








- NAMUR port pattern
- Simple flange mounting to actuators for process engineering
- For various explosion protection classes
- 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

Function	Design	Type	Nominal size	Standard nominal flow rate	Pneumatic connection	Pressure range	Ambient temperature
			[mm]	[l/min]		[bar]	[°C]
5/2-way valves ¹⁾		NVF3-...-EX  New	7	900	G1/4	2 ... 10	-10 ... +60
						2 ... 10	-10 ... +60
		NVF3-...-IA-EX  New				2 ... 10	-10 ... +40
		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	

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

Solenoid valves, Namur

Product range overview

Type	For solenoid coil	Operating voltage range		Explosion-proof	Intrinsically safe	→ Page
		[V DC]	[V AC]			
NVF3-...-EX  New	MSFG, MSPW ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	-	-	7 / 2.1-6
	MSFG-...-EX ¹⁾ MSFW-...-EX ¹⁾	24	24, 110, 230	■	-	
NVF3-...-IA-EX  New	⁻²⁾	24	-	■	■	
MFH	MSFG, MSPW ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	-	-	7 / 2.1-12
MN1H	MSN1G, MSN1W ¹⁾	24	110, 230	-	-	7 / 2.1-16
MGTBH	⁻²⁾	24	110, 230	-	-	7 / 2.1-20

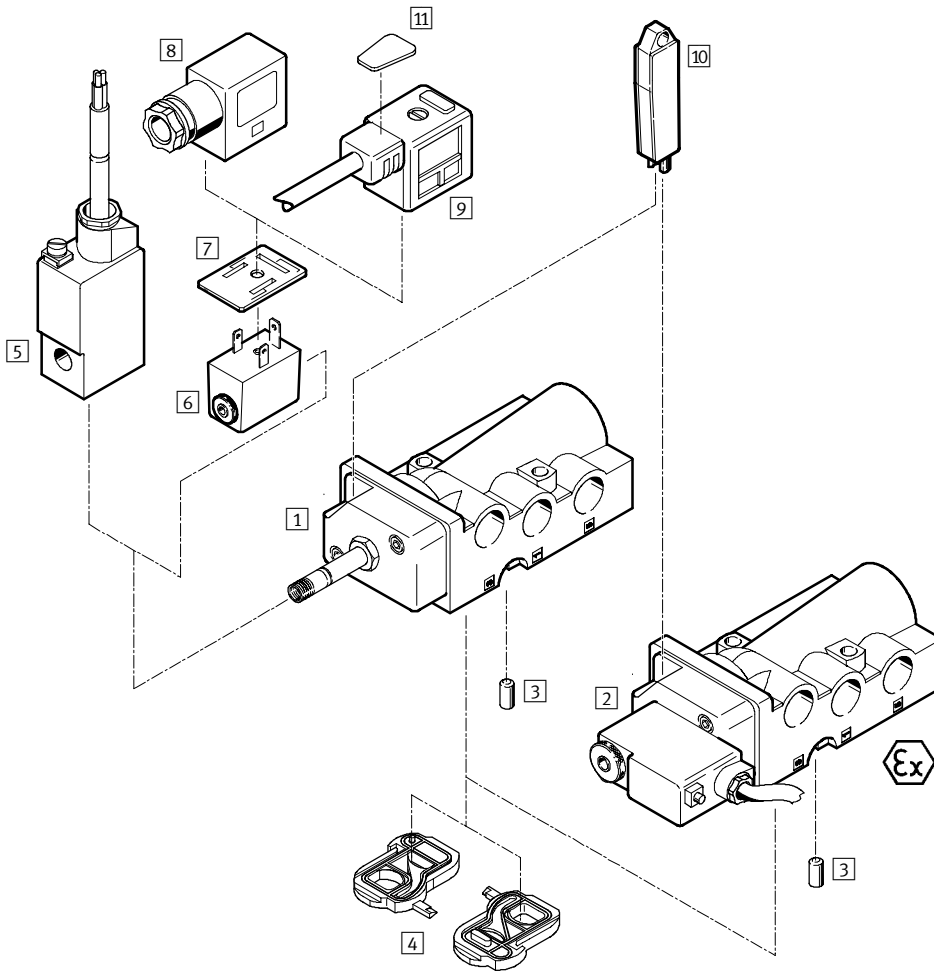
- 1) Solenoid coil must be ordered separately
 2) Solenoid coil included in scope of delivery

Solenoid valves NVF3, Namur

Peripherals overview

Standard directional control valves
Namur

2.1



Solenoid valves NVF3, Namur

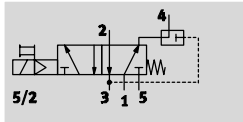
Peripherals overview

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

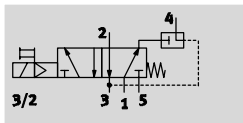
Solenoid valves NVF3, Namur


Technical data


Function¹⁾
5/2-way valve




3/2-way valve
with exhaust air 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
-10 ... +40 °C (EX)



1) Can be changed by exchanging the seal plate

General technical data	
Valve function	5/2-way or 3/2-way, single solenoid
Design	Disc seat
Sealing principle	Soft
Actuation type	Electrical
Type of reset	Mechanical spring
Type of control	Piloted
Direction of flow	Irreversible
Exhaust function	Flow control
Manual override	Detenting
Type of mounting	Via through holes
Mounting position	Any
Nominal size	7 mm
Standard nominal flow rate	1 → 2, 2 → 3 Exhaust air return 2 → 4
	900 l/min 150 l/min
b value	0.33
C value	4.2 l/sbar
Pneumatic connection	1, 3, 5 2, 4 Pilot exhaust port 84
	G $\frac{1}{4}$ Namur port pattern M5
Product weight	260 g
ATEX symbol	II 2 G c T4
CE symbol	94/9/EG (ATEX)

Operating and environmental conditions	
Operating medium	Filtered compressed air, lubricated or unlubricated
Operating pressure range	2 ... 10 bar
ATEX ambient temperature	-10 ... +40 °C
Temperature of medium	F coil F coil, explosion-proof
	-10 ... +60 °C -10 ... +40 °C
Corrosion resistance class CRC ¹⁾	1

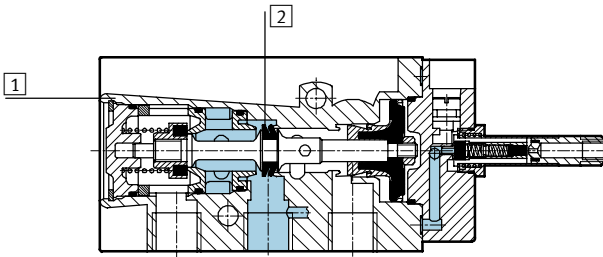
1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Solenoid valves NVF3, Namur

Technical data

Electrical data		Solenoid valve with F coil	Solenoid valve with explosion-proof solenoid coil, intrinsically safe
Electrical connection		Plug, 3-pin, or cable, 3-wire	Cable, 3-wire
Operating voltage range	D.C. voltage	12, 24, 42, 48 V DC $\pm 10\%$	24 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	24 V DC: 0.8 W
Protection class to EN 60 529		IP 65 with plug socket	IP 65 with plug socket
On		50 ms	50 ms
Off		100 ms	100 ms

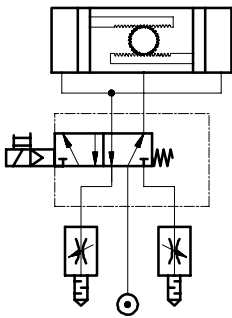
Materials



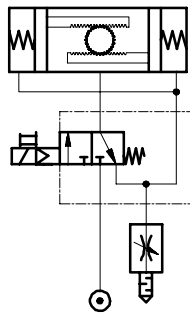
1	Housing	Aluminium die-cast, anodised
2	Seals	Polyamide

Connection examples

5/2-way valve



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

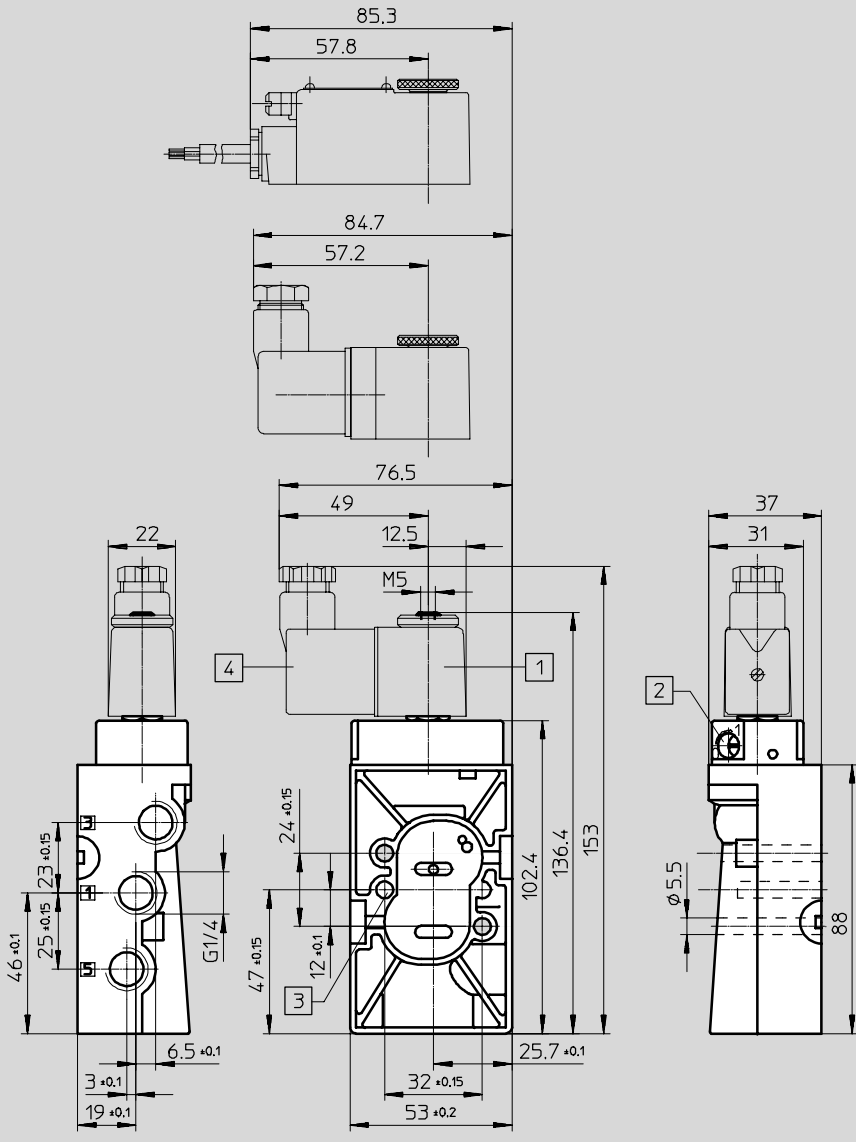


Solenoid valves NVF3, Namur

Technical data

Dimensions

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



- 1 Solenoid coil is 360° rotatable
- 2 Manual override tool can be turned through 180°
- 3 Hole for coding pin (included in scope of delivery)
- 4 Plug socket can be turned through 180°

Ordering data – Valves

Solenoid valve without coil¹⁾

Part No.	Type
535 987	NVF3-MOH-5/2-K-1/4-EX

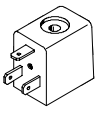
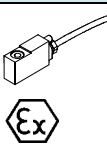

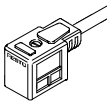
Solenoid valve with explosion-proof solenoid coil, intrinsically safe

Part No.	Type
535 988	NVF3-MOH-5/2-K-1/4-IA-EX

1) Solenoid coil must be ordered separately → 7 / 2.1-9

Solenoid valves NVF3, Namur

Accessories

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	
F solenoid coil, explosion-proof, 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	
	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	
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-35X¹⁾		

1) Scope of delivery 35 pieces

 Core Range

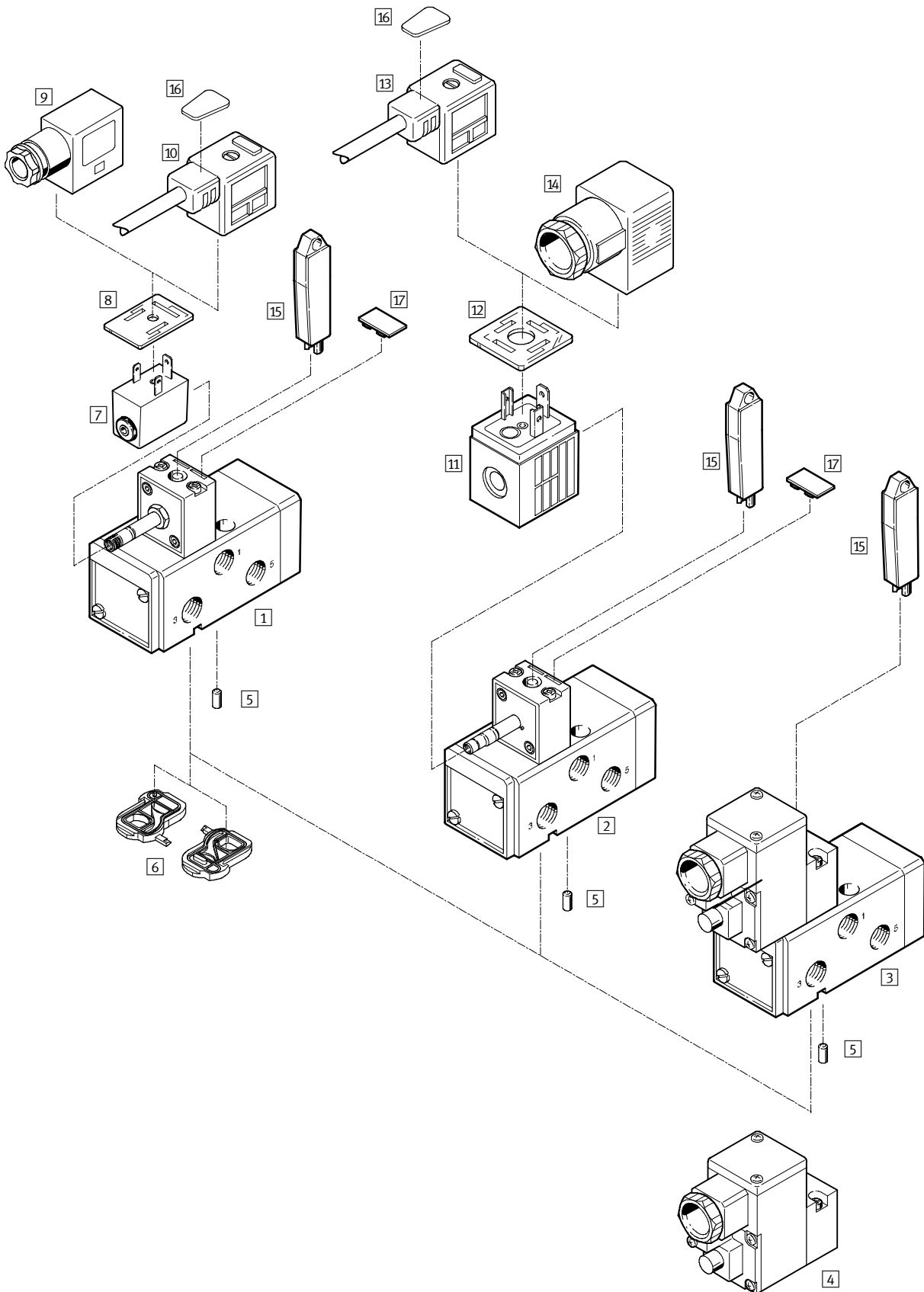
Solenoid valves, Namur

Peripherals overview



Standard directional control valves
Namur

2.1



Solenoid valves, Namur

Peripherals overview

FESTO

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	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	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	For identifying the plug sockets
17	Inscription labels IBS-9x17	For identifying the valves

Standard directional control valves
Namur

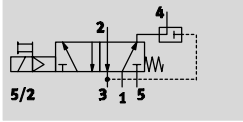
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Solenoid valves MFH, Namur

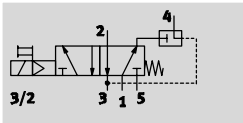
Technical data



Function¹⁾
5/2-way valve



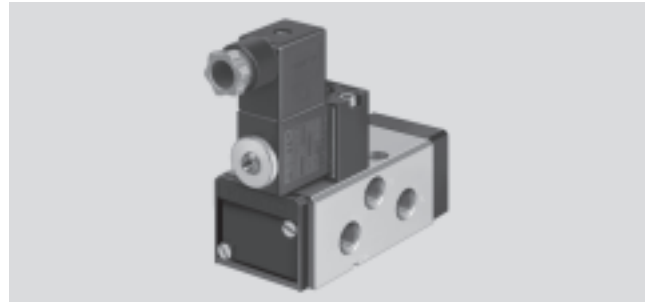
3/2-way valve
with exhaust air feedback



- - 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, single solenoid	
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 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 ... 10 bar
Ambient temperature	-5 ... +40 °C
Temperature of medium	-10 ... +60 °C
Corrosion resistance class CRC ¹⁾	2

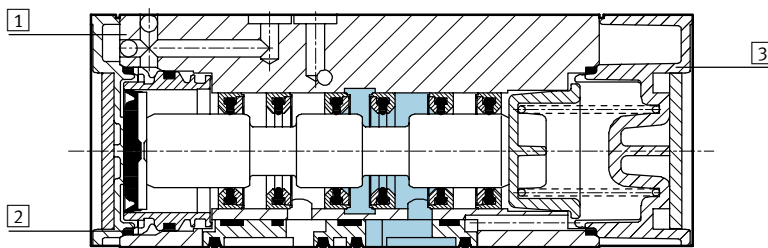
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Solenoid valves 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	50 ms	

Materials

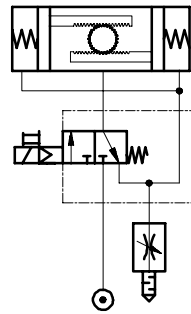
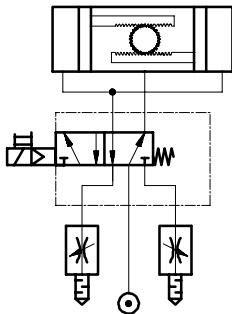


1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve

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



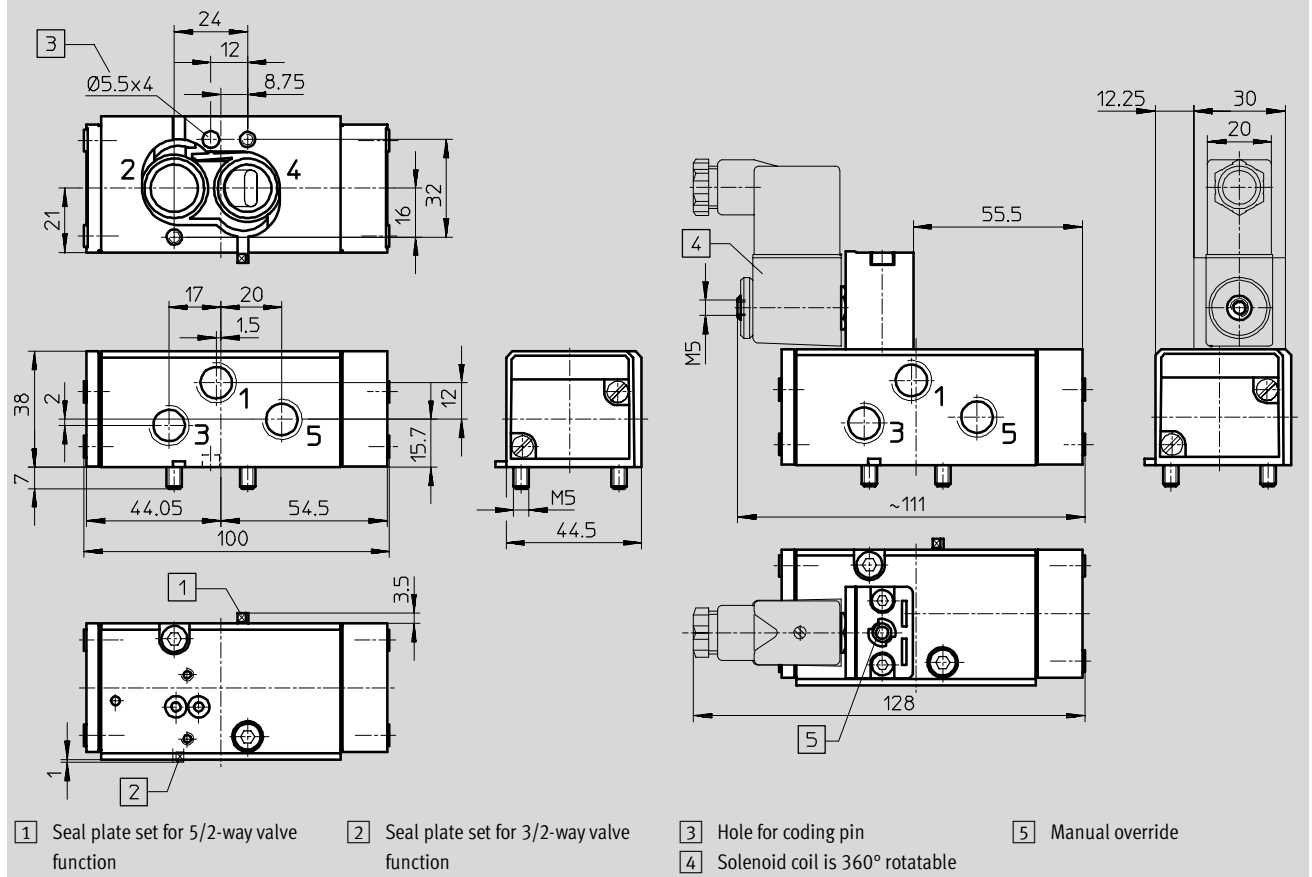
Solenoid valves MFH, Namur

Technical data



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

Basic valve Solenoid valve MFH



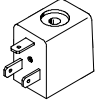

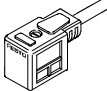
Ordering data – Valve	
Solenoid valve without coil ¹⁾	
Part No.	Type
183 973	MFH-5/2K-FR-NA

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

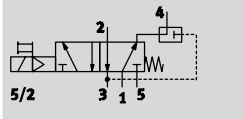
 Core Range

Solenoid valves MN1H, Namur

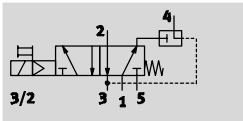
Technical data





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, single solenoid	
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 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 ... 10 bar
Ambient temperature	-10 ... +50 °C
Temperature of medium	-10 ... +50 °C
Corrosion resistance class CRC ¹⁾	2

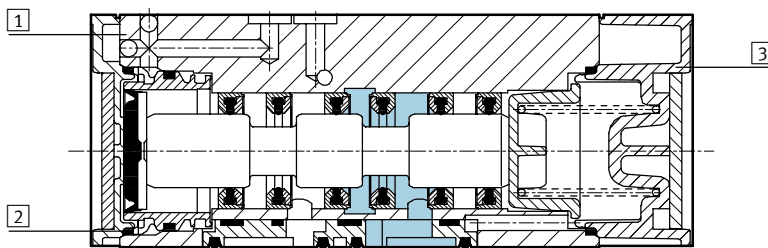
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Solenoid valves 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	50 ms	

Materials

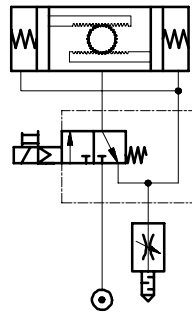
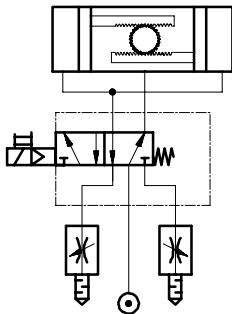


1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

Connection examples

5/2-way valve

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



Solenoid valves MN1H, Namur

Technical data

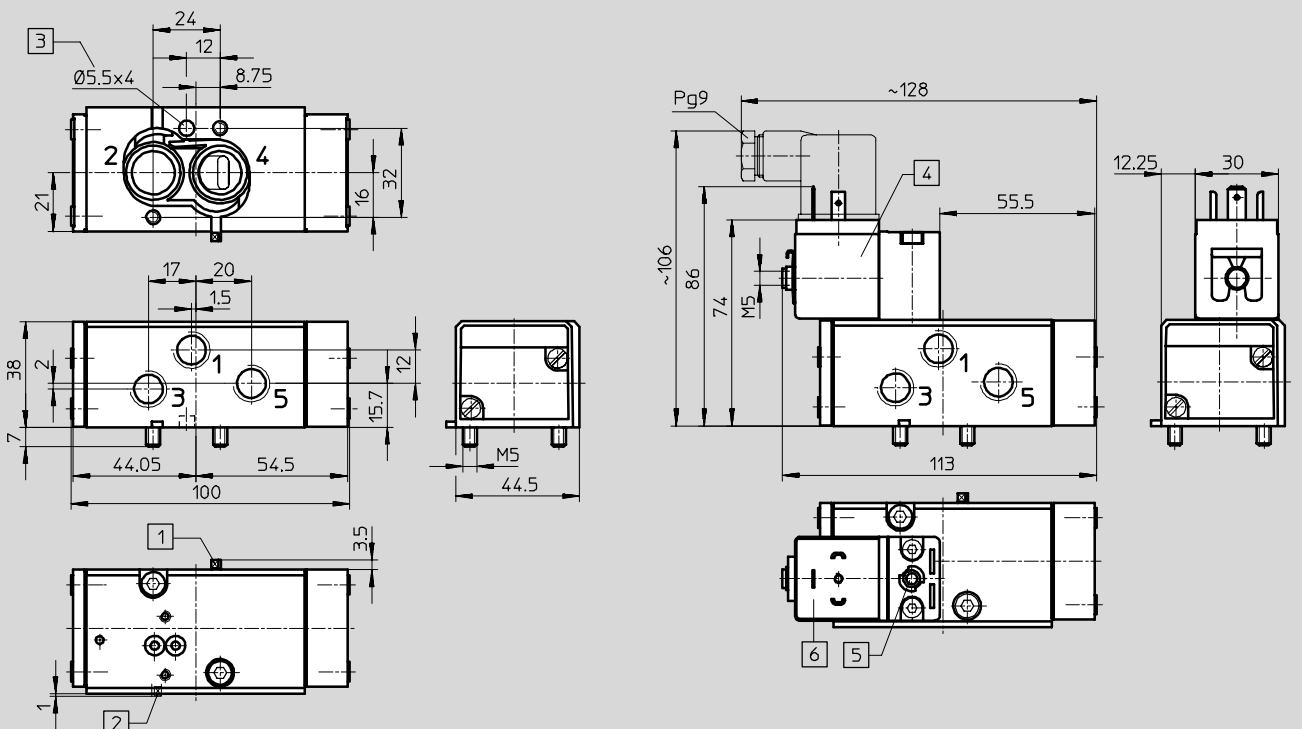


Standard directional control valves
Namur

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



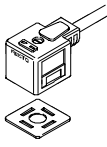
Ordering data – Valve	
Solenoid valve without coil ¹⁾	
Part No.	Type
183 974	MN1H-5/2K-FR-NA

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
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

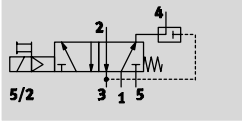
2) Scope of delivery 20 pieces

Solenoid valves MGTBH, Namur

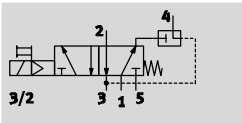
Technical data



Function¹⁾
5/2-way valve



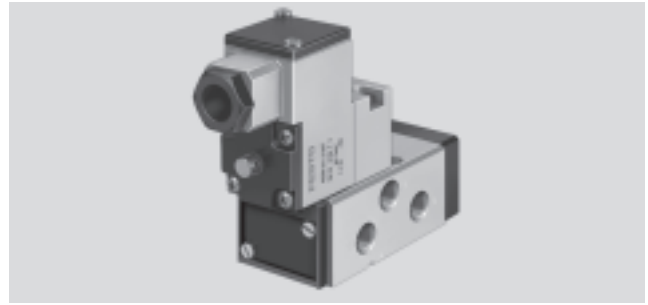
3/2-way valve
with exhaust air return



- - 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, single solenoid	
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 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

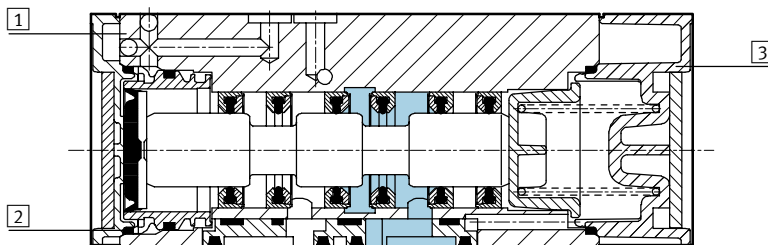
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

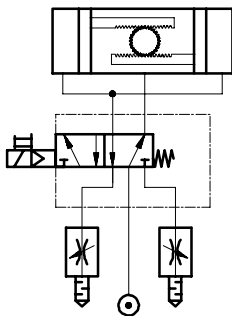
Materials



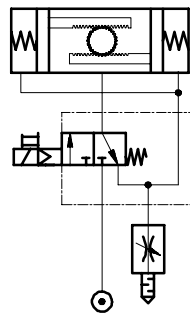
1	Housing	Aluminium die-cast, anodised
2	Seals	Nitrile rubber
3	Cover	Polyacetate

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

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

Ordering data – Valve		
Solenoid valve with coil and plug socket ¹⁾		
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