

Solenoid valves, Namur

FESTO



Solenoid valves, Namur

Product range overview

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Function	Version	Type	Nominal size [mm]	Standard nominal flow rate [l/min]	Pneumatic connection	Pressure range [bar]	Ambient temperature [°C]
5/2-way valves ¹⁾		NVF3-...-EX	7	900	G1/4	2 ... 10	-5 ... +40
							ATEX: -5°C ≤ Ta ≤ +40°C
							ATEX: -5°C ≤ Ta ≤ +40°C
		NVF3-...-IA-EX	7	900	G1/4	2 ... 10	ATEX: -5°C ≤ Ta ≤ +40°C
		MFH	8	1,000	G1/4	2 ... 10	-10 ... +60
		MN1H	8	1,000	G1/4	2 ... 10	-10 ... +50
		MGTBH	8	1,000	G1/4	2 ... 8	-20 ... +60
		VSNB-...-A1 ²⁾	8	950	G1/4	2,5 ... 8	-10 ... +50
		VSNB-...-P2 ²⁾	8	950	G1/4	2,5 ... 8	-10 ... +50

1) Can be changed to 3/2-way function by exchanging the seal plate

Solenoid valves, Namur

Product range overview

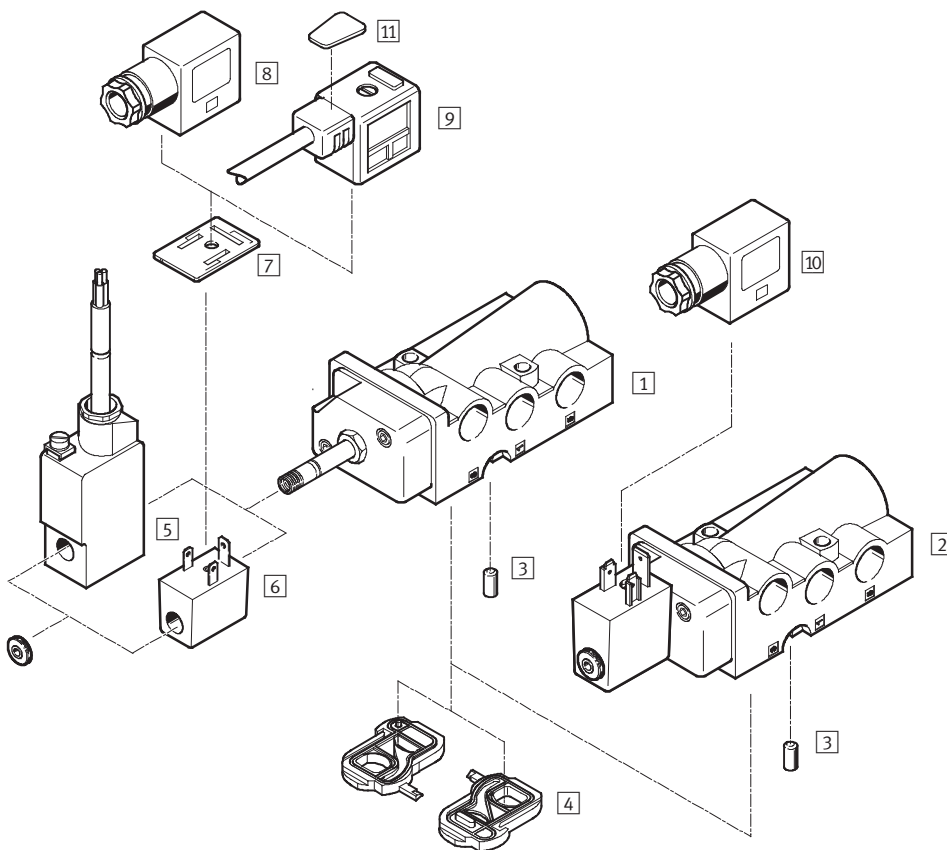
Type	Solenoid coil	Operating voltage range		Ignition protection type			→ Page/Internet
		[V DC]	[V AC]	nA = Non-sparking	m = Moulded encapsulation	ia = Intrinsically safe	
NVF3-...-EX	MSFG-...-OD ¹⁾ ; MSFW-...-OD ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	–	–	–	5
	MSFG-...-EX ¹⁾ ; MSFW-...-EX ¹⁾	24	24, 110, 230	■	–	–	
	MSFG-...-M-EX ¹⁾ ; MSFW-...-M-EX ¹⁾	24	24, 110, 230	–	■	–	
	Included in scope of delivery	24	–	–	–	■	
MFH	MSFG-...-OD ¹⁾ ; MSFW-...-OD ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	–	–	–	12
MN1H	MSFG-...-OD ¹⁾ ; MSFW-...-OD ¹⁾	24	110, 230	–	–	–	16
MGTBH	Included in scope of delivery	24	110, 230	–	–	–	20
VSNB- ... -A1	Included in scope of delivery	24	–	–	–	–	24
VSNB- ... -P2	MDH-...-PI ¹⁾	24	110, 230	–	–	–	

1) Solenoid coil must be ordered separately

Solenoid valves NVF3, Namur

Peripherals overview

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Solenoid valves and accessories		
	Brief description	→ Page/Internet
Solenoid valves		
1	NVF3-MOH-5/2K-1/4-EX	Solenoid valve for F solenoid coil
2	NVF3-MOH-5/2K-1/4-IA-EX	Solenoid valve mounted with intrinsically safe solenoid coil, ignition protection type ia = intrinsically safe
Accessories		
3	Coding pin	Included in scope of delivery
4	Seal plate	For changing the valve function, included in scope of delivery
5	Solenoid coil MSFG-...-M-EX and MSFW-...-M-EX	Ignition protection type m = moulded encapsulation
6	Solenoid coil MSFG-...-EX and MSFW-...-EX	Ignition protection type nA = non-sparking
7	Illuminating seal MF-LD	For indicating the switching status
8	Plug socket MSSD-F-M16	Insert can be repositioned by 180°. Ignition protection type nA = non-sparking for solenoid coil 6
9	Plug socket with cable KMF	Insert can be repositioned by 180°
10	Plug socket MSSD-V-M16	Insert can be repositioned by 180°. Ignition protection type ia = intrinsically safe for solenoid coil 2
11	Inscription labels KMC/F/V-BZ	For identifying the plug sockets

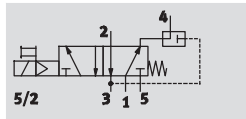
Solenoid valves NVF3, Namur

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Technical data

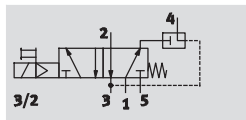
Function¹⁾

5/2-way valve



3/2-way valve

with exhaust air return



Voltage

12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC

Pressure

2 ... 10 bar

Temperature range

-5 ... +40 °C
ATEX
-5 °C ≤ Ta ≤ +40 °C



1) Can be changed by exchanging the seal plate

General technical data			Solenoid valve with F coil of choice	Solenoid valve with mounted solenoid coil
Valve function			5/2-way or 3/2-way, single solenoid	
Conforms to			VDI/VDE 3845 (NAMUR)	
Width	[mm]		53	
Design			Disk seat	
Sealing principle			Soft	
Type of actuation			Electrical	
Type of reset			Mechanical spring	
Type of control			Piloted	
Direction of flow			Non-reversible	
Exhaust function			Flow control	
Manual override			Detenting	
Type of mounting			Via through-holes	
Mounting position			Any	
Freedom from overlap			No	
Connection, breathing opening			Internal	
Nominal size	[mm]		7	
Standard nominal flow rate	1 → 2, 2 → 3	[l/min]	900	
	Exhaust air return	[l/min]	150	
	2 → 4			
B value			0.33	
C value			4.2	
Pneumatic connection	1, 3, 5		G $\frac{1}{4}$	
	2, 4		Namur port pattern	
	Pilot exhaust port 84		M5	
Product weight	[g]		280	350

Solenoid valves NVF3, Namur

Technical data

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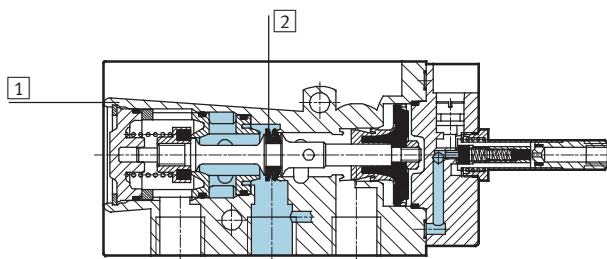
Operating and environmental conditions		
	Solenoid valve with F coil of choice	Solenoid valve with mounted solenoid coil
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]	
Note about the operating/pilot medium	Operation with lubricated medium possible (in which case lubricated operation will always be required)	
Operating pressure range [bar]	2 ... 10	
Ambient temperature [°C]	-5 ... +40	
Temperature of medium [°C]	-5 ... +40	
ATEX category gas	II 2G	
Ex-ignition protection type gas	c T6	
ATEX category dust	II 2D	
EX-ignition protection type dust [°C]	40	
ATEX ambient temperature	-5 °C ≤ Ta ≤ +40 °C	
CE symbol	In accordance with EU explosion protection directive (ATEX)	
Corrosion resistance class CRC	1 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.

Electrical data		
	Solenoid valve with F coil of choice	Solenoid valve with mounted solenoid coil
Electrical connection	Plug, 3-pin, or cable, 3-wire	Cable, 3-wire
Operating voltage range	[V DC] 12, 24, 42, 48	24 ±10%
	[V AC] 24, 42, 48, 110, 230, 240 at 50 ... 60 Hz	–
Coil characteristics [W]	–	0.8
Max. input power [W]	–	1.46
Max. input voltage [V]	–	48
Max. input current [A]	–	0.487
Effective inductance	–	Negligibly low
Effective capacity	–	Negligibly low
Protection class to EN 60529	IP 65 with plug socket	IP 65 with plug socket
Response time on [ms]	50	50
Response time off [ms]	100	100

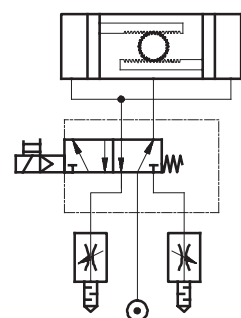
Materials



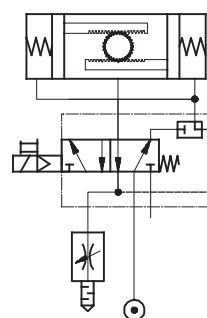
1	Housing	Die-cast aluminium, anodised
2	Seals	NBR
		Contains paint wetting impairment substances

Sample circuit

5/2-way valve



3/2-way valve with the option of exhaust air return



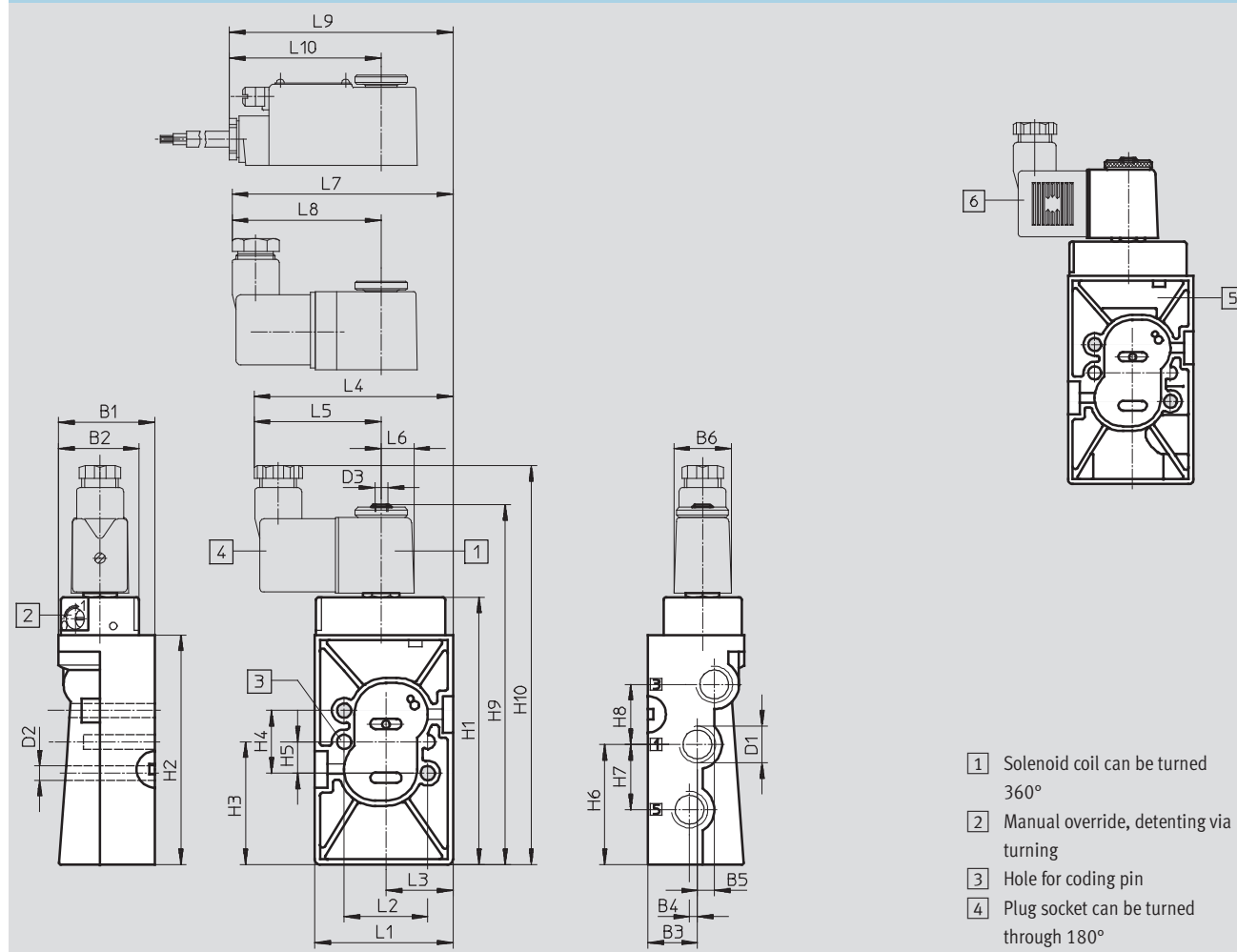
Solenoid valves NVF3, Namur

Technical data

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Dimensions

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



Type	B1	B2	B3 ±0.1	B4 ±0.1	B5 ±0.1	B6	D1	D2 Ø	D3	H1	H2	H3 ±0.15	H4 ±0.15	H5 ±0.1	H6 ±0.1
NVF3-...	37	31	19	3	6.5	22	G1/4	5.5	M5	102.4	88	47	24	12	46

Type	H7 ±0.15	H8 ±0.15	H9	H10	L1 ±0.2	L2 ±0.15	L3 ±0.1	L4	L5	L6	L7	L8	L9	L10
NVF3-...	25	23	136.4	153	53	32	27.7	76.5	49	12.5	84.7	57.2	85.3	57.8

Ordering data – Valves

Solenoid valve without coil¹⁾

Part No. Type

535987 NVF3-MOH-5/2-K-1/4-EX

Solenoid valve mounted with intrinsically safe solenoid coil

Part No. Type

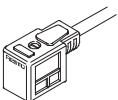
535988 NVF3-MOH-5/2-K-1/4-IA-EX

1) Solenoid coil must be ordered separately → 8,
explosion-proof solenoid coil → 9

Solenoid valves NVF3, Namur

Accessories

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Ordering data				
	Operating voltage	Cable length	Part No.	Type
Solenoid coil F without plug socket Technical data → Internet: msfg, msfw				
	12 V DC	–	34410	MSFG-12DC-OD
	24 V DC	–	34411	MSFG-24/42-50/60-OD
	42 V DC	–	34413	MSFG-42DC-OD
	48 V DC	–	34414	MSFG-48DC-OD
	24 V AC/50 ... 60 Hz	–	34415	MSFW-24AC-OD
	42 V AC/50 ... 60 Hz	–	34411	MSFG-24/42-50/60-OD
	48 V AC/50 ... 60 Hz	–	34418	MSFW-48AC-OD
	110 V AC/50 ... 60 Hz	–	34420	MSFW-110AC-OD
	230 V AC/50 ... 60 Hz	–	34422	MSFW-230AC-OD
	240 V AC/50 ... 60 Hz	–	34424	MSFW-240AC-OD
Plug socket for screw terminal connection Technical data → Internet: mssd				
	–	–	34431	MSSD-F
	–	–	539710	MSSD-F-M16
Plug socket for insulation displacement connection Technical data → Internet: mssd				
	–	–	192746	MSSD-F-S-M16
Plug socket with cable Technical data → Internet: kmf-1				
	24 V DC	2.5 m	30935	KMF-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30936	KMF-1-230AC-2,5
	24 V DC	5 m	30937	KMF-1-24DC-5-LED
	0 ... 240 V DC/AC		30938	KMF-1-230AC-5
Illuminating seal Technical data → Internet: mf-ld				
	12 ... 24 V DC/AC	–	19143	MF-LD-12-24DC
	230 V DC/AC	–	19144	MF-LD-230AC
Inscription label Technical data → Internet: kmc				
	–	–	33362	KMC/F/V-BZ-35X ¹⁾

1) Scope of delivery 35 pieces

Note

Valve/solenoid coil combinations made up of the basic valve NVF3-MOH-5/2-K-1/4-EX and the solenoid coil MSF...-OD must not be used in hazardous areas.

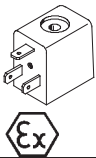
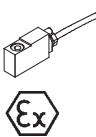
Only combinations with the approved solenoid coil MSF...-EX may be used here.

→ 9

Solenoid valves NVF3, Namur

Accessories for ATEX environment

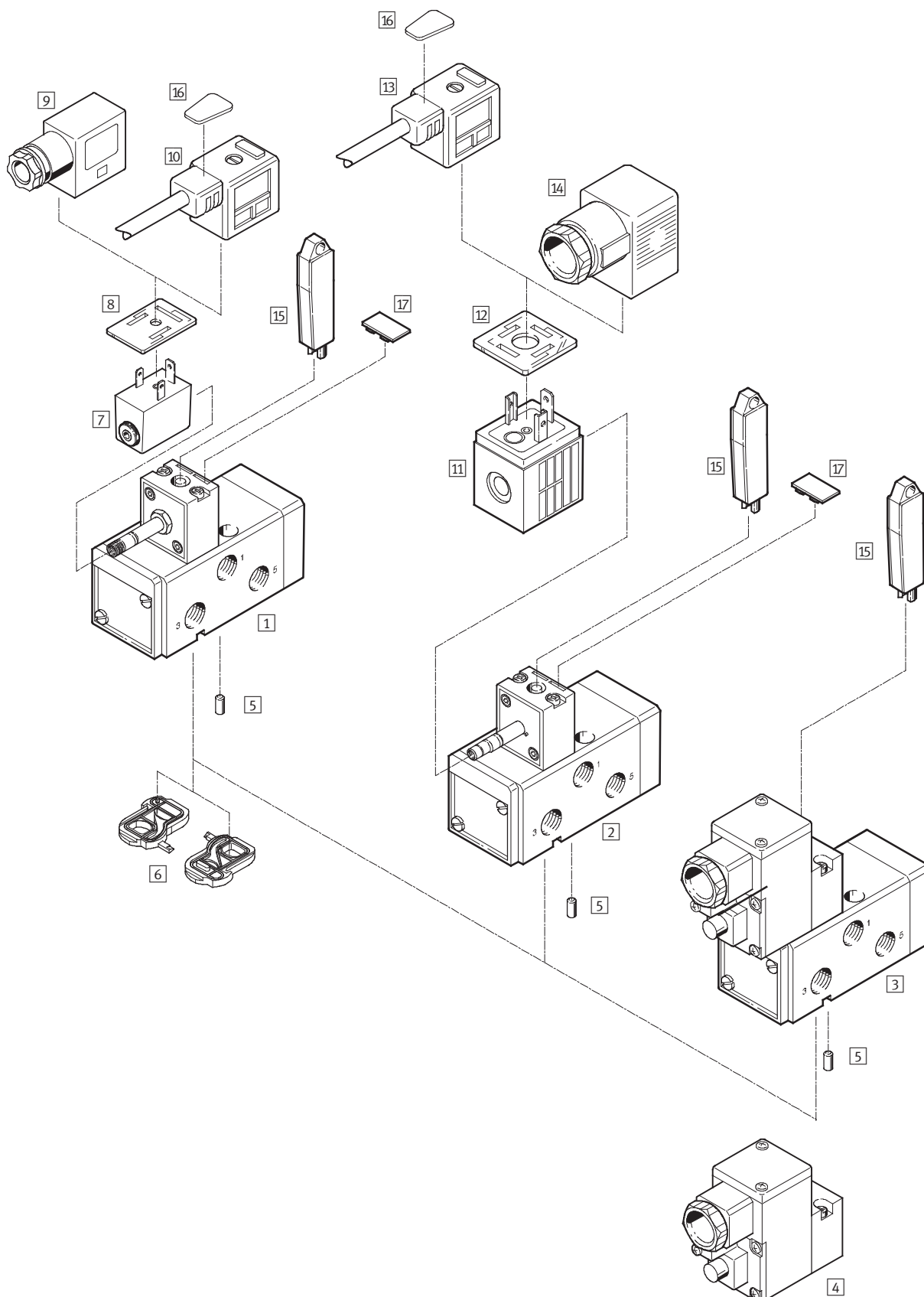
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Ordering data				
	Operating voltage	Cable length	Part No.	Type
Solenoid coil F for ignition protection type nA = non-sparking Technical data → Internet: msfg, msfw				
	24 V DC	–	536931	MSFG-24-EX
	24 V AC/50 ... 60 Hz	–	536932	MSFW-24-50/60-EX
	110 V AC/50 ... 60 Hz	–	536933	MSFW-110-50/60-EX
	230 V AC/50 ... 60 Hz	–	536934	MSFW-230-50/60-EX
Solenoid coil F for ignition protection type m = moulded encapsulation, moulded-in cable Technical data → Internet: msfg, msfw				
	24 V DC	1 m	535619	MSFG-24DC-M-EX
	24 V DC	5 m	535621	MSFG-24DC-K5-M-EX
	24 V AC/50 ... 60 Hz	1 m	535623	MSFW-24AC-M-EX
	110 V AC/50 ... 60 Hz	1 m	535622	MSFW-110AC-M-EX
	110 V AC/50 ... 60 Hz	5 m	535624	MSFW-110AC-K5-M-EX
	230 V AC/50 ... 60 Hz	1 m	535620	MSFW-230AC-M-EX
	230 V AC/50 ... 60 Hz	5 m	535625	MSFW-230AC-K5-M-EX
	24 V DC	x m	538215	MSFG-24DC-KX-M-EX
	24 V AC/50 ... 60 Hz	x m	538218	MSFW-24AC-KX-M-EX
	110 V AC/50 ... 60 Hz	x m	538217	MSFW-110AC-KX-M-EX
	230 V AC/50 ... 60 Hz	x m	538216	MSFW-230AC-KX-M-EX
Plug socket with screw terminal connection for solenoid coil MSF...-EX, ignition protection type nA = non-sparking Technical data → Internet: mssd				
	–	–	539710	MSSD-F-M16
Plug socket with screw terminal connection for solenoid valve NVF3-MOH-5/2-K-¼-IA-EX, ignition protection type ia = intrinsically safe Technical data → Internet: mssd				
	–	–	539713	MSSD-V-M16

Solenoid valves MFH, MN1H, MGTBH, Namur

Peripherals overview

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Solenoid valves MFH, MN1H, MGTBH, Namur

Peripherals overview

Solenoid valves and accessories		
	Brief description	→ Page/Internet
Solenoid valves		
1 MFH-5/2K-FR-NA	Basic valve with pilot control valve for F solenoid coil	12
2 MN1H-5/2K-FR-NA	Basic valve with pilot control valve for N1 solenoid coil	16
3 MGTBH-5/2K-FR-...-NA	Basic valve with pilot control valve, solenoid coil and socket	20
Pilot valve		
4 MGTBH-3/2-1.2-...	Pilot valve with solenoid coil and threaded connector	23
Accessories		
5 Coding pin	Included in scope of delivery	–
6 Seal plate	For changing the valve function, included in scope of delivery	–
7 Solenoid coil MSFG-...-OD / MSFW-...-OD		15
8 Luminescent seal MF-LD	For indicating the switching status	
9 Plug socket MSSD-F	Insert can be repositioned by 180°	
10 Plug socket with cable KMF	Insert can be repositioned by 180°	
11 Solenoid coil MSN1G / MSN1W		19
12 Luminescent seal MC-LD	For indicating the switching status	
13 Plug socket with cable KMC		
14 Plug socket MSSD-C		
15 Manual override tool AHB		15
16 Inscription labels KMC/F/V-BZ	For identifying the plug sockets	
17 Inscription labels IBS-9x17	For identifying the valves	

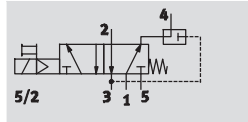
Solenoid valves MFH, Namur

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Technical data

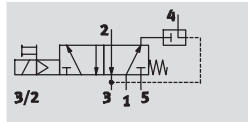
Function¹⁾

5/2-way valve



3/2-way valve

with exhaust air feedback



Voltage

12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC

Pressure

2 ... 10 bar

Temperature range

-10 ... +60 °C



1) Can be changed by exchanging the seal plate

General technical data		
Valve function	5/2-way or 3/2-way, monostable	
Design	Piston slide	
Sealing principle	Soft	
Actuation type	Electrical	
Type of reset	Mechanical spring	
Type of control	Piloted	
Direction of flow	Reversible	
Exhaust function	Flow control	
Nominal size	8 mm	
Standard nominal flow rate	1 → 2, 1 → 4	1,000 l/min
	2 → 3, 4 → 5	1,100 l/min
	Exhaust air return 2 → 4	140 l/min
b value	0.25	
C value	3 l/sbar	
Pneumatic connection	1, 3, 5	G1/4
	2, 4	Namur port pattern
Type of mounting	Via through holes	
Mounting position	Any	
Manual override	With accessory, detenting	

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm
Operating pressure range	2 ... 10 bar
Ambient temperature	-5°C ≤ Ta ≤ +40°C
Temperature of medium	-10 ... +60 °C
Corrosion resistance class CRC ¹⁾	3

1) Corrosion resistance class 3 according to Festo standard 940 070
Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

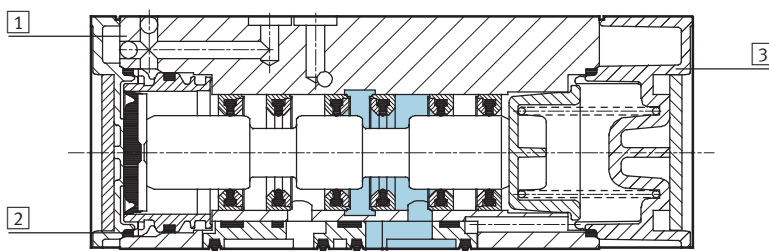
Solenoid valves MFH, Namur

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Technical data

Electrical data		
Electrical connection	Plug, square design to DIN EN 175 301-803	
Operating voltage range	D.C. voltage	12, 24, 42, 48 V DC $\pm 10\%$
	A.C. voltage	24, 42, 48, 110, 230, 240 V AC $\pm 10\%$ at 50 ... 60 Hz $\pm 5\%$
Coil characteristics	24 V DC: 2.5 W	
Protection class to EN 60 529	IP 65 with plug socket	
On	20 ms	
Off	90 ms	

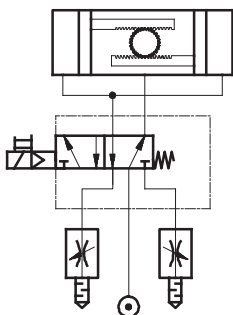
Materials



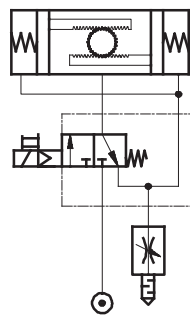
1	2	3
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve



3/2-way valve with the option of exhaust air return



Solenoid valves MFH, Namur

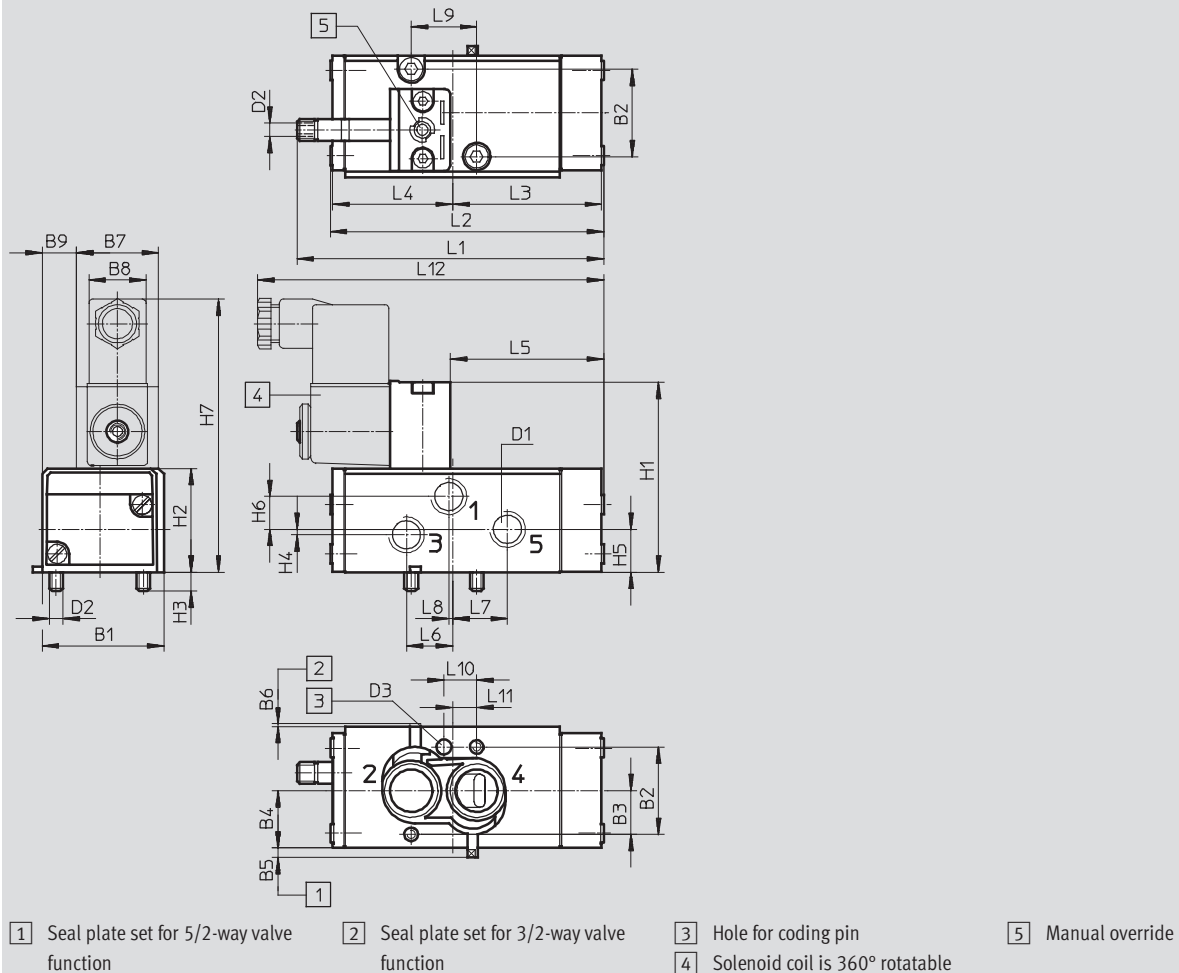
Technical data

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Dimensions

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

Solenoid valve MFH



Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3 Ø	H1	H2	H3	H4
MFH...	44.5	32	16	21	3.5	1	30	20	12.25	G1/4	M5	5.5x4	70	38	7	2

Type	H5	H6	H7	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
MFH...	15.7	12	101	110.6	100	54.5	44.05	55.5	17	20	1.5	24	12	8.75	128

Ordering data – Valve

Solenoid valve without coil¹⁾

Part No. Type

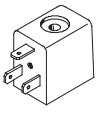
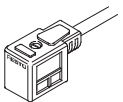
183973 MFH-5/2K-FR-NA

1) Solenoid coil must be ordered separately → 15

Solenoid valves MFH, Namur

Accessories

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Ordering data				
	Operating voltage	Cable length	Part No.	Type
F solenoid coil without plug socket Technical data → Internet: msfg, msfw				
	12 V DC	–	34410	MSFG-12DC-OD
	24 V DC	–	34411	MSFG-24/42-50/60-OD
	42 V DC	–	34413	MSFG-42DC-OD
	48 V DC	–	34414	MSFG-48DC-OD
	24 V AC/50 ... 60 Hz	–	34415	MSFW-24AC-OD
	42 V AC/50 ... 60 Hz	–	34411	MSFG-24/42-50/60-OD
	48 V AC/50 ... 60 Hz	–	34418	MSFW-48AC-OD
	110 V AC/50 ... 60 Hz	–	34420	MSFW-110AC-OD
	230 V AC/50 ... 60 Hz	–	34422	MSFW-230AC-OD
	240 V AC/50 ... 60 Hz	–	34424	MSFW-240AC-OD
Luminescent seal Technical data → Internet: mf-ld				
	12 ... 24 V DC/AC	–	19143	MF-LD-12-24DC
	230 V DC/AC	–	19144	MF-LD-230AC
Plug sockets, plug sockets with cable Technical data → Internet: mssd, kmf-1				
	–	–	34431	MSSD-F
	24 V DC	2.5 m	30935	KMF-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30936	KMF-1-230AC-2,5
	24 V DC	5 m	30937	KMF-1-24DC-5-LED
	0 ... 240 V DC/AC		30938	KMF-1-230AC-5
	Plug socket with insulation displacement technology			
	–	–	192746	MSSD-F-S-M16
Manual override tool Technical data → Internet: ahb				
	–	–	157651	AHB-MD/MF/MV
Inscription label Technical data → Internet: kmc				
	–	–	33362	KMC/F/V-BZ-35X ¹⁾

1) Scope of delivery 35 pieces

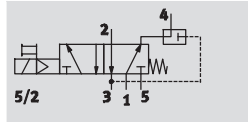
Solenoid valves MN1H, Namur

FESTO

Technical data

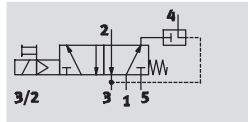
Function¹⁾

5/2-way valve



3/2-way valve

with exhaust air return



Voltage

24 V DC
110, 230 V AC

Pressure

2 ... 10 bar

Temperature range

-10 ... +50 °C



- 1) Can be changed by exchanging the seal plate

General technical data		
Valve function	5/2-way or 3/2-way, monostable	
Design	Piston slide	
Sealing principle	Soft	
Actuation type	Electrical	
Type of reset	Mechanical spring	
Type of control	Piloted	
Direction of flow	Reversible	
Exhaust function	Flow control	
Nominal size	8 mm	
Standard nominal flow rate	1 → 2, 1 → 4	1,000 l/min
	2 → 3, 4 → 5	1,100 l/min
	Exhaust air return 2 → 4	140 l/min
b value	0.25	
C value	3 l/sbar	
Pneumatic connection	1, 3, 5	G $\frac{1}{4}$
	2, 4	Namur port pattern
Type of mounting	Via through holes	
Mounting position	Any	
Manual override	With accessory, detenting	

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm
Operating pressure range	2 ... 10 bar
Ambient temperature	-10 ... +50 °C
Temperature of medium	-10 ... +50 °C
Corrosion resistance class CRC ¹⁾	3

- 1) Corrosion resistance class 3 according to Festo standard 940 070
Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

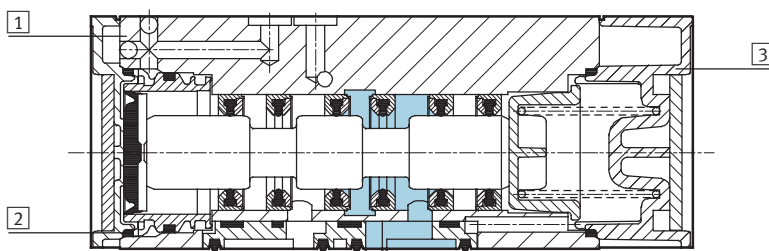
Solenoid valves MN1H, Namur

FESTO

Technical data

Electrical data		
Electrical connection		Plug, square design to DIN EN 175 301-803
Operating voltage range	D.C. voltage	24 V DC $\pm 10\%$
	A.C. voltage	110, 230 V AC $\pm 10\%$ at 50 ... 60 Hz $\pm 5\%$
Coil characteristics		24 V DC: 2.5 W
Protection class to EN 60 529		IP 65 with plug socket
On		20 ms
Off		90 ms

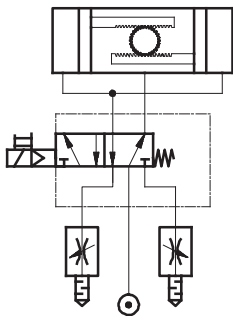
Materials



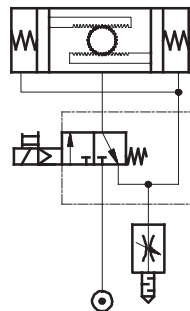
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve



3/2-way valve with the option of exhaust air return



Solenoid valves MN1H, Namur

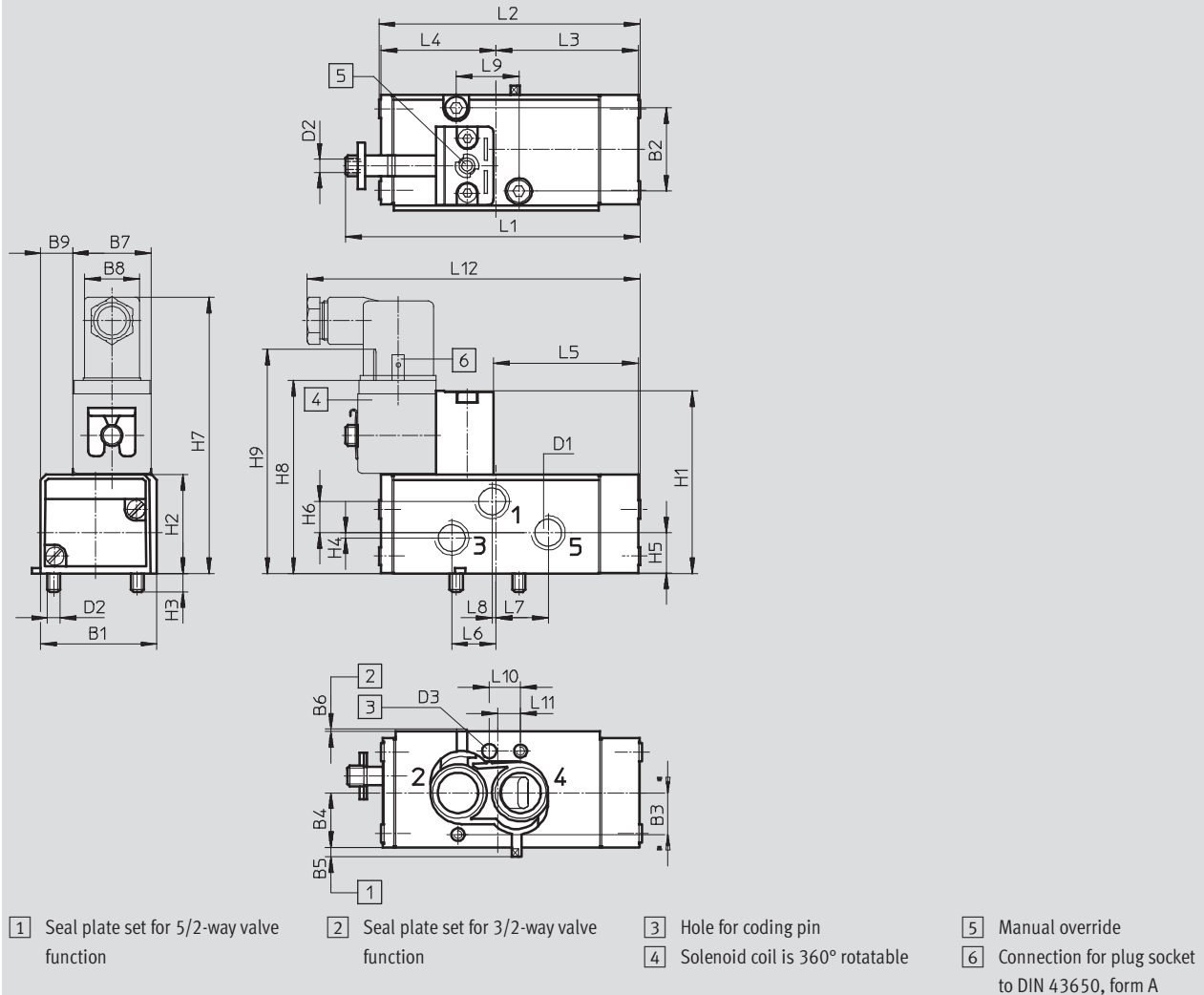
Technical data

FESTO

Dimensions

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

Solenoid valve MN1H



Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3 Ø	H1	H2	H3	H4	H5
MN1H-...	44.5	32	16	21	3.5	1	30	20	12.25	G $\frac{1}{4}$	M5	5.5x4	70	38	7	2	15.7

Type	H6	H7	H8	H9	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
MN1H-...	12	106	86	106	113	100	54.5	44.05	55.5	17	20	1.5	24	12	8.75	128

Ordering data – Valve

Solenoid valve without coil¹⁾

Part No. Type

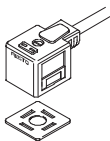
183974 MN1H-5/2K-FR-NA

1) Solenoid coil must be ordered separately → 19

Solenoid valves MN1H, Namur

Accessories

FESTO

Ordering data				
	Operating voltage	Cable length	Part No.	Type
N1 solenoid coil without plug socket Technical data → Internet: msn1g				
	24 V DC	–	123060	MSN1G-24DC-OD
	110 V AC/50 ... 60 Hz	–	123061	MSN1W-110AC-OD
	230 V AC/50 ... 60 Hz	–	123062	MSN1W-230AC-OD
Luminescent seal Technical data → Internet: mc-ld				
	12 ... 24 V DC/AC	–	19145	MC-LD-12-24DC
	230 V DC/AC	–	19146	MC-LD-230AC
Plug socket, plug socket with cable Technical data → Internet: mssd, kmc				
	–	–	34583	MSSD-C
	24 V DC	2.5 m	30931	KMC-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30932	KMC-1-230AC-2,5
	24 V DC	5 m	30933	KMC-1-24DC-5-LED
	0 ... 240 V DC/AC		30934	KMC-1-230AC-5
	Plug socket with insulation displacement technology			
	–	–	192748	MSSD-C-S-M16
Manual override tool Technical data → Internet: ahb				
	–	–	157651	AHB-MD/MF/MV
Inscription labels Technical data → Internet: kmc, ibs				
	–	–	33362	KMC/F/V-BZ-35X ¹⁾
	–	–	18182	IBS-9x20 ²⁾

1) Scope of delivery 35 pieces

2) Scope of delivery 20 pieces

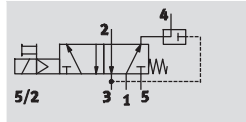
Solenoid valves MGTBH, Namur

FESTO

Technical data

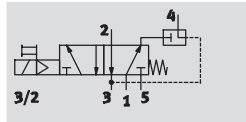
Function¹⁾

5/2-way valve



3/2-way valve

with exhaust air return



Voltage

24 V DC
110, 230 V AC

Pressure

2 ... 8 bar

Temperature range

–20 ... +60 °C



- 1) Can be changed by exchanging the seal plate

General technical data		
Valve function	5/2-way or 3/2-way, monostable	
Design	Piston slide	
Sealing principle	Soft	
Actuation type	Electrical	
Type of reset	Mechanical spring	
Type of control	Piloted	
Direction of flow	Irreversible	
Exhaust function	Flow control	
Nominal size	8 mm	
Standard nominal flow rate	1 → 2, 1 → 4	1,000 l/min
	2 → 3, 4 → 5	1,100 l/min
	Exhaust air return 2 → 4	140 l/min
b value	0.25	
C value	4.3 l/sbar	
Pneumatic connection	1, 3, 5	G $\frac{1}{4}$
	2, 4	Namur port pattern
Type of mounting	Via through holes	
Mounting position	Any	
Manual override	With accessory, detenting	

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated
Operating pressure range	2 ... 8 bar
Ambient temperature	–20 ... +60 °C
Temperature of medium	–20 ... +60 °C
Corrosion resistance class CRC ¹⁾	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.

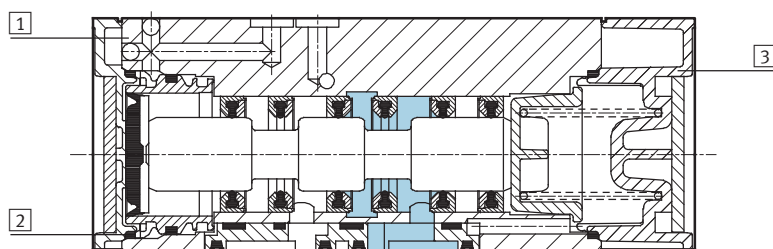
Solenoid valves MGTBH, Namur

FESTO

Technical data

Electrical data			
Electrical connection		Cable, 3-wire	
Operating voltage range	D.C. voltage	24 V DC $\pm 10\%$	
	A.C. voltage	110 V AC $\pm 10\%$ at 50 Hz $\pm 10\%$, 110 V AC $-10/+20\%$ at 60 Hz $\pm 10\%$ 230 V AC $\pm 10\%$ at 50 Hz $-13/+10\%$, 230 V AC $\pm 10\%$ at 60 Hz $-13/+17\%$	
Coil characteristics	D.C. voltage	24 V	2.5 W
	A.C. voltage	110 V, 230 V	Pull: 5 W Hold: 3.7 W
Protection class to EN 60 529		IP 65 with plug socket	
On		40 ms	
Off		100 ms	

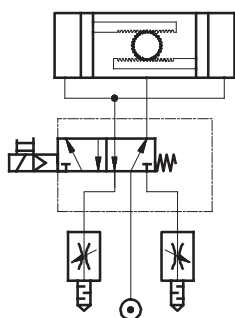
Materials



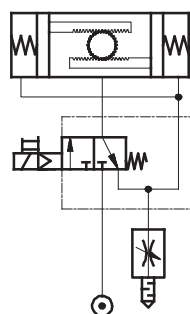
[1]	Housing	Aluminium die-cast, anodised
[2]	Seals	Nitrile rubber
[3]	Cover	Polyacetate

Connection examples

5/2-way valve



3/2-way valve with the option of exhaust air return



Solenoid valves MGTBH, Namur

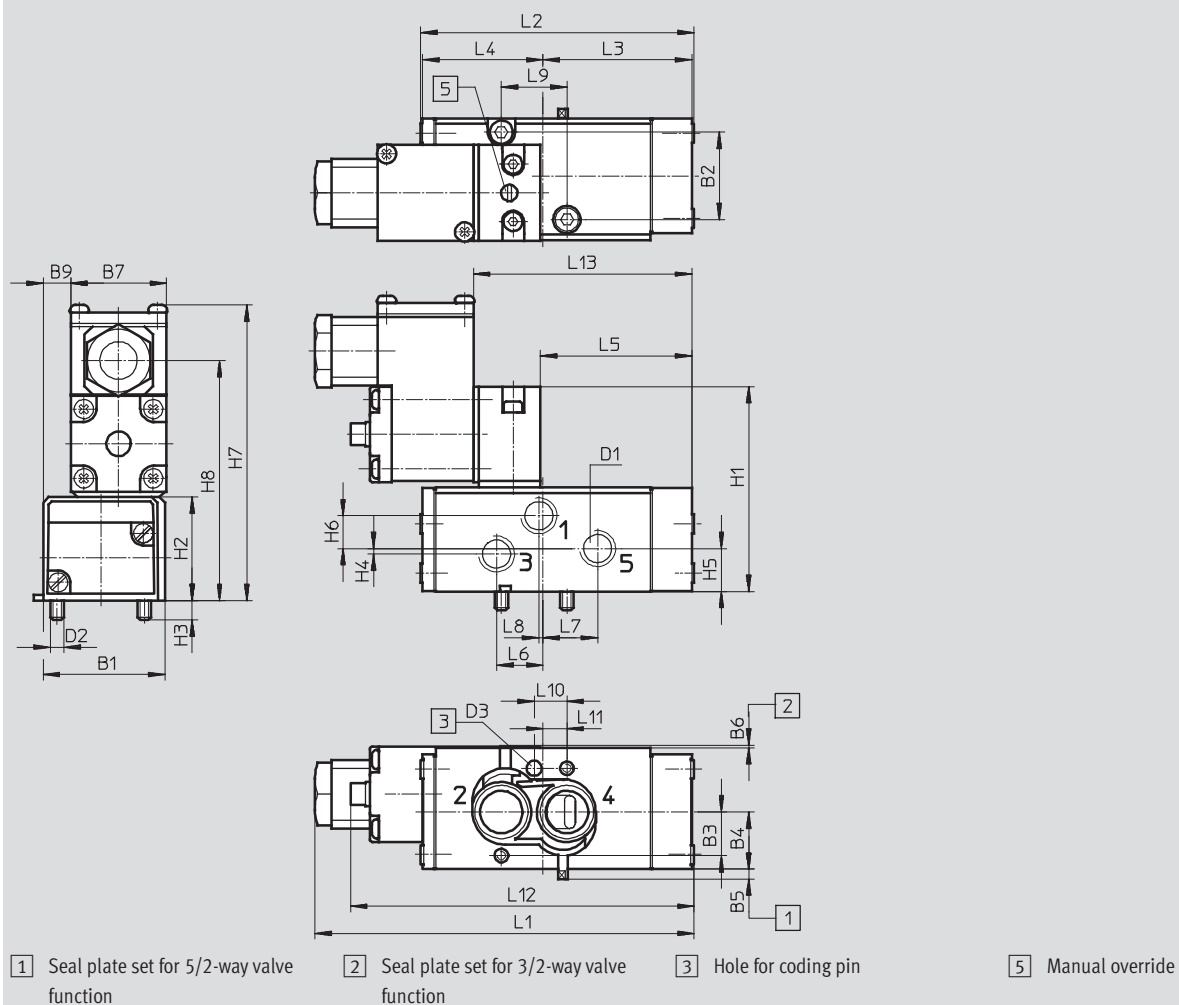
Technical data

FESTO

Dimensions

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

Solenoid valve MGTBH



Type	B1	B2	B3	B4	B5	B6	B7	B9	D1	D2	D3 Ø	H1	H2	H3	H4	H5
MGTBH-...	44.5	32	16	21	3.5	1	35	9.75	G $\frac{3}{4}$	M5	5.5x4	75	38	7	2	15.7

Type	H6	H7	H8	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
MGTBH-...	12	109	88	139	100	54.5	44.05	55.5	17	20	1.5	24	12	8.75	125.8	80

Solenoid valves MGTBH, Namur

FESTO

Technical data

Ordering data – Valve		
Solenoid valve with coil and plug socket ¹⁾		
Operating voltage	Part No.	Type
24 V DC	183978	MGTBH-5/2K-FR-NA
110 V AC	188400	MGTBH-5/2K-FR-110AC-NA
230 V AC	188401	MGTBH-5/2K-FR-230AC-NA

1) Individual pilot control valve, with solenoid coil and plug socket → 23

Ordering data – Accessories				
	Operating voltage	Cable length	Part No.	Type
Pilot valve				Technical data → Internet: mgtbh
	24 V DC	–	184105	MGTBH-3/2-1,2-24DC
	110 V AC	–	185246	MGTBH-3/2-1,2-110AC
	230 V AC	–	185248	MGTBH-3/2-1,2-230AC
Manual override tool				Technical data → Internet: ahh
	–	–	157651	AHB-MD/MF/MV
Inscription labels				Technical data → Internet: ibs
	–	–	18182	IBS-9x20¹⁾

1) Scope of delivery 20 pieces

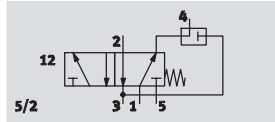
Solenoid valves VSNB, Namur

FESTO

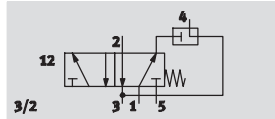
Technical data

Function

5/2-way valve, single solenoid¹⁾



double solenoid



Voltage

24 V DC
110, 230 V AC

Pressure

2.5 ... 8 bar

Temperature range

-10 ... +60 °C



- 1) Can be changed to 3/2-way valve by exchanging the seal plate

General technical data			
		Single solenoid valve with pilot valve	Double solenoid valve with pilot valves
Valve function		5/2- or 3/2-way	
Constructional design		Piston spool	
Sealing principle		Soft	
Actuation type		Electrical	
Reset method		Mechanical spring, none (double solenoid)	
Control type		Piloted	
Direction of flow		Non-reversible	
Exhaust function		Flow control	
Manual override		Pushing/detenting	
Type of mounting		Via through-hole on sub-base	
Width	[mm]	44.5	
Mounting position		Any	
Nominal diameter	[mm]	8	
Standard nominal flow rate	1 → 2, 1 → 4 [l/min]	950	
Pneumatic connection	1, 3, 5	G1/4	
	2, 4	Sub-base (Namur port pattern)	
	12, 14	M5	
Product weight	[g]	510	665
			350

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm
Operating pressure range	[bar] 2.5 ... 8
Ambient temperature	[°C] -10 ... +60
Temperature of medium (with coil MDH)	[°C] -10 ... +50
Corrosion resistance class CRC	2 ¹⁾

- 1) Corrosion resistance class 2 to Festo standard 940 070
Components subject to moderate corrosion stress. 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.

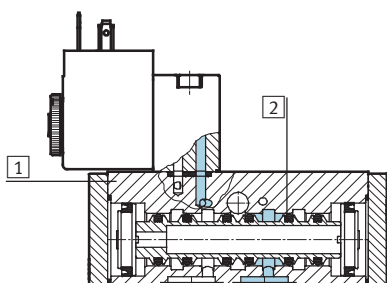
Solenoid valves VSNB, Namur

Technical data

FESTO

Electrical data			
Electrical connection			Plug, square design, to DIN EN 175301-803, type A
Operating voltage range	DC voltage		24 V −15%/+10%
	AC voltage		110 V −15%/+10%, 230 V −15%/+10%
Coil characteristics	DC voltage	24 V	2.1 W
	AC voltage	110 V,	Pull: 6.6 W
		230 V	Hold: 4 W
Protection class to EN 60529			IP65 with plug socket
Response time on			30 ms
Response time off			100 ms
Changeover time			30 ms

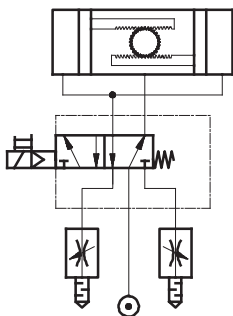
Materials



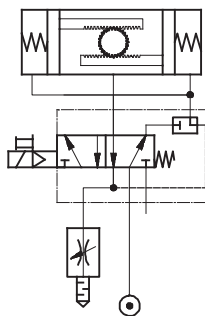
1	Housing	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber, hydrogenated nitrile rubber
–	Screws	High-alloy stainless steel
Note on materials		Contains paint wetting impairment substances

Sample circuits

5/2-way valve, single solenoid



3/2-way valve, single solenoid, with the option of exhaust air return



Solenoid valves VSNB, Namur

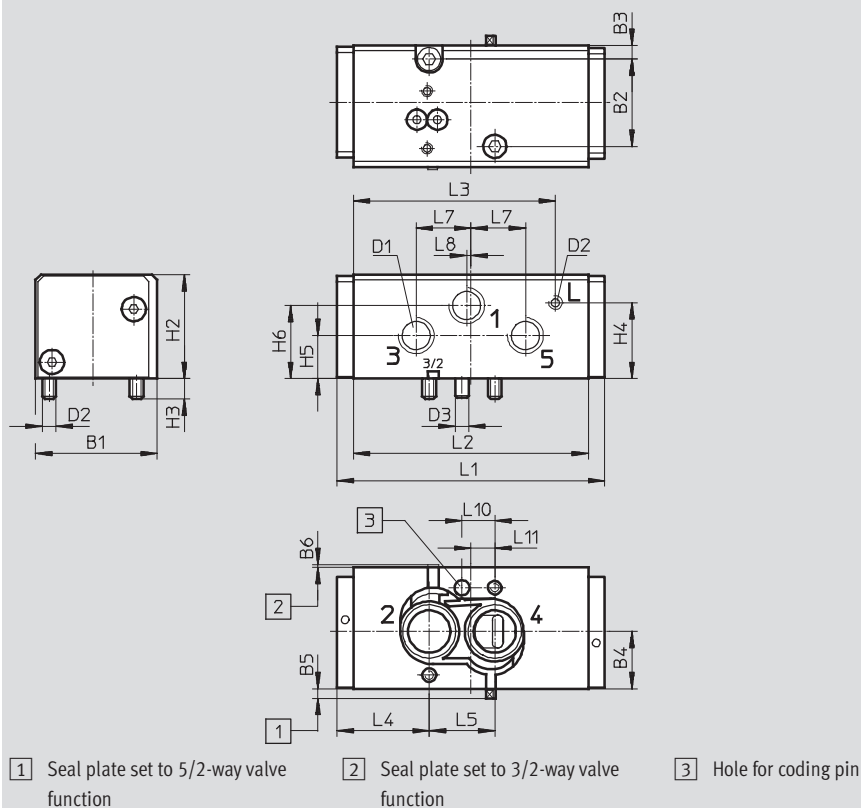
Technical data

FESTO

Dimensions

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

Basic valve, single solenoid



Type	B1	B2	B3	B4	B5	B6	D1	D2	D3 Ø	H2	H3	H4
VSNB-...	44.5	32	5	21	3.5	1	G1/4	M5	5.6	38	7.5	27.7

Type	H5	H6	L1	L2	L3	L4	L5	L7	L8	L10	L11
VSNB-...	15.7	26.7	98	86	74	33.75	24	20	1.5	12	8.75

Solenoid valves VSNB, Namur

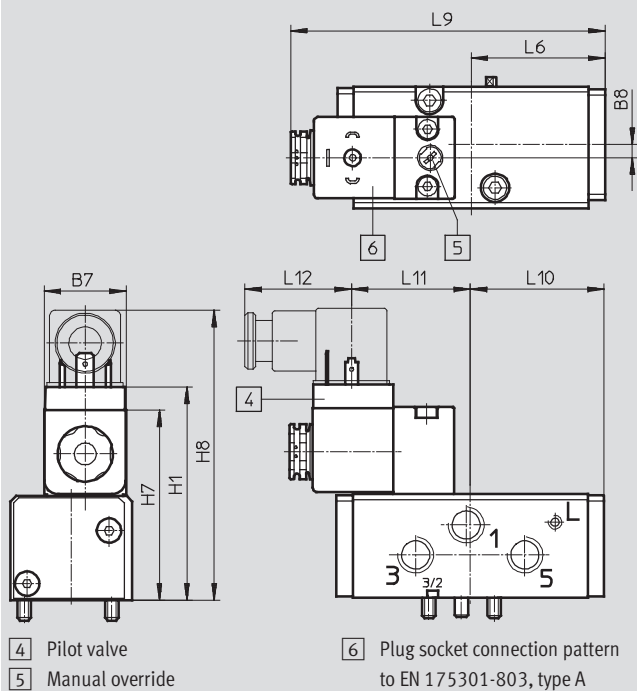
Technical data

FESTO

Dimensions

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

Solenoid valve, single solenoid



Type	B7	B8	H1	H7	H8	L6	L9	L10	L11	L12
VSNB-...	30	5	78	70	105	55	118.5	49	43.5	39

Solenoid valves VSNB, Namur

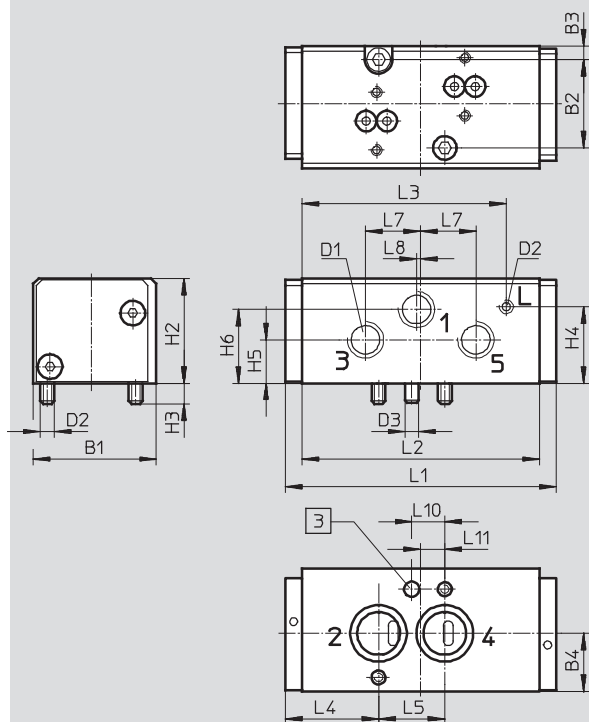
Technical data

FESTO

Dimensions

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

Basic valve, double solenoid



3 Hole for coding pin

Type	B1	B2	B3	B4	D1	D2	D3 Ø	H2	H3	H4	H5
VSNB-...	44.5	32	5	21	G1/4	M5	5.6	38	7.5	27.7	15.7

Type	H6	L1	L2	L3	L4	L5	L7	L8	L10	L11
VSNB-...	26.7	98	86	74	33.75	24	20	1.5	12	8.75

Solenoid valves VSNB, Namur

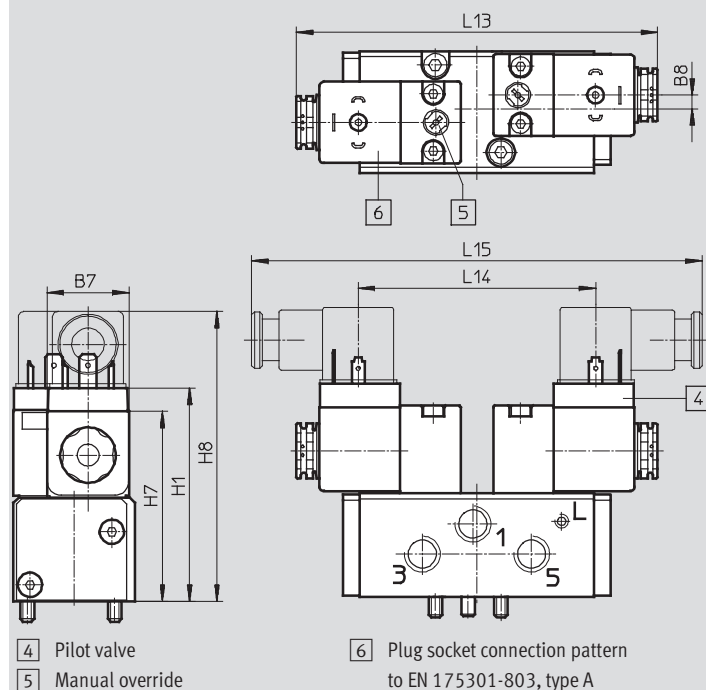
Technical data

FESTO

Dimensions

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

Solenoid valve, double solenoid



Type	B7	B8	H1	H7	H8	L13	L14	L15
VSNB-...	30	5	78	70	105	132.5	87	165

Ordering data – Solenoid valves without pilot valve¹⁾

Description	Part No.	Type
5/2-way valve, single solenoid		
Can be changed to 3/2-way valve	547017	VSNB-FC-M52-M-G14-P2
Cannot be changed to 3/2-way valve	547021	VSNB-F-M52-M-G14-P2
5/2-way valve, double solenoid		
Cannot be changed to 3/2-way valve	547022	VSNB-F-B52-M-G14-P2

1) Solenoid coil must be ordered separately → 30

Ordering data – Solenoid valves with pilot valve

Description	Part No.	Type
5/2-way valve, single solenoid		
Can be changed to 3/2-way valve	547026	VSNB-FC-M52-MH-G14-1A1
Cannot be changed to 3/2-way valve	547028	VSNB-F-M52-MH-G14-1A1
5/2-way valve, double solenoid		
Cannot be changed to 3/2-way valve	547029	VSNB-F-B52-H-G14-1A1

Solenoid valves VSNB, Namur

Accessories

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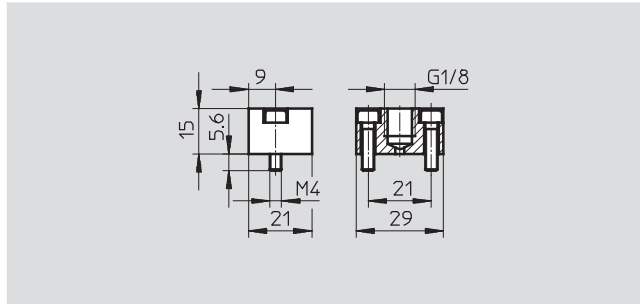
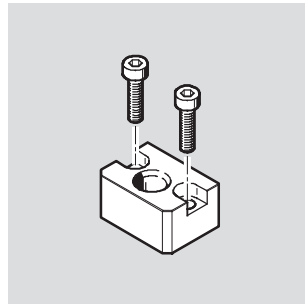
Control plate VAOP

Material:

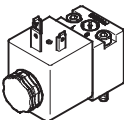
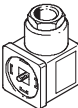
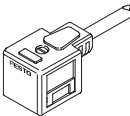
Wrought aluminium alloy

Function:

The basic valve can be switched with a pneumatic signal via the control plate.



Ordering data		Part No.	Type
	Weight [g]		
For mounting on the basic valve	21	547025	VAOP-C2-P2

Ordering data					
	Nominal operating voltage	Cable length	Signal status display	Part No.	Type
Pilot valve with solenoid coil					
	24 V DC	–	–	546019	MDH-3/2-24VDC-PI
	110 V AC	–	–	546020	MDH-3/2-110VAC-PI
	230 V AC	–	–	546021	MDH-3/2-230VAC-PI
Plug socket					
	–	–	–	34583	MSSD-C
Plug socket with cable					
	24 V DC	2,5 m	LED	30931	KMC-1-24DC-2,5-LED
	24 V DC	5 m	LED	30933	KMC-1-24DC-5-LED
	24 V DC	10 m	LED	193459	KMC-1-24-10-LED
	Up to 230 A DC	2,5 m	–	30932	KMC-1-230AC-2,5
	Up to 230 A DC	5 m	–	30934	KMC-1-230AC-5
Illuminating seal					
	12 ... 24 V DC/AC	–	–	19145	MC-LD-12-24DC
	230 V DC/AC	–	–	19146	MC-LD-230AC
Push-in fitting QS					
	–	–	–	➔ Internet: quick star	
Silencer U					
	–	–	–	➔ Internet: u	

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