








Solenoid valves, Namur



# Solenoid valves, Namur

Product range overview

**FESTO**

Function	Version	Type	Nominal size [mm]	Standard nominal flow rate [l/min]	Pneumatic connection	Pressure range [bar]	Ambient temperature [°C]
5/2-way valves <sup>1)</sup>		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 <sup>2)</sup>	8	950	G1/4	2,5 ... 8	-10 ... +50
		VSNB-...-P2 <sup>2)</sup>	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

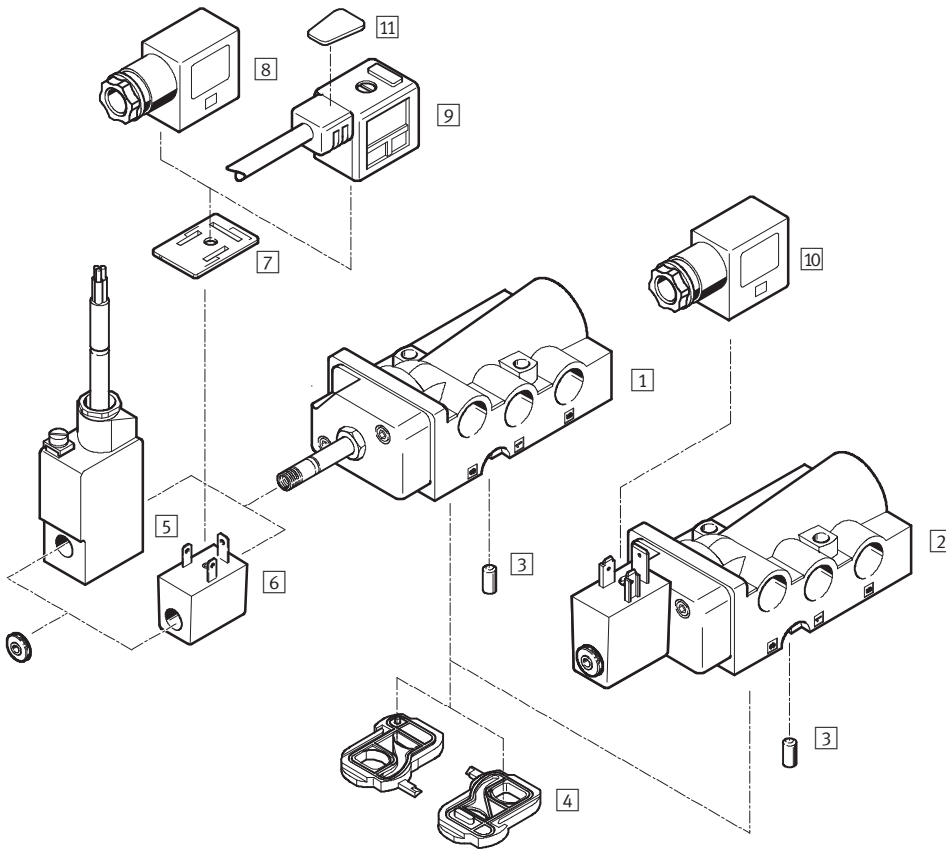
Product range overview

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

1) Solenoid coil must be ordered separately

# Solenoid valves NVF3, Namur

Peripherals overview



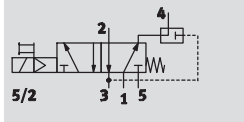
Solenoid valves and accessories		
	Brief description	→ Page/Internet
Solenoid valves		
1	NVF3-MOH-5/2K-1/4-EX	Solenoid valve for F solenoid coil
2	NVF3-MOH-5/2K-1/4-IA-EX	Solenoid valve mounted with intrinsically safe solenoid coil, ignition protection type ia = intrinsically safe
Accessories		
3	Coding 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

## Technical data

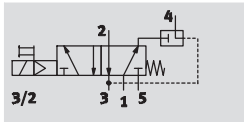
Function<sup>1)</sup>


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			
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			
Nominal size	[mm]	7		
Standard nominal flow rate	1 → 2, 2 → 3	[l/min]	900	
	Exhaust air return	[l/min]	150	
	2 → 4			
C value	[l/sbar]	4.2		
Pneumatic connection	1, 3, 5	G1/4		
	2, 4	Namur port pattern		
	Pilot exhaust port	M5		
	84			
Product weight	[g]	280	360	

Operating and environmental conditions			Solenoid valve with F coil of choice	Solenoid valve with mounted solenoid coil
Operating medium	Filtered compressed air, lubricated or unlubricated, grade of filtration 40 µm			
Operating pressure range	[bar]	2 ... 10		
ATEX ambient temperature	-5 °C ≤ Ta ≤ +40 °C			
Temperature of medium	F coil	[°C]	-5 ... +40	
	F coil explosion-proof	[°C]	-5 ... +40	
ATEX symbol			II 2 G c T6	II 2 G c T6, II 2 D c 40 °C
			II 2 D c 40 °C	II 2 G EEx ia IIc T6, II 2 D Ex iaD IP65 T80 °C
CE symbol	In accordance with EU explosion protection directive (ATEX)			
Corrosion resistance class CRC	1 <sup>1)</sup>			

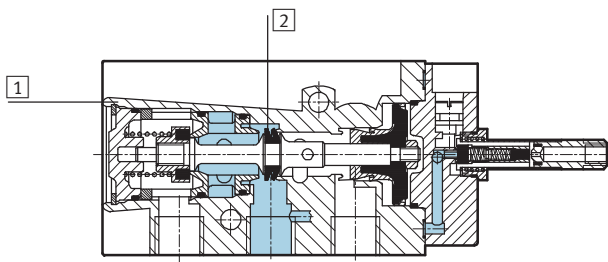
1) Corrosion resistance class 1 according to Festo standard 940 070  
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

# Solenoid valves NVF3, Namur

Technical data

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

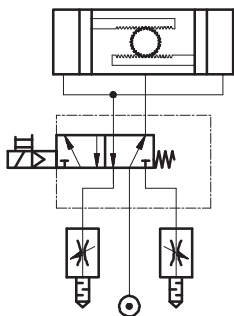
## Materials



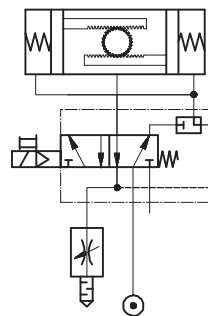
1	Housing	Die-cast aluminium, anodised
2	Seals	Polyamide
		Contains paint wetting impairment substances

## Sample circuit

5/2-way valve



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



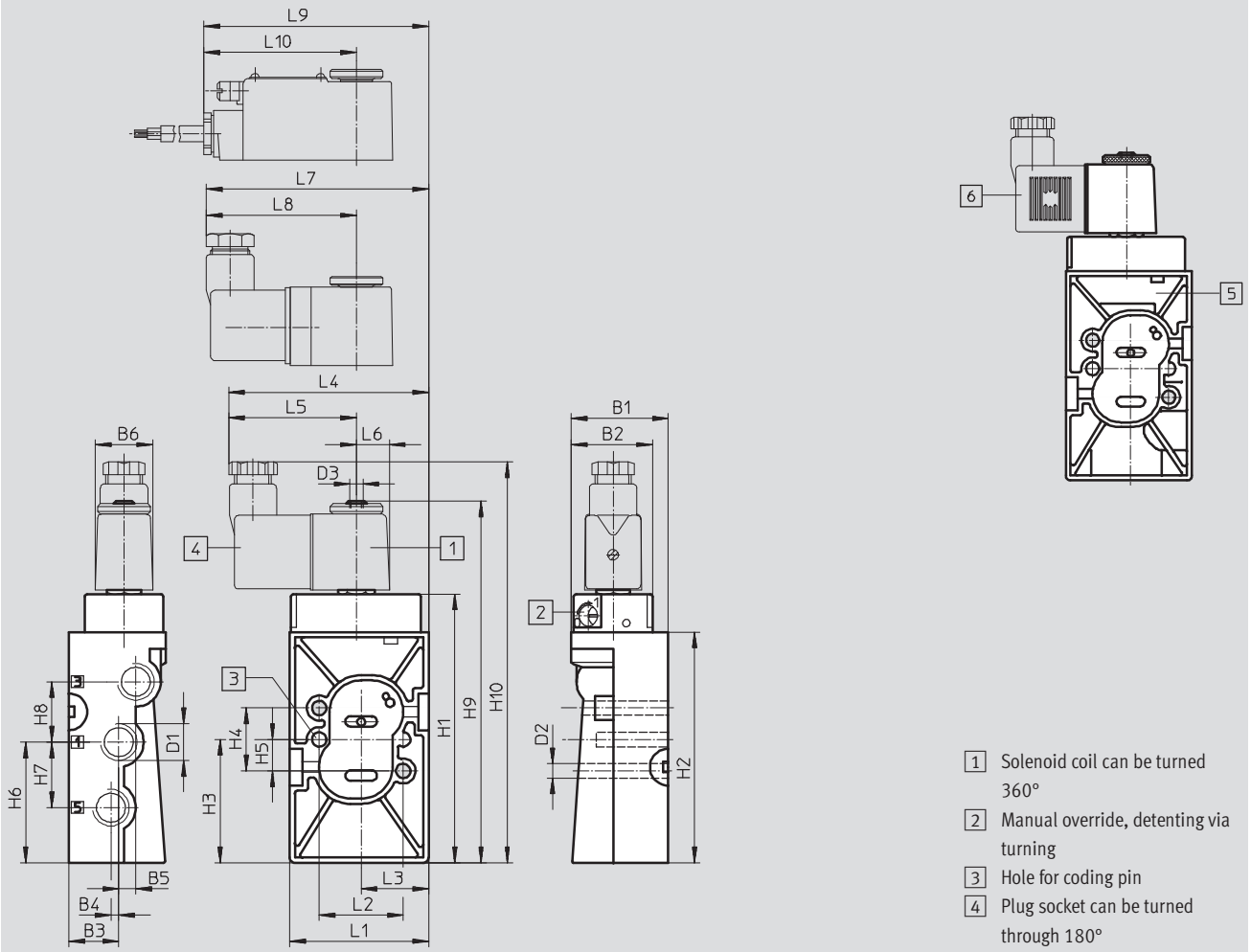
# Solenoid valves NVF3, Namur

Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)



- 1 Solenoid coil can be turned 360°
- 2 Manual override, detenting via turning
- 3 Hole for coding pin
- 4 Plug socket can be turned through 180°

Type	B1	B2	B3 ±0.1	B4 ±0.1	B5 ±0.1	B6	D1	D2 ∅	D3	H1	H2	H3 ±0.15	H4 ±0.15	H5 ±0.1	H6 ±0.1
NVF3-...	37	31	19	3	6.5	22	G¼	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 coil<sup>1)</sup>

Part No. Type

535987 NVF3-MOH-5/2-K-¼-EX

Solenoid valve mounted with intrinsically safe solenoid coil

Part No. Type

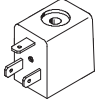


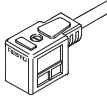

535988 NVF3-MOH-5/2-K-¼-IA-EX

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


# Solenoid valves NVF3, Namur

Accessories

**FESTO**

Ordering data				
	Operating voltage	Cable length	Part No.	Type
<b>Solenoid coil F without plug socket</b> <span style="float: right;">Technical data → Internet: msfg, msfw</span>				
	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
<b>Plug socket for screw terminal connection</b> <span style="float: right;">Technical data → Internet: mssd</span>				
	–	–	34431	MSSD-F
	–	–	539710	MSSD-F-M16
<b>Plug socket for insulation displacement connection</b> <span style="float: right;">Technical data → Internet: mssd</span>				
	–	–	192746	MSSD-F-S-M16
<b>Plug socket with cable</b> <span style="float: right;">Technical data → Internet: kmf-1</span>				
	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
<b>Illuminating seal</b> <span style="float: right;">Technical data → Internet: mf-ld</span>				
	12 ... 24 V DC/AC	–	19143	MF-LD-12-24DC
	230 V DC/AC	–	19144	MF-LD-230AC
<b>Inscription label</b> <span style="float: right;">Technical data → Internet: kmc</span>				
–	–	–	33362	KMC/F/V-BZ-35X <sup>1)</sup>

1) Scope of delivery 35 pieces

 **Note**

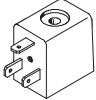





Valve/solenoid coil combinations made up of the basic valve NVF3-MOH-5/2-K-1/4-EX and the solenoid coil MSF...-OD must not be used in hazardous areas.

Only combinations with the approved solenoid coil MSF...-EX may be used here. **→ 9**



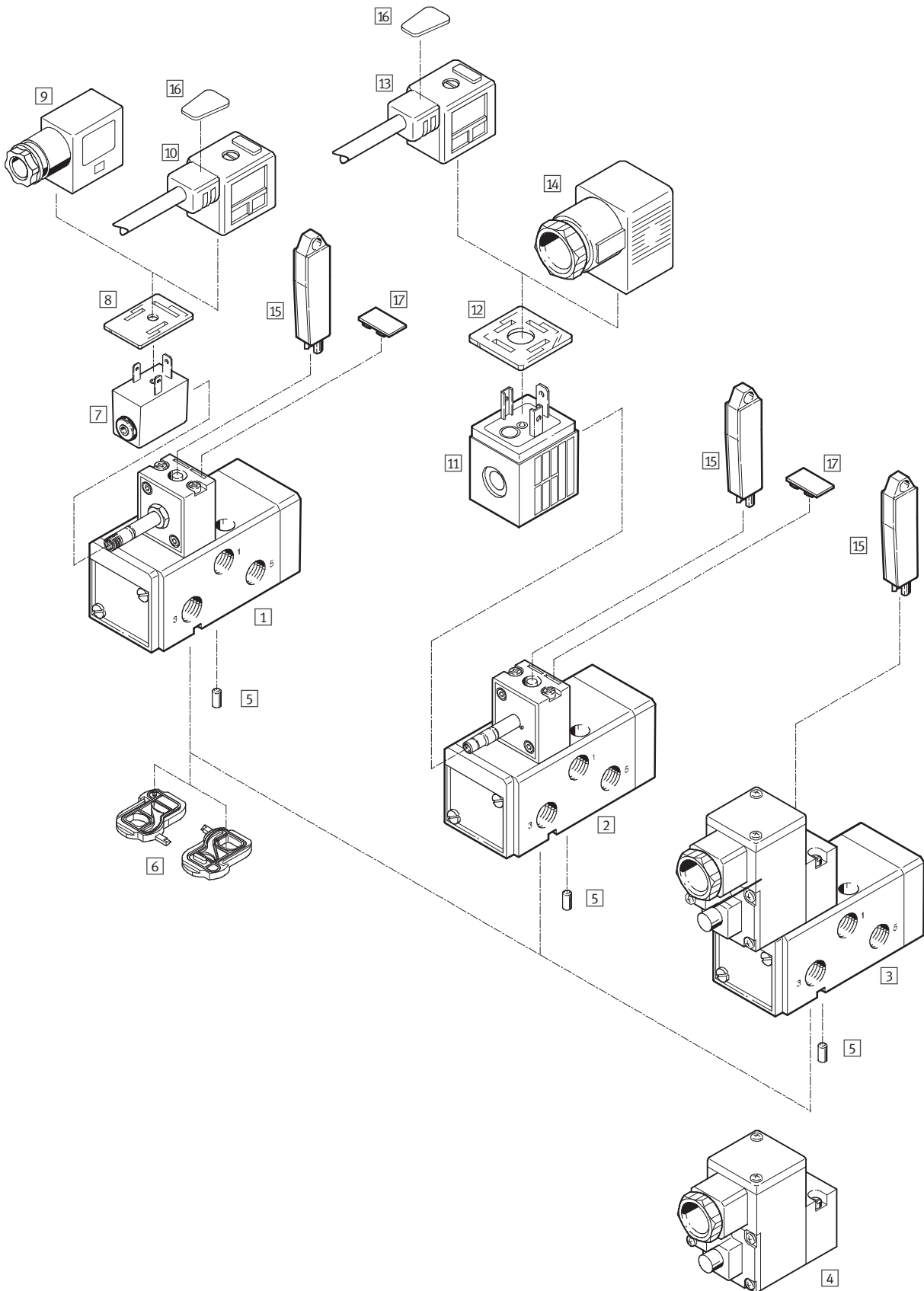
# Solenoid valves NVF3, Namur

Accessories for ATEX environment

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			
	–	–	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



# Solenoid valves MFH, MN1H, MGTBH, Namur

Peripherals overview

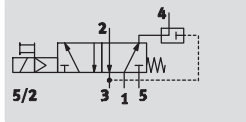
Solenoid valves and accessories		
	Brief description	→ Page/Internet
Solenoid valves		
1	MFH-5/2K-FR-NA	Basic valve with pilot control valve for F solenoid coil
2	MN1H-5/2K-FR-NA	Basic valve with pilot control valve for N1 solenoid coil
3	MGTBH-5/2K-FR-...-NA	Basic valve with pilot control valve, solenoid coil and socket
Pilot valve		
4	MGTBH-3/2-1.2-...	Pilot valve with solenoid coil and threaded connector
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	
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	
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	
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

## Technical data

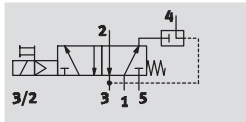
### Function<sup>1)</sup>


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	G¼
	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 <sup>1)</sup>	3

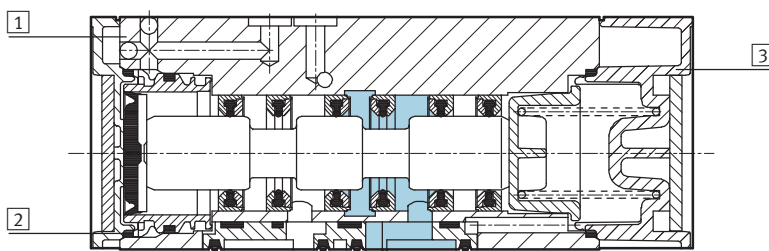
1) Corrosion resistance class 3 according to Festo standard 940 070  
Components with heavy corrosion exposure. Externally visible components in direct contact with normal industrial atmosphere or media such as solvents and cleaning agents, where the surface requirement is predominantly functional.

# Solenoid valves MFH, Namur

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	

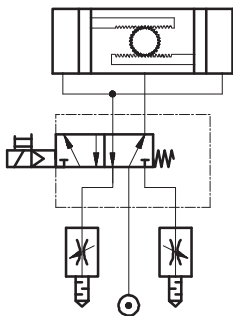
## Materials



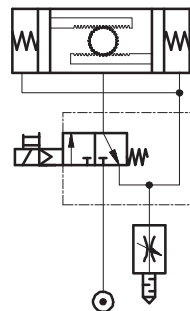
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

## Connection examples

5/2-way valve



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



# Solenoid valves MFH, Namur

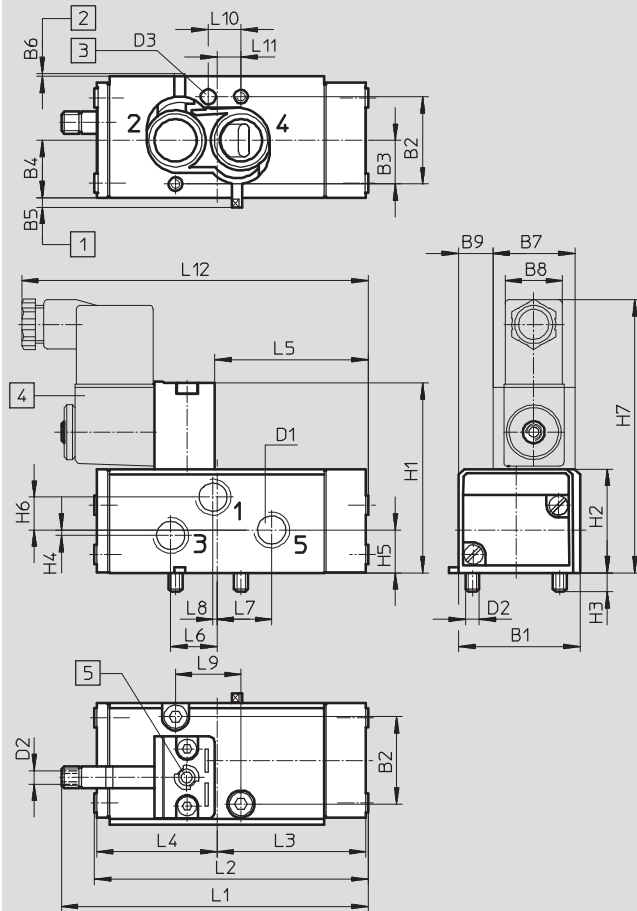
Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

### Solenoid valve MFH



- 1 Seal plate set for 5/2-way valve function
- 2 Seal plate set for 3/2-way valve function
- 3 Hole for coding pin
- 4 Solenoid coil is 360° rotatable
- 5 Manual override

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	G $\frac{1}{4}$	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 coil<sup>1)</sup>

Part No. Type

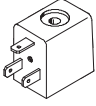

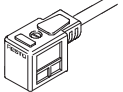
**183973 MFH-5/2K-FR-NA**

1) Solenoid coil must be ordered separately → 15

# Solenoid valves MFH, Namur

Accessories

**FESTO**

Ordering data				
	Operating voltage	Cable length	Part No.	Type
<b>F solenoid coil without plug socket</b> <span style="float: right;">Technical data → Internet: msfg, msfw</span>				
	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
<b>Luminescent seal</b> <span style="float: right;">Technical data → Internet: mf-ld</span>				
	12 ... 24 V DC/AC	–	19143	MF-LD-12-24DC
	230 V DC/AC	–	19144	MF-LD-230AC
<b>Plug sockets, plug sockets with cable</b> <span style="float: right;">Technical data → Internet: mssd, kmf-1</span>				
	–	–	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	
<b>Manual override tool</b> <span style="float: right;">Technical data → Internet: ahb</span>				
–	–	157651	AHB-MD/MF/MV	
<b>Inscription label</b> <span style="float: right;">Technical data → Internet: kmc</span>				
–	–	33362	KMC/F/V-BZ-35X <sup>1)</sup>	

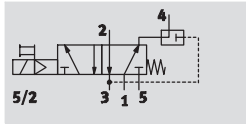
1) Scope of delivery 35 pieces

# Solenoid valves MN1H, Namur

Technical data

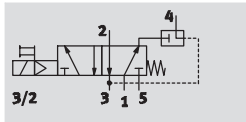
Function<sup>1)</sup>


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	G¼
	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 <sup>1)</sup>	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.

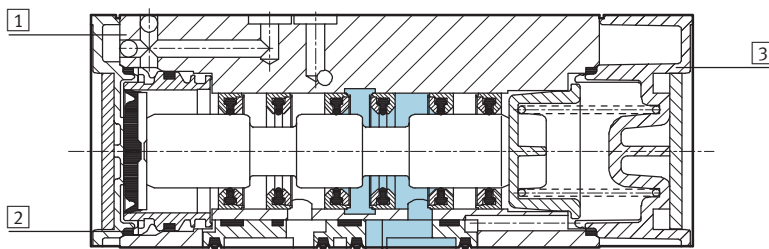


# Solenoid valves MN1H, Namur

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	

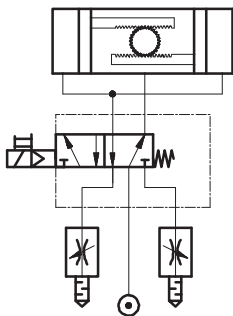
## Materials



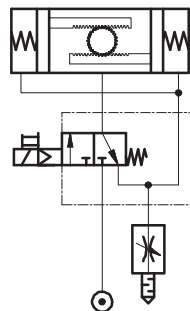
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

## Connection examples

5/2-way valve



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



# Solenoid valves MN1H, Namur

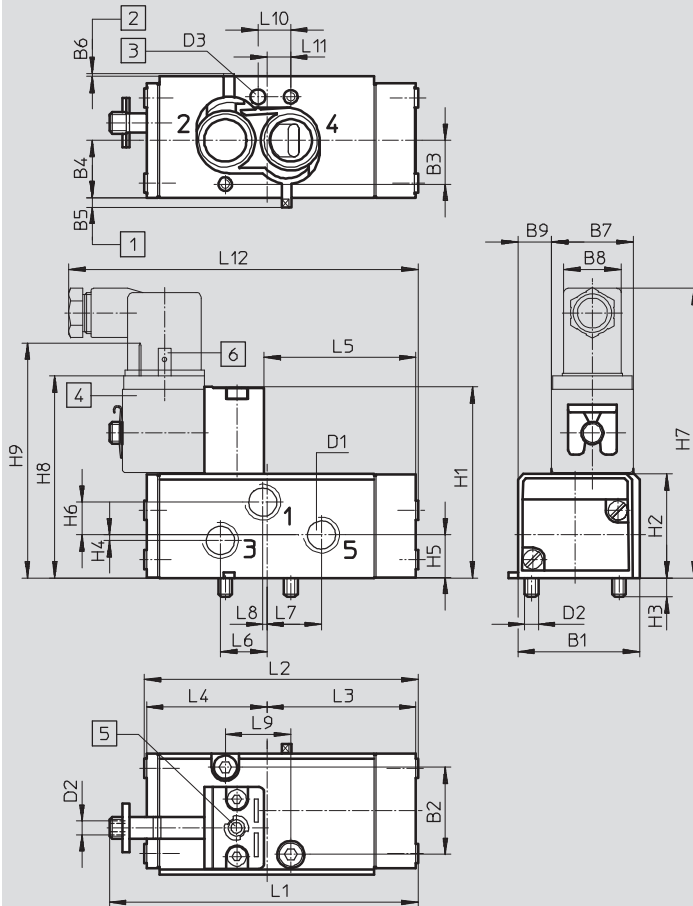
Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

### Solenoid valve MN1H



- 1 Seal plate set for 5/2-way valve function
- 2 Seal plate set for 3/2-way valve function
- 3 Hole for coding pin
- 4 Solenoid coil is 360° rotatable
- 5 Manual override
- 6 Connection for plug socket to DIN 43650, form A

Type	B1	B2	B3	B4	B5	B6	B7	B8	B9	D1	D2	D3	H1	H2	H3	H4	H5
MN1H-...	44.5	32	16	21	3.5	1	30	20	12.25	G $\frac{3}{4}$	M5	5.5x4 Ø	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 coil<sup>1)</sup>

Part No. Type



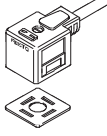
**183974 MN1H-5/2K-FR-NA**

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 <span style="float: right;">Technical data → Internet: msn1g</span>				
	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 <span style="float: right;">Technical data → Internet: mc-ld</span>				
	12 ... 24 V DC/AC	–	19145	MC-LD-12-24DC
	230 V DC/AC	–	19146	MC-LD-230AC
Plug socket, plug socket with cable <span style="float: right;">Technical data → Internet: mssd, kmc</span>				
	–	–	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 <span style="float: right;">Technical data → Internet: ahb</span>				
–	–	157651	AHB-MD/MF/MV	
Inscription labels <span style="float: right;">Technical data → Internet: kmc, ibs</span>				
–	–	33362	KMC/F/V-BZ-35X <sup>1)</sup>	
–	–	18182	IBS-9x20 <sup>2)</sup>	

1) Scope of delivery 35 pieces

2) Scope of delivery 20 pieces

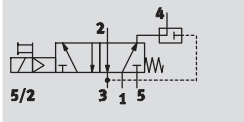
# Solenoid valves MGTBH, Namur

Technical data

FESTO

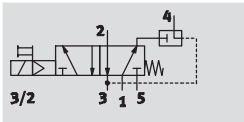
Function<sup>1)</sup>


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	G¼
	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 <sup>1)</sup>	2

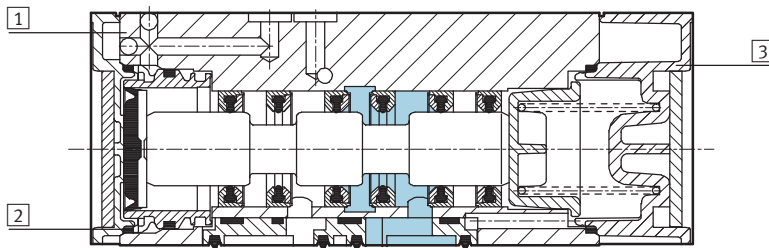
1) Corrosion resistance class 2 according to Festo standard 940 070  
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

# Solenoid valves MGTBH, Namur

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	

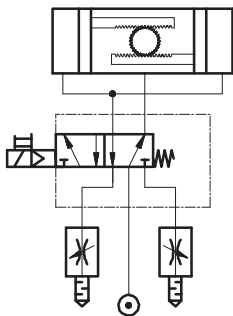
## Materials



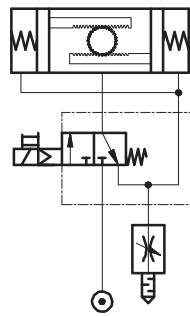
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

## Connection examples

5/2-way valve



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



# Solenoid valves MGTBH, Namur

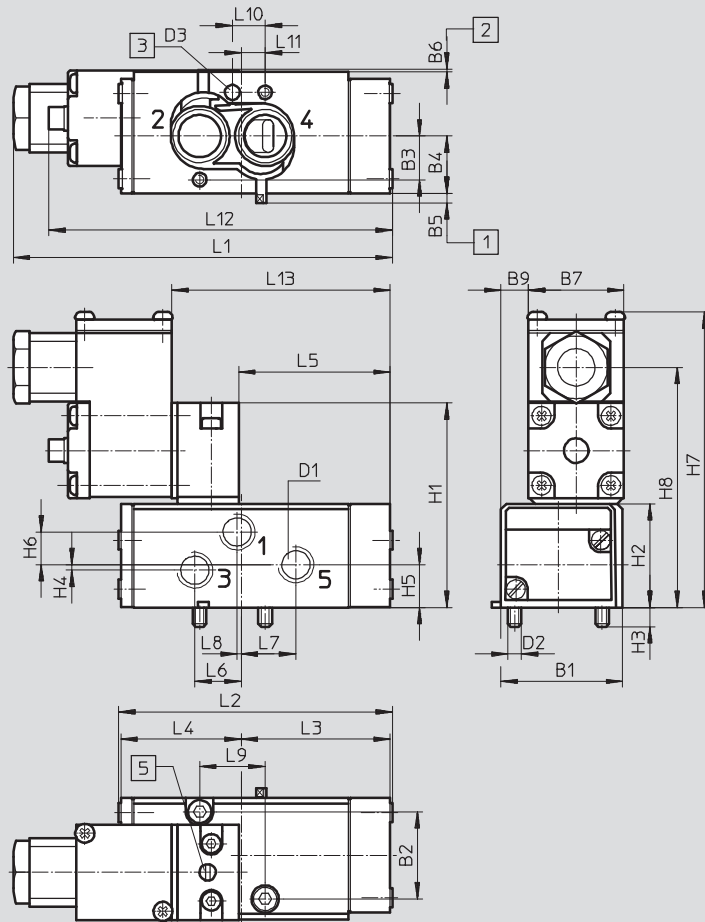
Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

### Solenoid valve MGTBH



- 1 Seal plate set for 5/2-way valve function
- 2 Seal plate set for 3/2-way valve function
- 3 Hole for coding pin
- 5 Manual override

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	G1/4	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

Technical data

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

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

Ordering data – Accessories				
	Operating voltage	Cable length	Part No.	Type
<b>Pilot valve</b> <span style="float: right;">Technical data → Internet: mgtbh</span>				
	24 V DC	–	<b>184105</b>	<b>MGTBH-3/2-1,2-24DC</b>
	110 V AC	–	<b>185246</b>	<b>MGTBH-3/2-1,2-110AC</b>
	230 V AC	–	<b>185248</b>	<b>MGTBH-3/2-1,2-230AC</b>
<b>Manual override tool</b> <span style="float: right;">Technical data → Internet: ahb</span>				
	–	–	<b>157651</b>	<b>AHB-MD/MF/MV</b>
<b>Inscription labels</b> <span style="float: right;">Technical data → Internet: ibs</span>				
	–	–	<b>18182</b>	<b>IBS-9x20<sup>1)</sup></b>

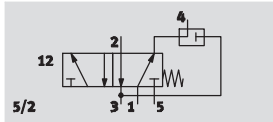
1) Scope of delivery 20 pieces

# Solenoid valves VSNB, Namur

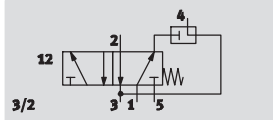
## Technical data


### Function


5/2-way valve, single solenoid<sup>1)</sup>




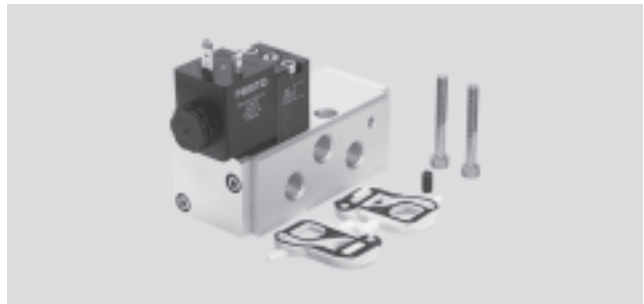
double solenoid



-  - 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	Basic valve without pilot valve
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	G¼		
	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 <sup>1)</sup>

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.

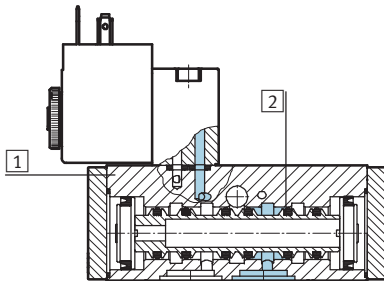


# Solenoid valves VSNB, Namur

Technical data

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, 230 V	Pull: 6.6 W 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	

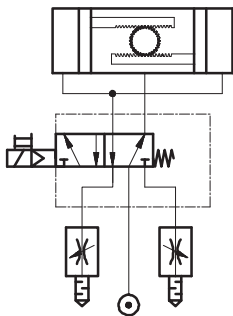
## Materials



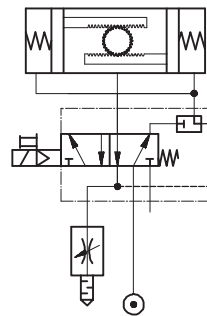
1	Housing	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber, hydrogenated nitrile rubber
-	Screws	High-alloy stainless steel
Note on materials		Contains paint wetting impairment substances

## 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

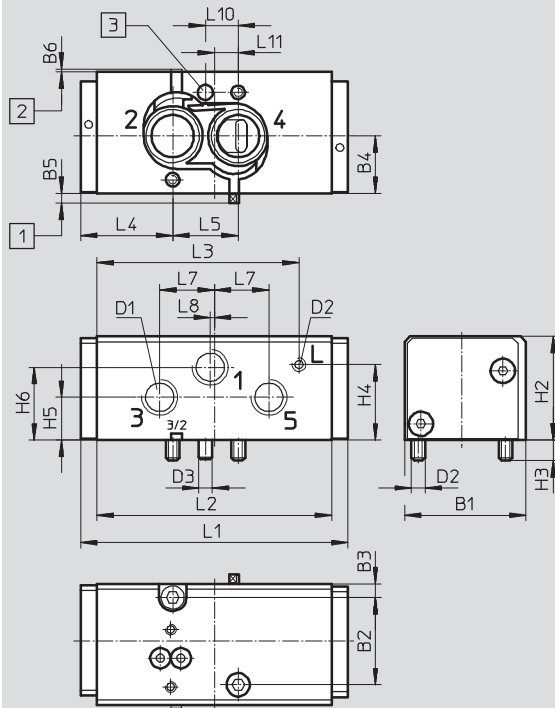
Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Basic valve, single solenoid



- 1 Seal plate set to 5/2-way valve function    
 2 Seal plate set to 3/2-way valve function    
 3 Hole for coding pin

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

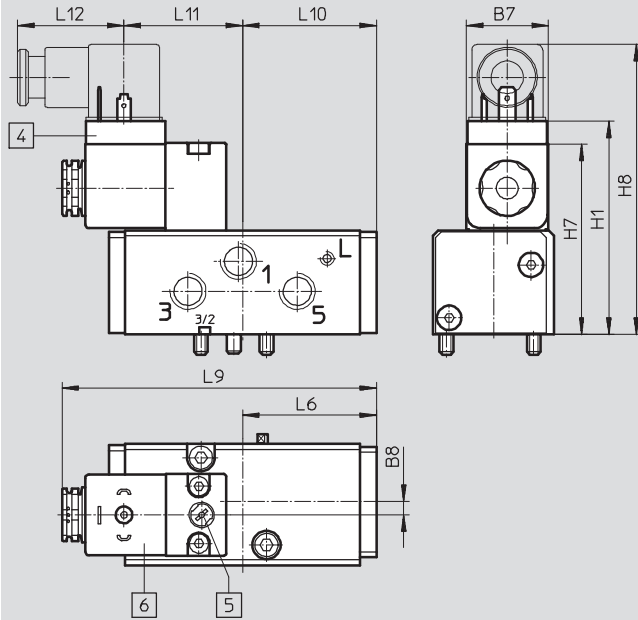
# Solenoid valves VSNB, Namur

Technical data

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Solenoid valve, single solenoid



- 4 Pilot valve
- 5 Manual override
- 6 Plug socket connection pattern to EN 175301-803, type A

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

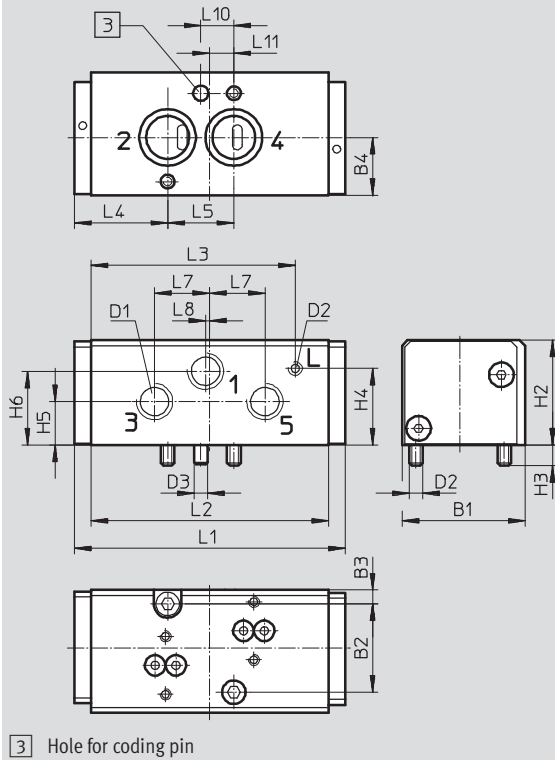
Technical data

FESTO

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Basic valve, double solenoid



Type	B1	B2	B3	B4	D1	D2	D3 ∅	H2	H3	H4	H5
VSNB-...	44.5	32	5	21	G $\frac{1}{4}$	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

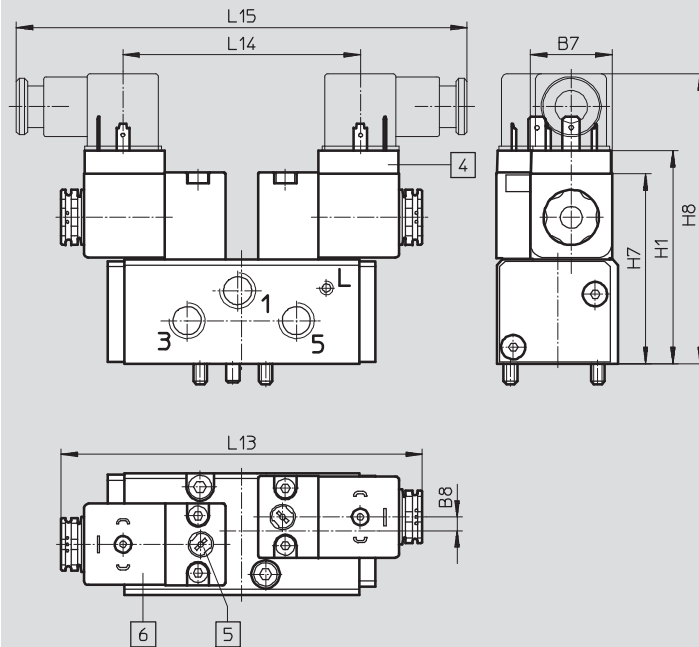
# Solenoid valves VSNB, Namur

Technical data

## Dimensions

Download CAD data → [www.festo.com](http://www.festo.com)

Solenoid valve, double solenoid



- 4 Pilot valve
- 5 Manual override
- 6 Plug socket connection pattern to EN 175301-803, type A

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 valve<sup>1)</sup>

Description	Part No.	Type
<b>5/2-way valve, single solenoid</b>		
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
<b>5/2-way valve, double solenoid</b>		
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
<b>5/2-way valve, single solenoid</b>		
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
<b>5/2-way valve, double solenoid</b>		
Cannot be changed to 3/2-way valve	547029	VSNB-F-B52-H-G14-1A1

# Solenoid valves VSNB, Namur

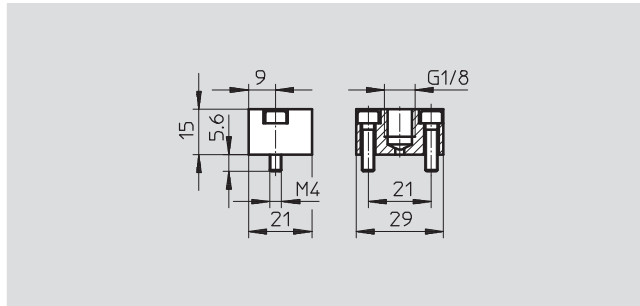
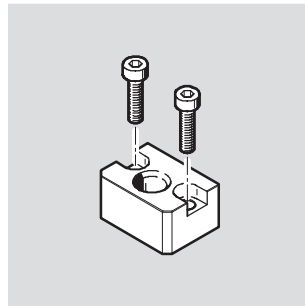
Accessories

FESTO

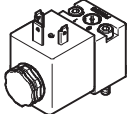
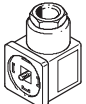
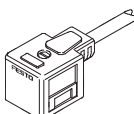



## Control plate VAOP

Material:  
Wrought aluminium alloy

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



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

Ordering data				
	Nominal operating voltage	Cable length	Signal status display	Part No. Type
<b>Pilot valve with solenoid coil</b>				
	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
<b>Plug socket</b> <span style="float: right;">Technical data → Internet: mssd</span>				
	–	–	–	34583 MSSD-C
<b>Plug socket with cable</b> <span style="float: right;">Technical data → Internet: kmc</span>				
	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
<b>Illuminating seal</b>				
	12 ... 24 V DC/AC	–	–	19145 MC-LD-12-24DC
	230 V DC/AC	–	–	19146 MC-LD-230AC
<b>Push-in fitting QS</b>				
	–	–	–	→ Internet: quick star
<b>Silencer U</b>				
	–	–	–	→ Internet: u