

- Namur port pattern
- Simple flange mounting to actuators for process engineering
- Can be changed from 5/2 to 3/2-way function by exchanging the seal plate

Specified types in accordance with ATEX directive for potentially explosive atmospheres
→ www.festo.com/en/ex








Solenoid valves, Namur

Product range overview



Standard directional control valves
Namur

2.1

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	-10 ... +60 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

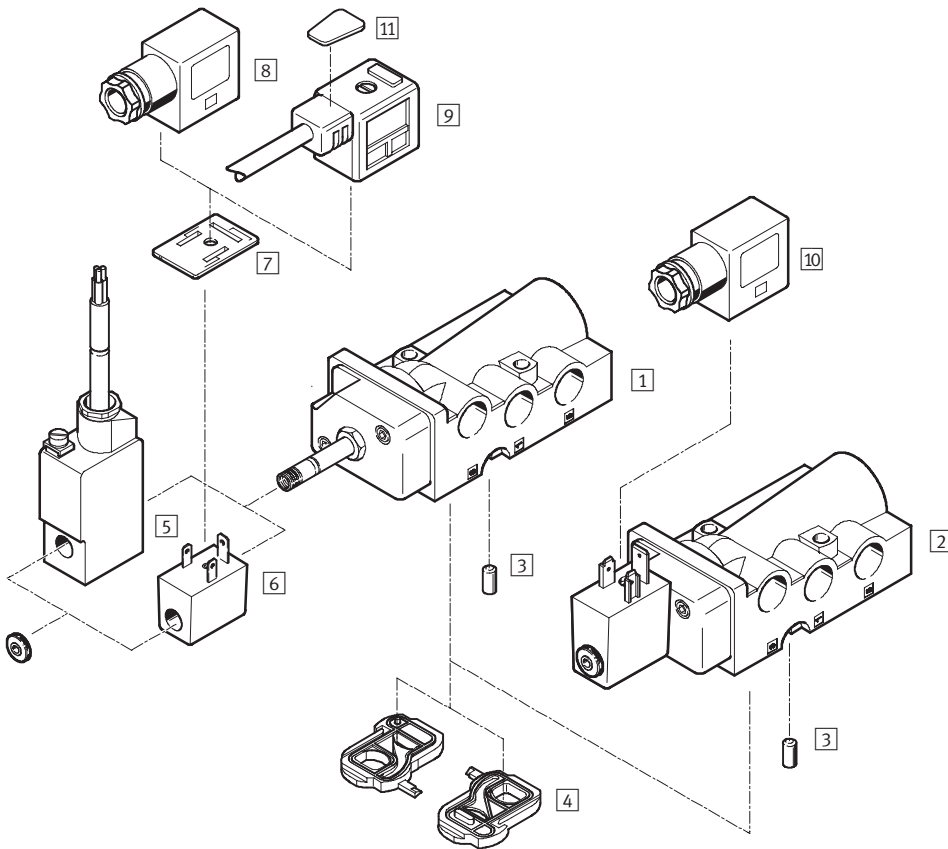
Product range overview

Type	Solenoid coil	Operating voltage range		Ignition protection type			→ Page
		[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	-	-	-	7 / 2.1-5
	MSFG-...-EX ¹⁾ ; MSFW-...-EX ¹⁾	24	24, 110, 230	■	-	-	
	MSFG-...-M-EX ¹⁾ ; MSFW-...-M-EX ¹⁾	24	24, 110, 230	-	■	-	
NVF3-...-IA-EX	Included in scope of delivery	24	-	-	-	■	
MFH	MSFG-...-OD ¹⁾ ; MSFW-...-OD ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	-	-	-	7 / 2.1-12
MN1H	MSFG-...-OD ¹⁾ ; MSFW-...-OD ¹⁾	24	110, 230	-	-	-	7 / 2.1-16
MGTBH	Included in scope of delivery	24	110, 230	-	-	-	7 / 2.1-20
VSNB- ... -A1	Included in scope of delivery	24	-	-	-	-	7 / 2.1-23
VSNB- ... -P2	MDH-...-PI ¹⁾	24	110, 230	-	-	-	

1) Solenoid coil must be ordered separately

Solenoid valves NVF3, Namur

Peripherals overview



Solenoid valves and accessories		
	Brief description	→ Page
Solenoid valves		
1	NVF3-MOH-5/2K-1/4-EX	7 / 2.1-5
2	NVF3-MOH-5/2K-1/4-IA-EX	
Accessories		
3	Coding pin	–
4	Seal plate	–
5	Solenoid coil MSFG-...-M-EX and MSFW-...-M-EX	7 / 2.1-8
6	Solenoid coil MSFG-...-EX and MSFW-...-EX	
7	Illuminating seal MF-LD	
8	Plug socket MSSD-F-M16	
9	Plug socket with cable KMF	
10	Plug socket MSSD-V-M16	
11	Inscription labels KMC/F/V-BZ	

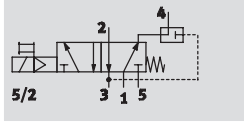
Solenoid valves NVF3, Namur



Technical data

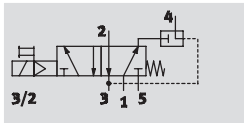
Function¹⁾

5/2-way valve



3/2-way valve

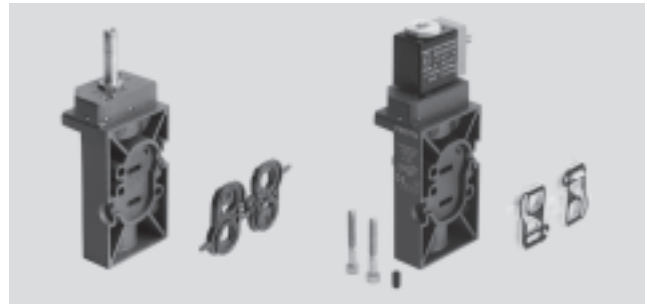
with exhaust air return



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

Pressure
2 ... 10 bar

Temperature range
-10 ... +60 °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	2 → 4 [l/min]	150	
C value	[l/sbar]	4.2	
Pneumatic connection	1, 3, 5	G1/4	
	2, 4	Namur port pattern	
	Pilot exhaust port 84	M5	
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]	-10 ... +60	
	F coil explosion-proof [°C]	-5 ... +40	
ATEX symbol		II 2 G c T6 II 2 D c 40 °C	II 2 G c T6, 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 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.

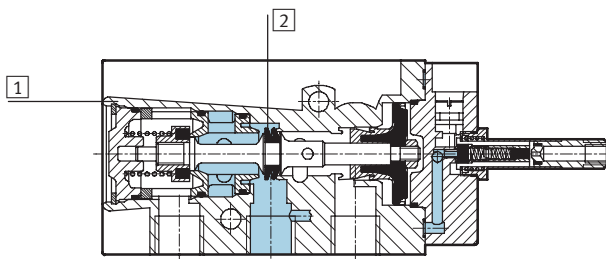
Solenoid valves NVF3, Namur

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

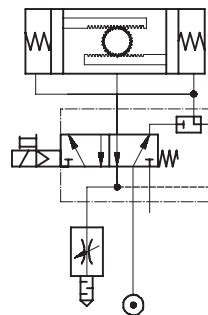
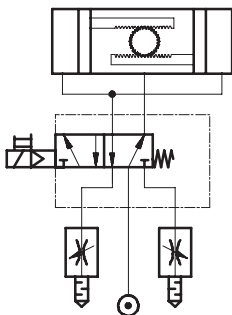


1	Housing	Die-cast aluminium, anodised
2	Seals	Polyamide
		Contains paint wetting impairment substances

Sample circuit

5/2-way valve

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



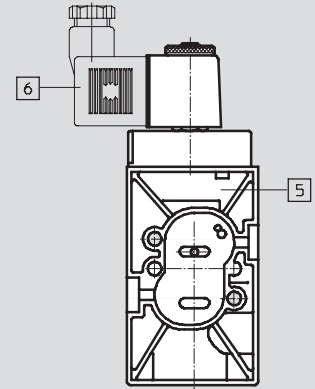
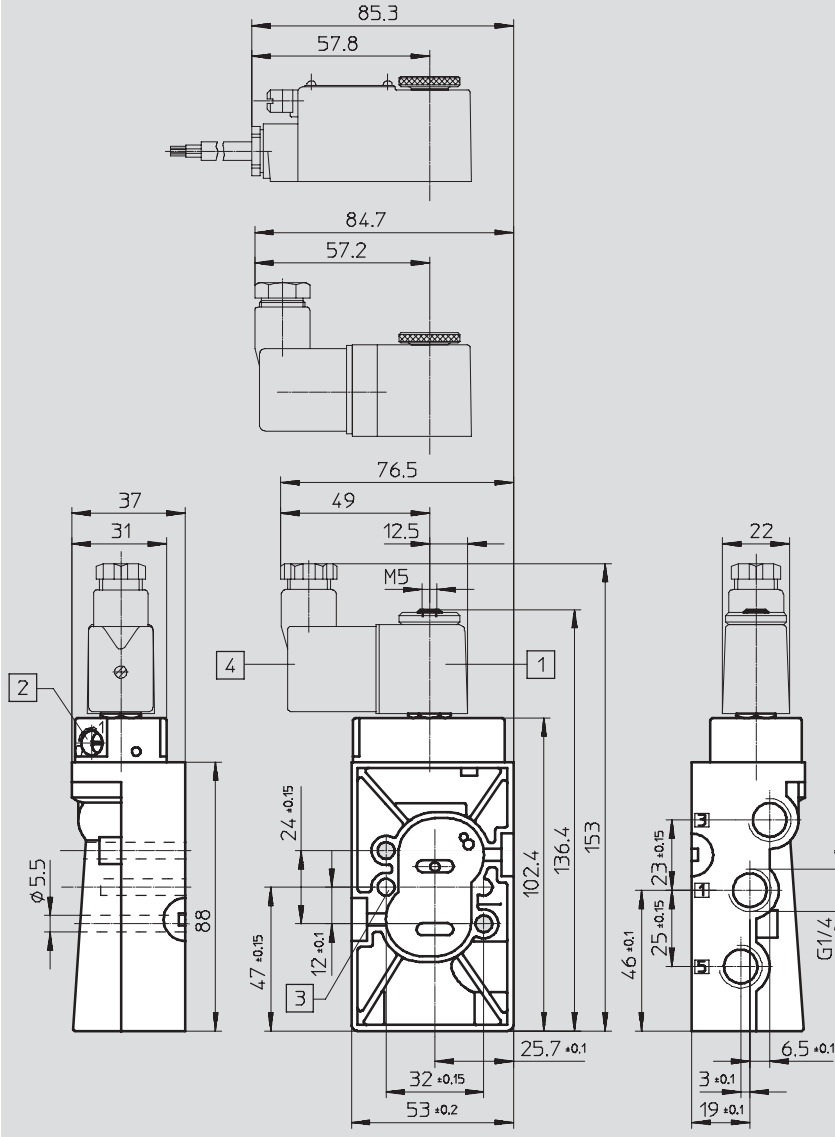
Solenoid valves NVF3, Namur

Technical data

FESTO

Dimensions

Download CAD data → www.festo.com/en/engineering



- 1 Solenoid coil can be turned 360°
- 2 Manual override can be repositioned by 180°
- 3 Hole for coding pin (included in scope of delivery)
- 4 Plug socket MSSD-F-M16, can be repositioned by 180°
- 5 Solenoid valve mounted with solenoid coil
- 6 Plug socket MSSD-V-M16, can be repositioned by 180°

Ordering data – Valves

Solenoid valve without coil¹⁾

Part No. Type

535 987 NVF3-MOH-5/2-K-1/4-EX

Solenoid valve mounted with intrinsically safe solenoid coil

Part No. Type

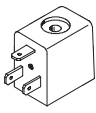


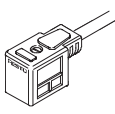

535 988 NVF3-MOH-5/2-K-1/4-IA-EX

¹⁾ Solenoid coil must be ordered separately → 7 / 2.1-8, explosion-proof solenoid coil → 7 / 2.1-9


Solenoid valves NVF3, Namur

Accessories

FESTO

Ordering data				Technical data → Volume 2
	Operating voltage	Cable length	Part No.	Type
Solenoid coil F without plug socket				
	12 V DC	–	34 410	MSFG-12DC-OD
	24 V DC	–	34 411	MSFG-24DC/42AC-OD
	42 V DC	–	34 413	MSFG-42DC-OD
	48 V DC	–	34 414	MSFG-48DC-OD
	24 V AC/50 ... 60 Hz	–	34 415	MSFW-24AC-OD
	42 V AC/50 ... 60 Hz	–	34 411	MSFG-24DC/42AC-OD
	48 V AC/50 ... 60 Hz	–	34 418	MSFW-48AC-OD
	110 V AC/50 ... 60 Hz	–	34 420	MSFW-110AC-OD
	230 V AC/50 ... 60 Hz	–	34 422	MSFW-230AC-OD
	240 V AC/50 ... 60 Hz	–	34 424	MSFW-240AC-OD
Plug socket for screw terminal connection				
	–	–	34 431	MSSD-F
	–	–	539 710	MSSD-F-M16
Plug socket for insulation displacement connection				
	–	–	192 746	MSSD-F-S-M16
Plug socket with cable				
	24 V DC	2.5 m	30 935	KMF-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30 936	KMF-1-230AC-2,5
	24 V DC	5 m	30 937	KMF-1-24DC-5-LED
	0 ... 240 V DC/AC		30 938	KMF-1-230AC-5
Illuminating seal				
	12 ... 24 V DC/AC	–	19 143	MF-LD-12-24DC
	230 V DC/AC	–	19 144	MF-LD-230AC
Inscription label				
–	–	–	33 362	KMC/F/V-BZ-35X ¹⁾

1) Scope of delivery 35 pieces

 Note

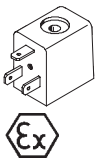



Valve/solenoid coil combinations made up of the basic valve NVF3-MOH-5/2-K-1/4-EX and the solenoid coil MSF...-OD must not be used in hazardous areas.

Only combinations with the approved solenoid coil MSF...-EX may be used here.
→ 7 / 2.1-9

Solenoid valves NVF3, Namur

Accessories for ATEX environment

FESTO

Ordering data				Technical data → www.festo.com
	Operating voltage	Cable length	Part No.	Type
Solenoid coil F for ignition protection type nA = non-sparking				
	24 V DC	–	536 931	MSFG-24-EX
	24 V AC/50 ... 60 Hz	–	536 932	MSFW-24-50/60-EX
	110 V AC/50 ... 60 Hz	–	536 933	MSFW-110-50/60-EX
	230 V AC/50 ... 60 Hz	–	536 934	MSFW-230-50/60-EX
Solenoid coil F for ignition protection type m = moulded encapsulation, moulded-in cable				
	24 V DC	1 m	535 619	MSFG-24DC-M-EX
	24 V DC	5 m	535 621	MSFG-24DC-K5-M-EX
	24 V AC/50 ... 60 Hz	1 m	535 623	MSFW-24AC-M-EX
	110 V AC/50 ... 60 Hz	1 m	535 622	MSFW-110AC-M-EX
	110 V AC/50 ... 60 Hz	5 m	535 624	MSFW-110AC-K5-M-EX
	230 V AC/50 ... 60 Hz	1 m	535 620	MSFW-230AC-M-EX
	230 V AC/50 ... 60 Hz	5 m	535 625	MSFW-230AC-K5-M-EX
	24 V DC	x m	538 215	MSFG-24DC-KX-M-EX
	24 V AC/50 ... 60 Hz	x m	538 218	MSFW-24AC-KX-M-EX
	110 V AC/50 ... 60 Hz	x m	538 217	MSFW-110AC-KX-M-EX
	230 V AC/50 ... 60 Hz	x m	538 216	MSFW-230AC-KX-M-EX
	Plug socket with screw terminal connection for solenoid coil MSF...-EX, ignition protection type nA = non-sparking			
	–	–	539 710	MSSD-F-M16
Plug socket with screw terminal connection for solenoid valve NVF3-MOH-5/2-K-1/4-IA-EX, ignition protection type ia = intrinsically safe				
	–	–	539 713	MSSD-V-M16

Standard directional control valves
Namur

2.1

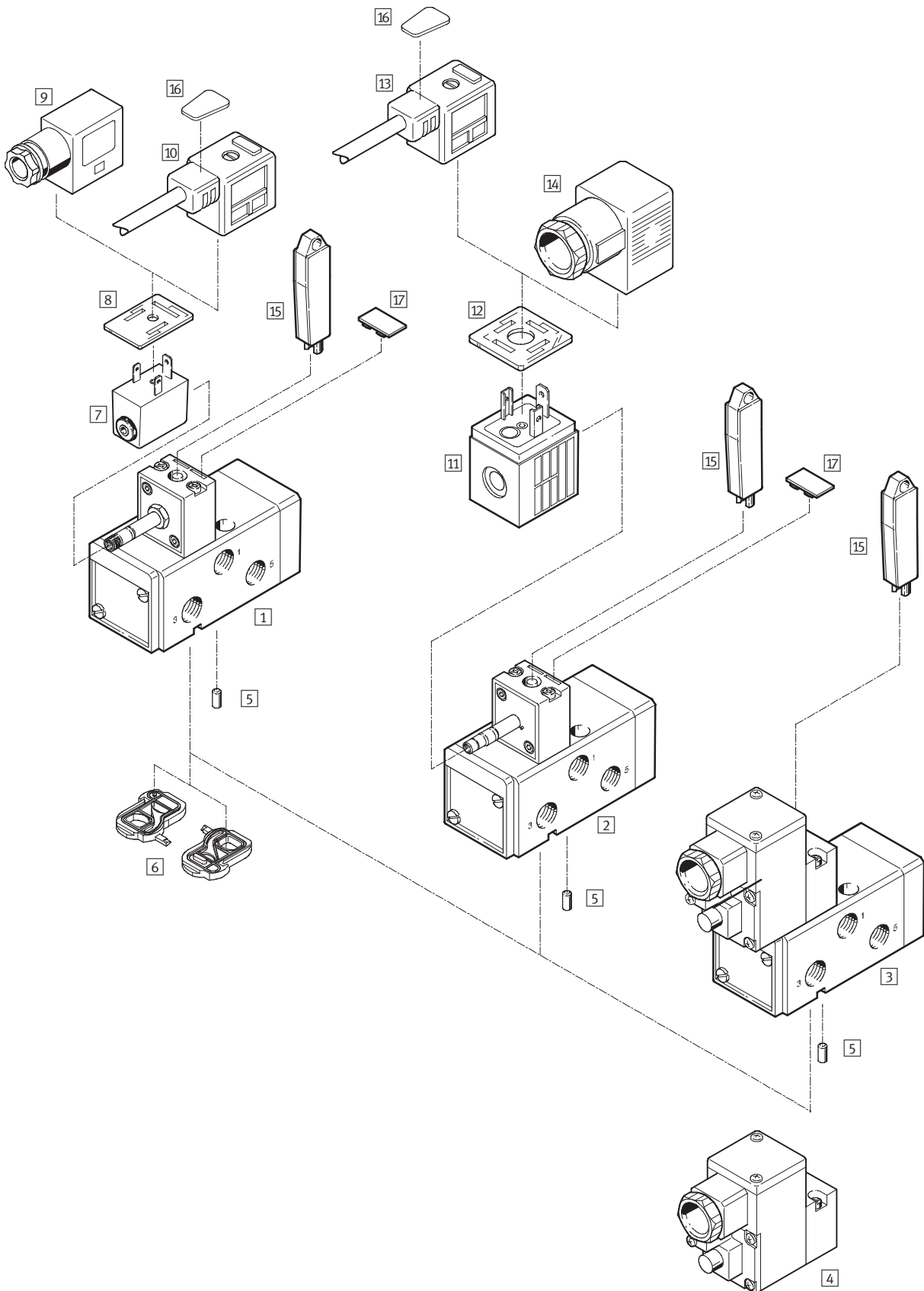
Solenoid valves MFH, MN1H, MGTBH, Namur

Peripherals overview



Standard directional control valves
Namur

2.1



Solenoid valves MFH, MN1H, MGTBH, Namur

Peripherals overview

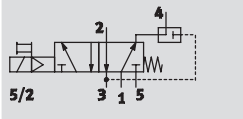
Solenoid valves and accessories		
	Brief description	→ Page
Solenoid valves		
1	MFH-5/2K-FR-NA	Basic valve with pilot control valve for F solenoid coil
2	MN1H-5/2K-FR-NA	Basic valve with pilot control valve for N1 solenoid coil
3	MGTBH-5/2K-FR-...-NA	Basic valve with pilot control valve, solenoid coil 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	7 / 2.1-15
8	Luminescent seal MF-LD	
9	Plug socket MSSD-F	
10	Plug socket with cable KMF	
11	Solenoid coil MSN1G / MSN1W	7 / 2.1-19
12	Luminescent seal MC-LD	
13	Plug socket with cable KMC	
14	Plug socket MSSD-C	
15	Manual override tool AHB	7 / 2.1-15
16	Inscription labels KMC/F/V-BZ	
17	Inscription labels IBS-9x17	

Solenoid valves MFH, Namur

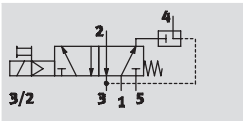
Technical data



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	<table border="0"> <tr> <td>1 → 2, 1 → 4</td> <td>1,000 l/min</td> </tr> <tr> <td>2 → 3, 4 → 5</td> <td>1,100 l/min</td> </tr> <tr> <td>Exhaust air return 2 → 4</td> <td>140 l/min</td> </tr> </table>	1 → 2, 1 → 4	1,000 l/min	2 → 3, 4 → 5	1,100 l/min	Exhaust air return 2 → 4	140 l/min
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	<table border="0"> <tr> <td>1, 3, 5</td> <td>G¹/₄</td> </tr> <tr> <td>2, 4</td> <td>Namur port pattern</td> </tr> </table>	1, 3, 5	G ¹ / ₄	2, 4	Namur port pattern		
1, 3, 5	G 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 40µm
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

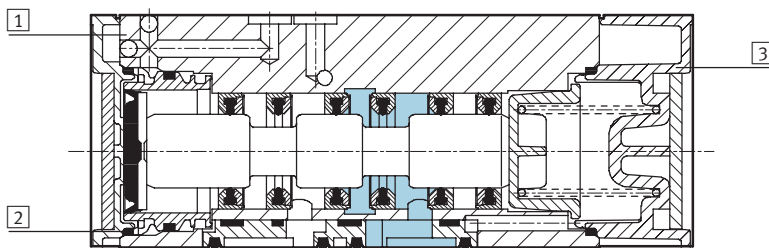
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Solenoid valves 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

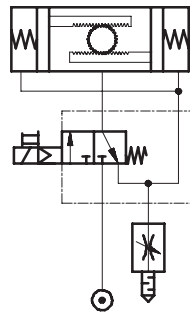
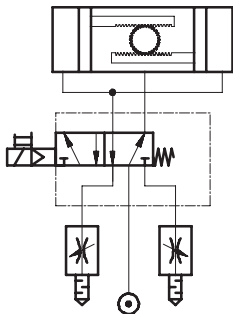


1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve

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



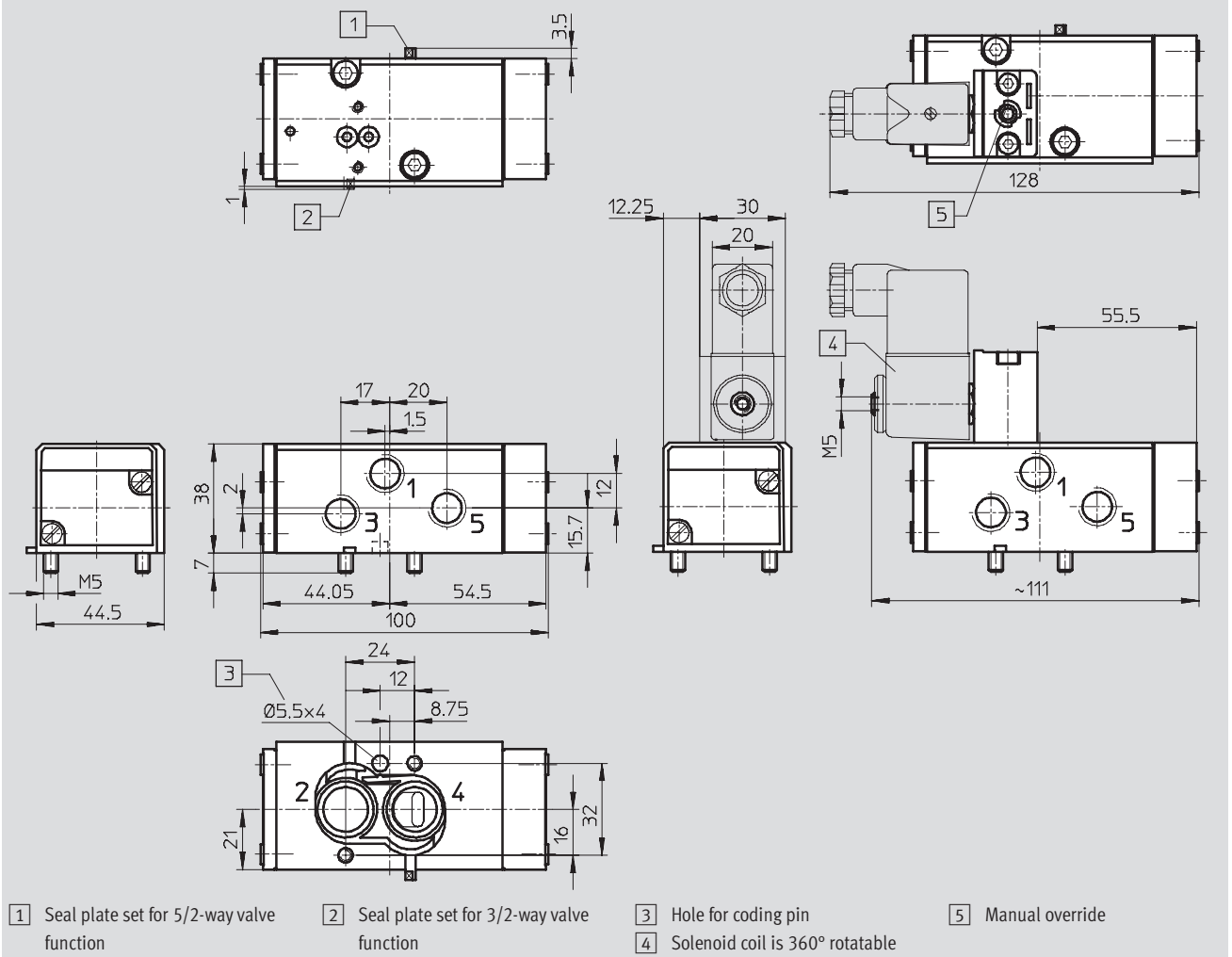
Solenoid valves MFH, Namur

Technical data



Dimensions Download CAD data → www.festo.com/en/engineering

Basic valve Solenoid valve MFH



Ordering data – Valve

Solenoid valve without coil¹⁾

Part No. Type

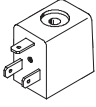

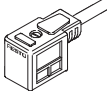
183 973 MFH-5/2K-FR-NA

1) Solenoid coil must be ordered separately → 7 / 2.1-15

Solenoid valves MFH, Namur

Accessories

FESTO

Ordering data			Technical data → Volume 2	
	Operating voltage	Cable length	Part No.	Type
F solenoid coil without plug socket				
	12 V DC	–	34 410	MSFG-12DC-OD
	24 V DC	–	34 411	MSFG-24DC/42AC-OD
	42 V DC	–	34 413	MSFG-42DC-OD
	48 V DC	–	34 414	MSFG-48DC-OD
	24 V AC/50 ... 60 Hz	–	34 415	MSFW-24AC-OD
	42 V AC/50 ... 60 Hz	–	34 411	MSFG-24DC/42AC-OD
	48 V AC/50 ... 60 Hz	–	34 418	MSFW-48AC-OD
	110 V AC/50 ... 60 Hz	–	34 420	MSFW-110AC-OD
	230 V AC/50 ... 60 Hz	–	34 422	MSFW-230AC-OD
	240 V AC/50 ... 60 Hz	–	34 424	MSFW-240AC-OD
Luminescent seal				
	12 ... 24 V DC/AC	–	19 143	MF-LD-12-24DC
	230 V DC/AC	–	19 144	MF-LD-230AC
Plug sockets, plug sockets with cable				
	–	–	34 431	MSSD-F
	24 V DC	2.5 m	30 935	KMF-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30 936	KMF-1-230AC-2,5
	24 V DC	5 m	30 937	KMF-1-24DC-5-LED
	0 ... 240 V DC/AC		30 938	KMF-1-230AC-5
	Plug socket with insulation displacement technology			
–	–	192 746	MSSD-F-S-M16	
Manual override tool				
–	–	157 651	AHB-MD/MF/MV	
Inscription label				
–	–	33 362	KMC/F/V-BZ-35X ¹⁾	

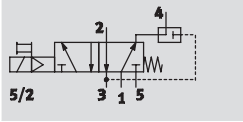
1) Scope of delivery 35 pieces

Solenoid valves MN1H, Namur

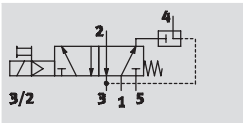
Technical data



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	<table border="0"> <tr> <td>1 → 2, 1 → 4</td> <td>1,000 l/min</td> </tr> <tr> <td>2 → 3, 4 → 5</td> <td>1,100 l/min</td> </tr> <tr> <td>Exhaust air return 2 → 4</td> <td>140 l/min</td> </tr> </table>	1 → 2, 1 → 4	1,000 l/min	2 → 3, 4 → 5	1,100 l/min	Exhaust air return 2 → 4	140 l/min
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	<table border="0"> <tr> <td>1, 3, 5</td> <td>G$\frac{1}{4}$</td> </tr> <tr> <td>2, 4</td> <td>Namur port pattern</td> </tr> </table>	1, 3, 5	G $\frac{1}{4}$	2, 4	Namur port pattern		
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 40µm
Operating pressure range	2 ... 10 bar
Ambient temperature	-10 ... +50 °C
Temperature of medium	-10 ... +50 °C
Corrosion resistance class CRC ¹⁾	3

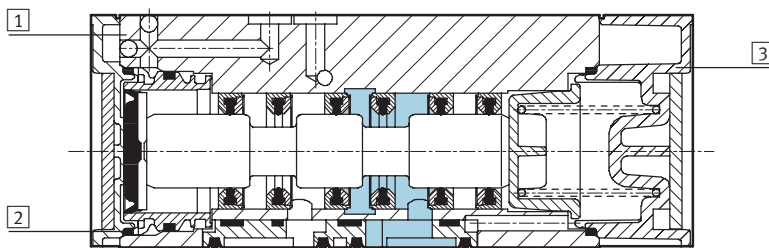
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Solenoid valves 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

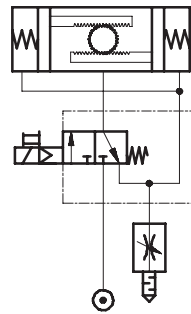
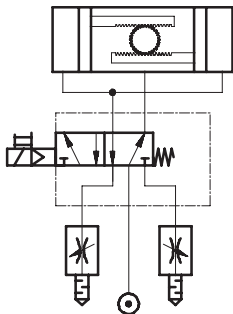


1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve

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



Solenoid valves MN1H, Namur

Technical data



Standard directional control valves
Namur

2.1

Dimensions Download CAD data → www.festo.com/en/engineering

Basic valve 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 EN 175 301-803, form A



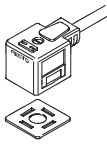
Ordering data – Valve	
Solenoid valve without coil ¹⁾	
Part No.	Type
183 974	MN1H-5/2K-FR-NA

1) Solenoid coil must be ordered separately → 7 / 2.1-19

Solenoid valves MN1H, Namur

Accessories

FESTO

Ordering data				Technical data → Volume 2
	Operating voltage	Cable length	Part No.	Type
N1 solenoid coil without plug socket				
	24 V DC	–	123 060	MSN1G-24DC-OD
	110 V AC/50 ... 60 Hz	–	123 061	MSN1W-110AC-OD
	230 V AC/50 ... 60 Hz	–	123 062	MSN1W-230AC-OD
Luminescent seal				
	12 ... 24 V DC/AC	–	19 145	MC-LD-12-24DC
	230 V DC/AC	–	19 146	MC-LD-230AC
Plug socket, plug socket with cable				
	–	–	34 583	MSSD-C
	24 V DC	2.5 m	30 931	KMC-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30 932	KMC-1-230AC-2,5
	24 V DC	5 m	30 933	KMC-1-24DC-5-LED
	0 ... 240 V DC/AC		30 934	KMC-1-230AC-5
	Plug socket with insulation displacement technology			
–	–	192 748	MSSD-C-S-M16	
Manual override tool				
–	–	157 651	AHB-MD/MF/MV	
Inscription labels				
–	–	33 362	KMC/F/V-BZ-35X¹⁾	
–	–	18 182	IBS-9x20²⁾	

1) Scope of delivery 35 pieces

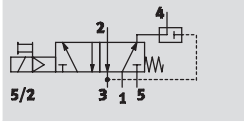
2) Scope of delivery 20 pieces

Solenoid valves MGTBH, Namur

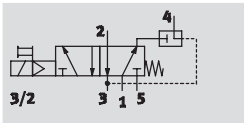
Technical data


FESTO

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	<table border="0"> <tr> <td>1 → 2, 1 → 4</td> <td>1,000 l/min</td> </tr> <tr> <td>2 → 3, 4 → 5</td> <td>1,100 l/min</td> </tr> <tr> <td>Exhaust air return 2 → 4</td> <td>140 l/min</td> </tr> </table>	1 → 2, 1 → 4	1,000 l/min	2 → 3, 4 → 5	1,100 l/min	Exhaust air return 2 → 4	140 l/min
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	<table border="0"> <tr> <td>1, 3, 5</td> <td>G¹/₄</td> </tr> <tr> <td>2, 4</td> <td>Namur port pattern</td> </tr> </table>	1, 3, 5	G ¹ / ₄	2, 4	Namur port pattern		
1, 3, 5	G 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

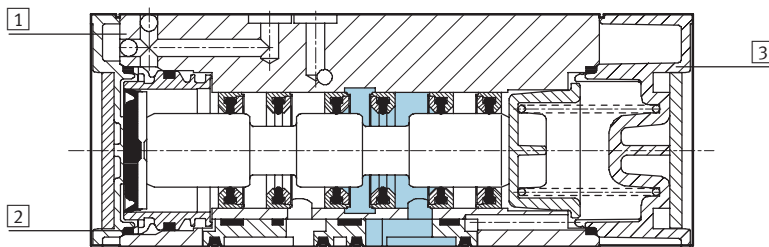
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Solenoid valves MGTBH, Namur

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,	Pull: 5 W
		230 V	Hold: 3.7 W
Protection class to EN 60 529	IP 65 with plug socket		
On	40 ms		
Off	100 ms		

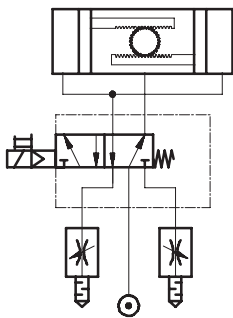
Materials



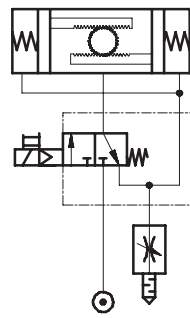
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve



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



Solenoid valves MGTBH, Namur

Technical data

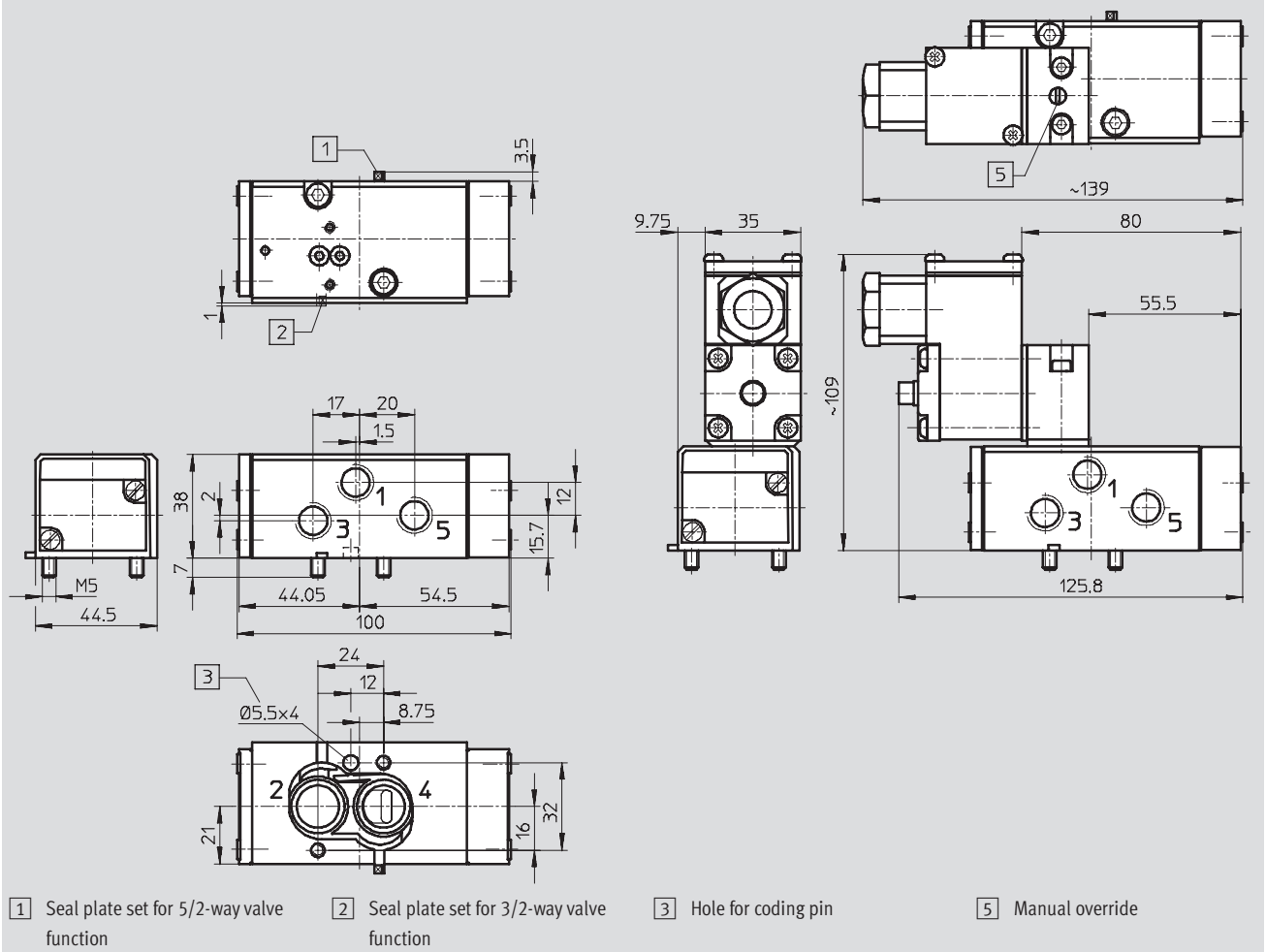


Standard directional control valves
Namur

2.1

Dimensions Download CAD data → www.festo.com/en/engineering

Basic valve Solenoid valve MGTBH



Ordering data – Valve

Solenoid valve with coil and plug socket¹⁾

Operating voltage	Part No.	Type
24 V DC	183 978	MGTBH-5/2K-FR-NA
110 V AC	188 400	MGTBH-5/2K-FR-110AC-NA
230 V AC	188 401	MGTBH-5/2K-FR-230AC-NA

1) Individual pilot control valve, with solenoid coil and plug socket → 7 / 2.1-22

Ordering data – Accessories Technical data → Volume 2

	Operating voltage	Cable length	Part No.	Type
Pilot valve				
	24 V DC	-	184 105	MGTBH-3/2-1,2-24DC
	110 V AC	-	185 246	MGTBH-3/2-1,2-110AC
	230 V AC	-	185 248	MGTBH-3/2-1,2-230AC
Manual override tool				
	-	-	157 651	AHB-MD/MF/MV
Inscription labels				
	-	-	18 182	IBS-9x20 ¹⁾

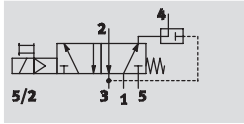
1) Scope of delivery 20 pieces

Solenoid valves VSNB, Namur

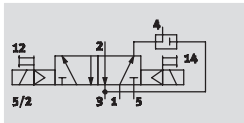
Technical data


Function¹⁾

5/2-way valve
single solenoid



double solenoid



 Voltage
24 V DC
110, 230 V AC

 Pressure
2.5 ... 8 bar

 Temperature range
-20 ... +50 °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	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 ... +50
Temperature of medium (with coil MDH)	[°C] -10 ... +50
CE marking	In accordance with EU Low Voltage Directive
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.

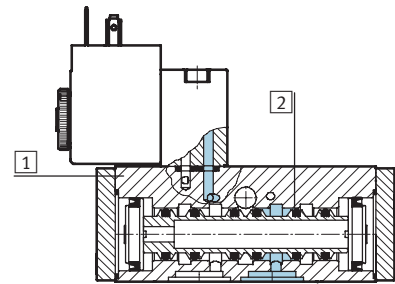
Solenoid valves VSNB, Namur

Technical data



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



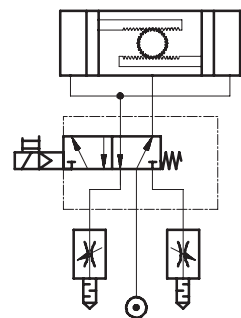
1	Housing	Wrought aluminium alloy, anodised
2	Seals	Nitrile rubber, hydrogenated nitrile rubber
-	Screws	High-alloy stainless steel
Note on materials		Contains paint wetting impairment substances

Standard directional control valves
Namur

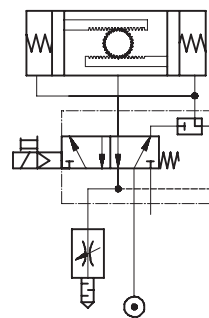
2.1

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

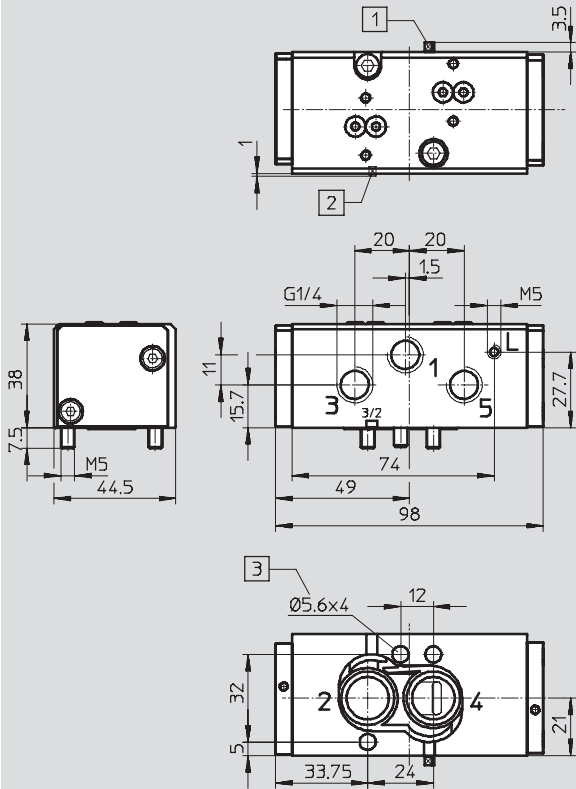


Dimensions

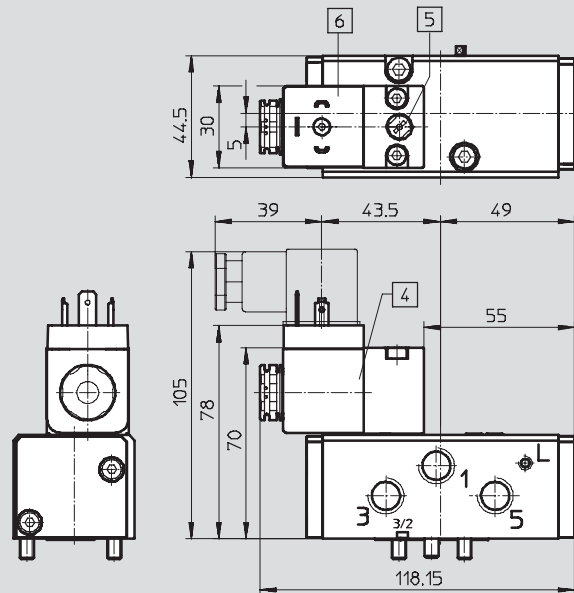
Download CAD data → www.festo.com/en/engineering

Basic valve

Single solenoid valve

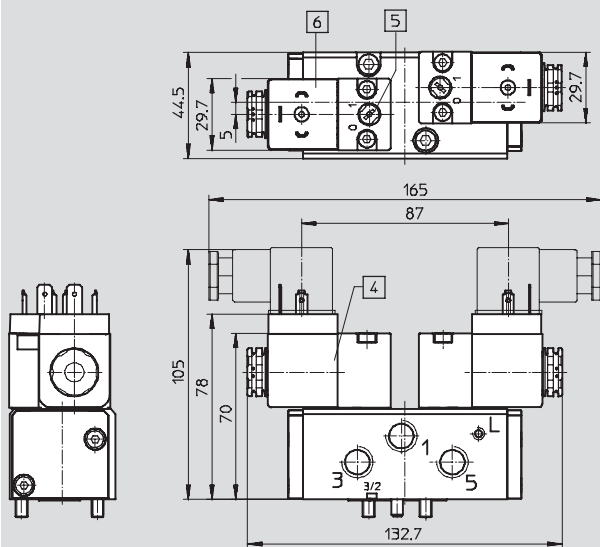


- 1 Seal plate set to 5/2-way valve function
- 2 Seal plate set to 3/2-way valve function
- 3 Hole for coding pin



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

Double solenoid valve



- 4 Pilot valve
- 5 Manual override
- 6 Wiring at plug socket to EN 175301-803, type A

Solenoid valves VSNB, Namur

Technical data

Ordering data – Solenoid valves without pilot valve ¹⁾		
Description	Part No.	Type
5/2-way valve, single solenoid		
Can be changed to 3/2-way valve	547 017	VSNB-FC-M52-M-G14-P2
Cannot be changed to 3/2-way valve	547 021	VSNB-F-M52-M-G14-P2
5/2-way valve, double solenoid		
Cannot be changed to 3/2-way valve	547 022	VSNB-F-B52-M-G14-P2

1) Solenoid coil must be ordered separately → 7 / 2.1-27

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	547 026	VSNB-FC-M52-MH-G14-1A1
Cannot be changed to 3/2-way valve	547 028	VSNB-F-M52-MH-G14-1A1
5/2-way valve, double solenoid		
Cannot be changed to 3/2-way valve	547 029	VSNB-F-B52-H-G14-1A1

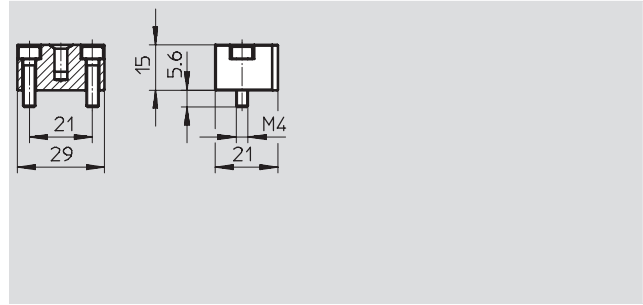
Solenoid valves VSNB, Namur

Accessories



Control plate VAOP

Material:
Wrought aluminium alloy



Ordering data			
	Weight [g]	Part No.	Type
For mounting on the basic valve	21	547 025	VAOP-C2-P2

Ordering data					
	Nominal operating voltage	Cable length	Signal status display	Part No.	Type
Pilot valve with solenoid coil					
	24 V DC	–	–	546 019	MDH-3/2-24VDC-PI
	110 V AC	–	–	546 020	MDH-3/2-110VAC-PI
	230 V AC	–	–	546 021	MDH-3/2-230VAC-PI
Plug socket Technical data → LEERER MERKER					
	–	–	–	34 583	MSSD-C
Plug socket with cable Technical data → LEERER MERKER					
	24 V DC	2,5 m	LED	30 931	KMC-1-24DC-2,5-LED
	24 V DC	5 m	LED	30 933	KMC-1-24DC-5-LED
	24 V DC	10 m	LED	193 459	KMC-1-24-10-LED
	Up to 230 A DC	2,5 m	–	30 932	KMC-1-230AC-2,5
	Up to 230 A DC	5 m	–	30 934	KMC-1-230AC-5
Illuminating seal					
	12 ... 24 V DC/AC	–	–	19 145	MC-LD-12-24DC
	230 V DC/AC	–	–	19 146	MC-LD-230AC
Push-in fitting QS					
	–	–	–	→ Volume 3	
Silencer U					
	–	–	–	→ Volume 3	