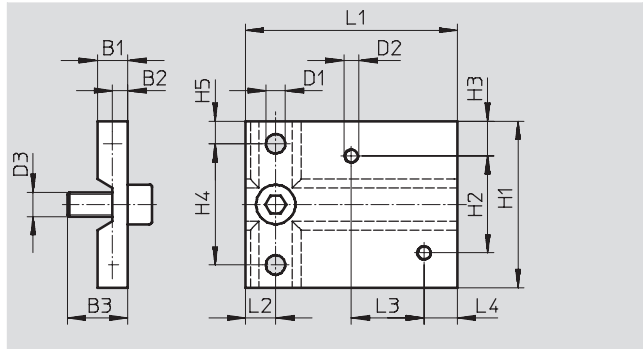
Solenoid valves

Accessories

FESTO

Mounting plate

Material:
Wrought aluminium alloy
Contains paint-wetting impairment
substances, RoHS-compliant

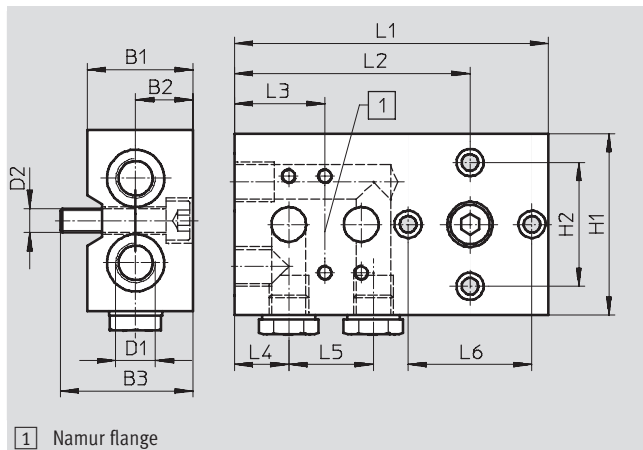


Dimensions and ordering data																	
Type [mm]	B1	B2	B3	D1	D2	D3	H1	H2	H3	H4	H5	L1	L2	L3	L4	CRC ¹⁾	Part No. Type
	10	5	20	6.4	M5	M8	55	32	11.5	40	7.5	70	10	24	11	3	563 399 VAME-S7-P

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Connection plate kit

Material:
Wrought aluminium alloy
Contains paint-wetting impairment
substances, RoHS-compliant



Dimensions and ordering data																
Type [mm]	B1	B2	B3	D1	D2	H1	H2	L1	L2	L3	L4	L5	L6	CRC ¹⁾	Part No.	Type
	35	19	44	G1/4	M8	60	41	104	70	30	18	28	41	3	563 396	VABF-S7-S-G14

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Solenoid valves

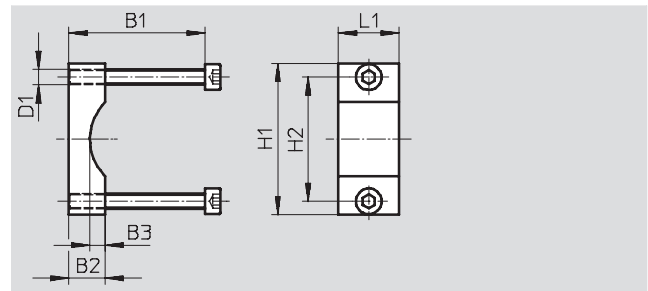
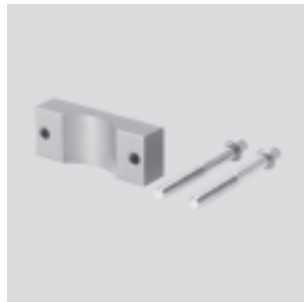
Accessories

FESTO

Mounting bracket

Material:

Wrought aluminium alloy
Contains paint-wetting impairment
substances, RoHS-compliant



Dimensions and ordering data

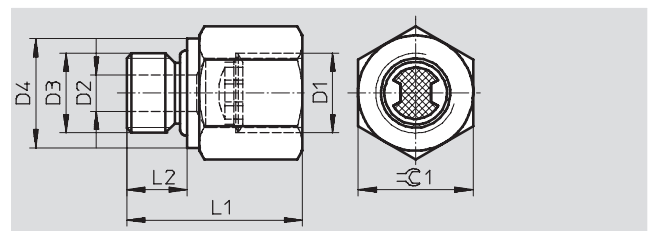
Type [mm]	B1	B2	B3	D1	H1	H2	L1	CRC ¹⁾	Part No.	Type
	45/65	12	5	M5	50	41	20	3	563 403	VAME-S7-Y

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Adapter with filter

Note on materials:

Contains paint-wetting impairment
substances, RoHS-compliant



Dimensions and ordering data

Type [mm]	D1	D2	D3	D4	L1	L2	C1	CRC ¹⁾	Part No.	Type
	NPT $\frac{1}{4}$	6	G $\frac{1}{4}$	18	29	10	19	1	563 397	NPFV-AF-G14-N14-MF
	G $\frac{1}{4}$	6	G $\frac{1}{4}$	18	29	10	19	1	563 398	NPFV-AF-G14-G14-MF

- 1) 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

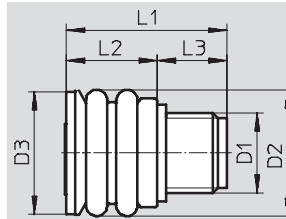
Accessories

FESTO

Exhaust protection

Material:



Ethylene propylene rubber
Contains paint-wetting impairment
substances, RoHS-compliant



Dimensions and ordering data									
Type [mm]	D1	D2	D3	L1	L2	L3	CRC ¹⁾	Part No.	Type
	G $\frac{1}{4}$	21	20.5	26.5	15	11.5	3	563 400	VABD-D3-SN-G14

1) Corrosion resistance class 3 according to Festo standard 940 070

Components subject to high corrosion stress. External visible parts in direct contact with industrial atmospheres or media such as solvents and cleaning agents, with a predominantly functional requirement for the surface.

Ordering data			
		Part No.	Type
Cable		Technical data → Internet: kmc	
		30 931	KMC-1-24 DC-2,5-LED
		30 932	KMC-1-230 AC-2,5
		30 933	KMC-1-24 DC-5-LED
		30 934	KMC-1-230 AC-5
		30 935	KMC-1-24-10-LED
Plug socket for screw terminal connection		Technical data → Internet: mssd	
		34 583	MSSD-C

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