


Solenoid valves, to NAMUR



Solenoid valves, to NAMUR

Product range overview



Function	Version	Type	Nominal size [mm]	Standard nominal flow rate [l/min]	Pneumatic connection	Operating pressure [bar]	Ambient temperature [°C]
5/2-way valves ¹⁾		NVF3-...-EX	7	900	G ¹ / ₄	2 ... 10	-5 ... +40
							ATEX: -5 °C ≤ T _a ≤ +40 °C
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1) Can be changed to 3/2-way function by exchanging the seal plate

Solenoid valves, to NAMUR

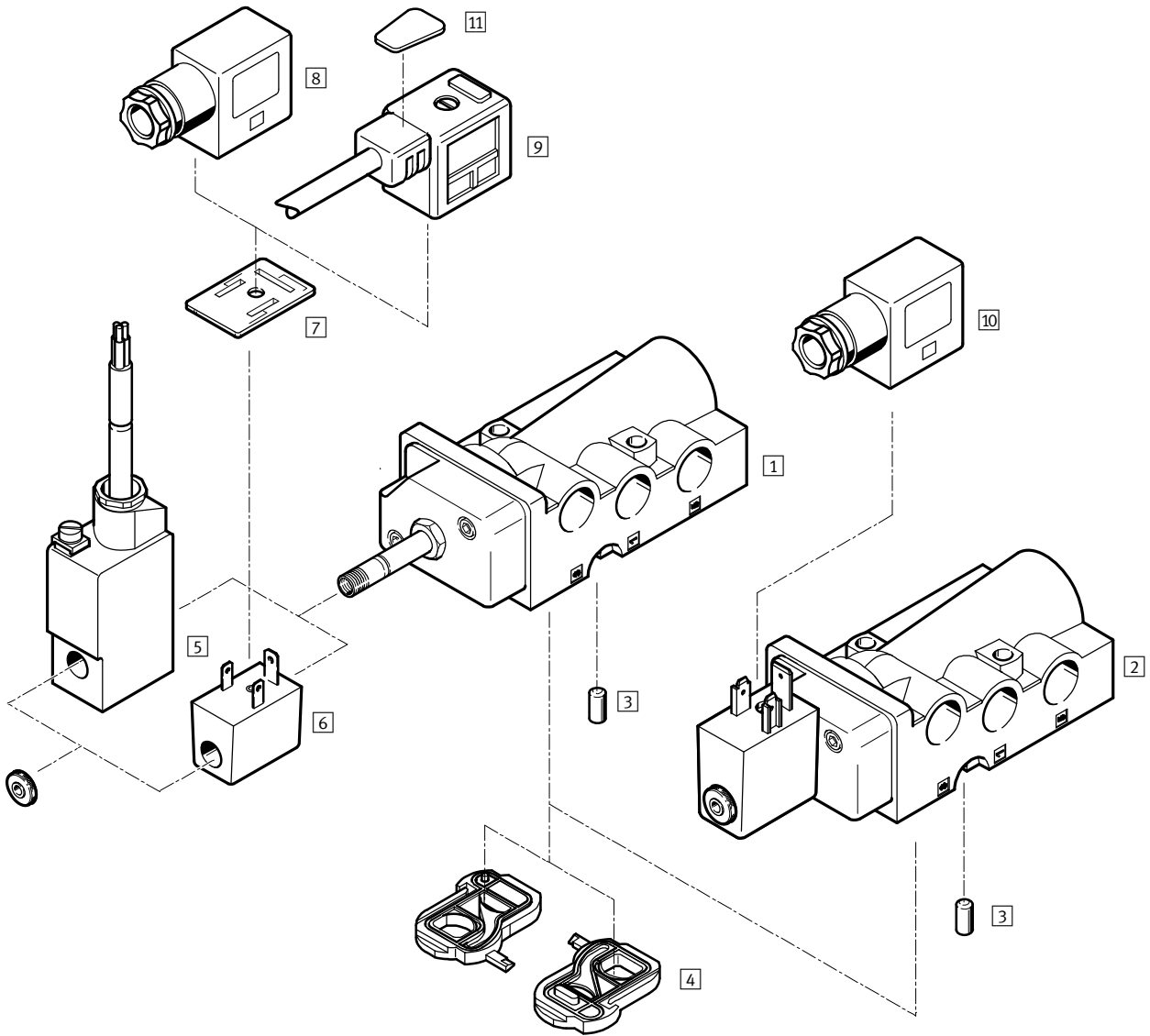
Product range overview

Type	Solenoid coil	Operating voltage range		Ignition protection type			→ Page/Internet
		[V DC]	[V AC]	nA = Non-sparking	m = Encapsulation	ia = Intrinsically safe	
NVF3-...-EX	MSFG-...-OD ¹⁾ , MSFW-...-OD ¹⁾	12, 24, 42, 48	24, 42, 48, 110, 230, 240	-	-	-	6
	MSFG-...-EX ¹⁾ , MSFW-...-EX ¹⁾	24	24, 110, 230	■	-	-	
	MSFG-...-M-EX ¹⁾ , MSFW-...-M-EX ¹⁾	24	24, 110, 230	-	■	-	

1) Solenoid coil must be ordered separately

Solenoid valves NVF3, to NAMUR

Peripherals overview



Solenoid valves NVF3, to NAMUR

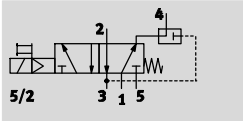
Peripherals overview

Solenoid valves and accessories		
	Brief description	→ Page/Internet
Solenoid valves		
1	NVF3-MOH-5/2K-1/4-EX	6
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	10
4	Seal plate	
5	Solenoid coil MSFG-...-M-EX and MSFW-...-M-EX	
6	Solenoid coil MSFG-...-EX and MSFW-...-EX	
7	Illuminating seal MF-LD	
8	Plug socket MSSD-F-M16 Insert can be repositioned by 180°. Ignition protection type nA = non-sparking for solenoid coil in item 6	
9	Plug socket with cable KMF	
10	Plug socket MSSD-V-M16 Insert can be repositioned by 180°. Ignition protection type ia = intrinsically safe for solenoid coil in item 2	
11	Inscription labels KMC/F/V-BZ	
	For identifying the plug sockets	

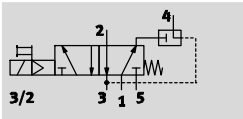
Solenoid valves NVF3, to NAMUR


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
-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
Valve function		5/2-way or 3/2-way, single solenoid
Conforms to		VDI/VDE 3845 (NAMUR)
Width	[mm]	53
Design		Disk seat
Sealing principle		Soft
Actuation type		Electric
Reset method		Mechanical spring
Type of control		Piloted
Direction of flow		Non-reversible
Exhaust function		Flow control
Manual override		Detenting, non-detenting
Type of mounting		On manifold rail
Mounting position		Any
Non-overlapping		No
Vent connection		Internal
Nominal size	[mm]	7
Lap		Underlap
Standard nominal flow rate	1 → 2, 2 → 3 [l/min]	900
	Exhaust air return 2 → 4 [l/min]	150
b value		0.33
C value	[l/sbar]	4.2
Pneumatic connection	1, 3, 5	G1/4
	2, 4	Port pattern as per NAMUR
	Pilot exhaust port 84	M5
Product weight	[g]	280

Solenoid valves NVF3, to NAMUR

Technical data

Operating and environmental conditions		Solenoid valve with F coil of choice
Operating medium		Compressed air in accordance with ISO 8573-1:2010 [7:4:4]
Note on operating/pilot medium		Operation with lubricated medium possible (in which case lubricated operation will always be required)
Operating pressure	[bar]	2 ... 10
Ambient temperature	[°C]	-5 ... +40
Temperature of medium	[°C]	-5 ... +40
ATEX category for gas		II 2G
Explosion ignition protection type for gas		Ex h IIC T6 Gb
ATEX category for dust		II 2D
Explosion ignition protection type for dust		Ex h IIIC T70° C
Explosion-proof temperature rating		-5 °C ≤ Ta ≤ +40 °C
Explosion protection certification outside the EU		-
		-
		-
		-
CE marking		To EU Explosion Protection Directive (ATEX)
Corrosion resistance class CRC		1 ¹⁾

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

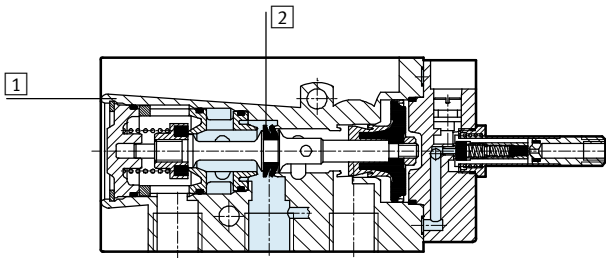
Electrical data		Solenoid valve with F coil of choice
Electrical connection		Plug, 3-pin or cable, 3-wire
Operating voltage range	[V DC]	12, 24, 42, 48
	[V AC]	24, 42, 48, 110, 230, 240 at 50 ... 60 Hz
Coil characteristics, 24 V DC	[W]	-
Max. input power	[W]	-
Max. input voltage	[V]	-
Max. input current	[A]	-
Effective inductance		-
Effective capacitance		-
Protection class to EN 60529		IP65 with plug socket
Switching time on	[ms]	50
Switching time off	[ms]	100

Solenoid valves NVF3, to NAMUR

Technical data



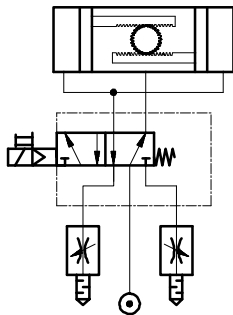
Materials



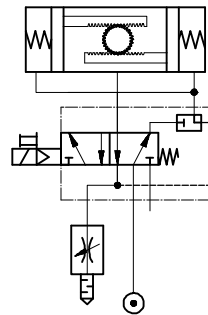
1	Housing	Anodised die-cast aluminium
2	Seals	NBR
		Contains PWIS (paint-wetting impairment substances)

Sample circuit

5/2-way valve



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



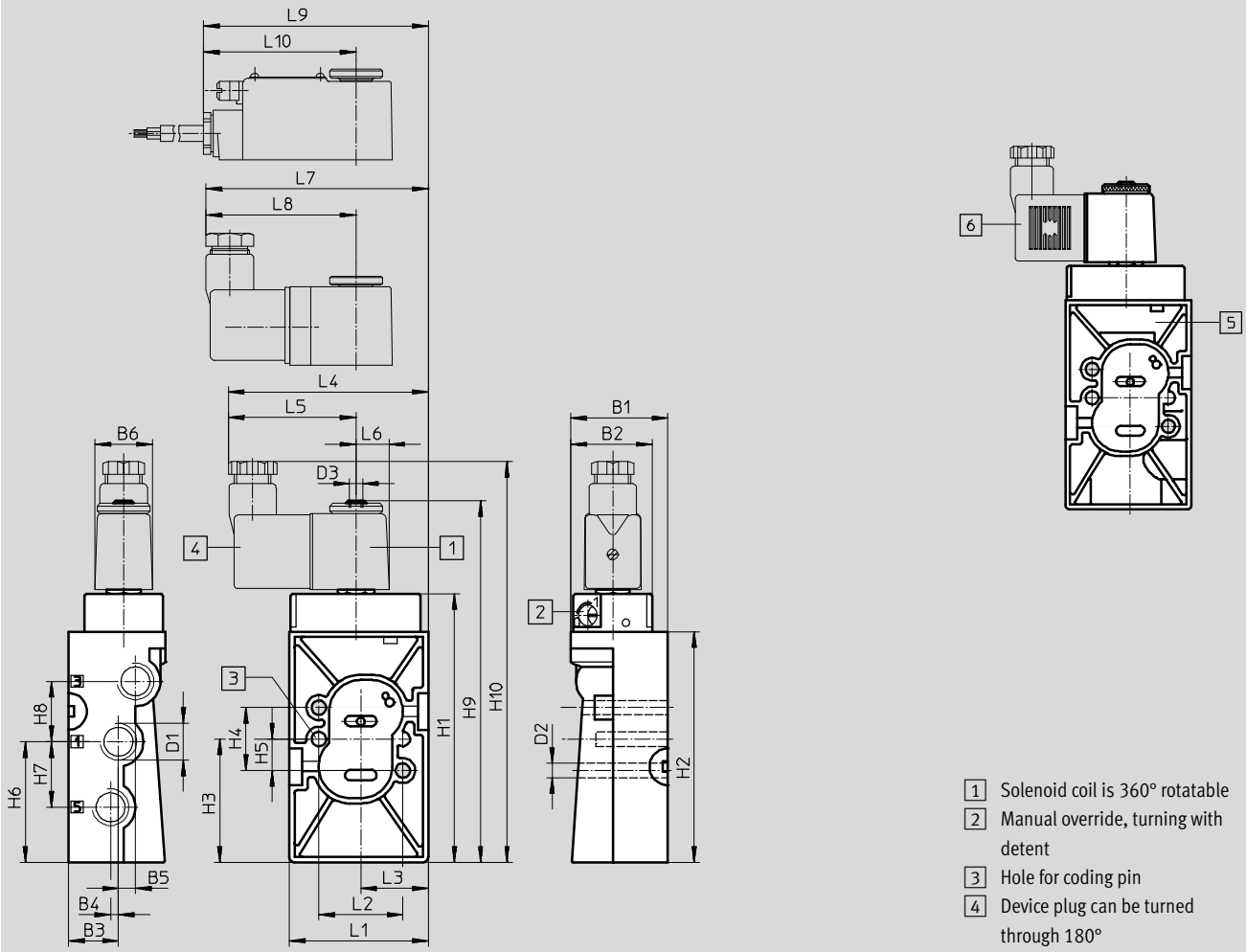
Solenoid valves NVF3, to NAMUR

Technical data

FESTO

Dimensions

Download CAD data → www.festo.com



- 1 Solenoid coil is 360° rotatable
- 2 Manual override, turning with detent
- 3 Hole for coding pin
- 4 Device plug 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 solenoid coil¹⁾

Part No. Type

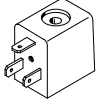


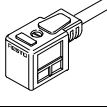

535987 NVF3-MOH-5/2-K-¼-EX

1) Solenoid coil must be ordered separately → 10,
Explosion-proof solenoid coil → 11


Solenoid valves NVF3, to NAMUR

Accessories

FESTO

Ordering data				
	Operating voltage	Cable length	Part No.	Type
F solenoid coil without plug socket Technical data → Internet: msfg, msfw				
	12 V DC	–	34410	MSFG-12-OD
	24 V DC	–	34411	MSFG-24/42-50/60-OD
	42 V DC	–	34413	MSFG-42-OD
	24 V AC/50 ... 60 Hz	–	34415	MSFW-24-50/60-OD
	42 V AC/50 ... 60 Hz	–	34411	MSFG-24/42-50/60-OD
	48 V AC/50 ... 60 Hz	–	34418	MSFW-48-50/60-OD
	110 V AC/50 ... 60 Hz	–	34420	MSFW-110-50/60-OD
	230 V AC/50 ... 60 Hz	–	34422	MSFW-230-50/60-OD
	240 V AC/50 ... 60 Hz	–	34424	MSFW-240-50/60-OD
Plug socket with screw terminal connection Technical data → Internet: mssd				
	–	–	34431	MSSD-F
	–	–	539710	MSSD-F-M16
Plug socket with insulation displacement connection Technical data → Internet: mssd				
	–	–	192746	MSSD-F-S-M16
Plug socket with cable Technical data → Internet: kmf-1				
	24 V DC	2.5 m	30935	KMF-1-24DC-2,5-LED
	0 ... 240 V DC/AC		30936	KMF-1-230AC-2,5
	24 V DC	5 m	30937	KMF-1-24DC-5-LED
	0 ... 240 V DC/AC		30938	KMF-1-230AC-5
	Illuminating seal Technical data → Internet: mf-ld			
	12 ... 24 V DC/AC	–	19143	MF-LD-12-24DC
	230 V DC/AC	–	19144	MF-LD-230AC
Inscription label Technical data → Internet: kmc/f/v				
–	–	–	33362	KMC/F/V-BZ-35X¹⁾

1) Scope of delivery 35 pieces

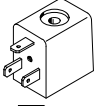

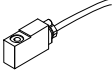


 **Note**

Valve/solenoid coil combinations made up of a basic valve NVF3-MOH-5/2-K-¼-EX and a solenoid coil MSF...-OD must not be used in hazardous areas.

Only combinations with the approved solenoid coil MSF...-EX may be used here. → 11

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Accessories for ATEX environment

Ordering data				
	Operating voltage	Cable length	Part No.	Type
F solenoid coil for ignition protection type nA = non-sparking Technical data → Internet: msfw, msfg				
 	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
F solenoid coil for ignition protection type mb Technical data → Internet: vacf				
 	24 V DC	1 m	8059804	VACF-B-K1-1-1-EX4-M
	24 V DC	5 m	8059805	VACF-B-K1-1-5-EX4-M
	24 V AC/50 ... 60 Hz	1 m	8059808	VACF-B-K1-1A-1-EX4-M
	110 V AC/50 ... 60 Hz	1 m	8059811	VACF-B-K1-16B-1-EX4-M
	110 V AC/50 ... 60 Hz	5 m	8059812	VACF-B-K1-16B-5-EX4-M
	230 V AC/50 ... 60 Hz	1 m	8059809	VACF-B-K1-3A-1-EX4-M
	230 V AC/50 ... 60 Hz	5 m	8059810	VACF-B-K1-3A-5-EX4-M
	24 V DC	x m	8059807	VACF-B-K1-1-20-EX4-M
Plug socket with screw terminal connection for solenoid valve Technical data → Internet: mssd				
NVF3-MOH-5/2-K-¼-IA-EX, ignition protection type ia = intrinsically safe				
	–	–	539713	MSSD-V-M16