

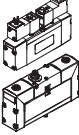



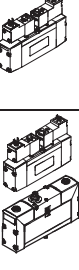
- Electrically or pneumatically actuated valves
- With internal or external pilot air
- Pneumatic or mechanical reset

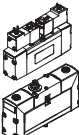
Specified types in accordance with ATEX directive for potentially explosive atmospheres
→ www.festo.com/en/ex

Solenoid valves, ISO 15 407-1

Product range overview

Function	Design	Type	ISO size		Nominal flow rate [l/min]	Working port on sub-base		Operating voltage				
			02	01		G $\frac{1}{8}$	G $\frac{1}{4}$	[V DC]		[V AC]		
								12	24	24	110	230
2x 3/2-way valves in one housing		Solenoid valve										
		MN2H-2x3-...	■	■	490/950	■	■	■	■	■	■	■
		MN2H-2x3-...-ZSR	■	■		■	■	-	■	-	-	-
		VSVA-...-T32-...1R...	■	■	500/1,000	■	■	-	■	-	-	-

Function	Design	Type	ISO size		Nominal flow rate [l/min]	Working port on sub-base		Operating voltage					
			02	01		G $\frac{1}{8}$	G $\frac{1}{4}$	[V DC]		[V AC]			
								12	24	24	110	230	
5/2-way valves		Single solenoid valve											
		MN2H	■	■	500/1,000	■	■	■	■	■	■	■	
		MN2H-...-ZSR	■	■	500/1,000	■	■	-	■	-	-	-	
			VSVA-...-M52-...R...	■	■	500/1,000	■	■	-	■	-	-	-
		Double solenoid valve											
		JMN2H	■	■	500/1,000	■	■	■	■	■	■	■	
		JMN2DH	■	■	500/1,000	■	■	■	■	■	■	■	
		JMN2H-...-ZSR	■	■	500/1,000	■	■	-	■	-	-	-	
		VSVA-...-B52-...R...	■	■	1,000	■	■	-	■	-	-	-	
		JMN2DH-...-ZSR	■	■	500/1,000	■	■	-	■	-	-	-	
			VSVA-...-D52-...R...	■	■	500/1,000	■	■	-	■	-	-	-

Function	Design	Type	ISO size		Nominal flow rate [l/min]	Working port on sub-base		Operating voltage				
			02	01		G $\frac{1}{8}$	G $\frac{1}{4}$	[V DC]		[V AC]		
								12	24	24	110	230
5/3-way valves		Solenoid valve										
		MN2H-5/3...	■	■	500/1,000	■	■	■	■	■	■	■
		MN2H-5/3-...-ZSR	■	■	500/1,000	■	■		■			
		VSVA-...-P53-...R...	■	■	450/1,000	■	■		■			

Solenoid valves, ISO 15 407-1

Product range overview




Type	Plug			Pilot air supply		Spring return		Normal position (normal position)			→ Page
	Cube	Central round		Internal	External	Pneumatic	Mechanical	2x closed	2x open	1x open 1x closed	
	MEB	M8x1	M12x1								
Solenoid valve											
MN2H-2x3...	■	-	-	■	■	■	-	■	■	■	2 / 1.1-12
MN2H-2x3-...-ZSR	-	-	■	■	■	■	-	■	■	■	2 / 1.1-12
VSVA-...-T32-...R...	-	■	■	■	■	■	-	■	■	■	2 / 1.1-36


Type	Plug			Pilot air supply		Spring return		Signal processing			→ Page
	Cube	Central round		Internal	External	Pneumatic	Mechanical	single solenoid	double solenoid		
	MEB	M8x1	M12x1						Equal	Dominant	
Single solenoid valve											
MN2H	■	-	-	■	■	■	■	■	-	-	2 / 1.1-18
MN2H-...-ZSR	-	-	■	■	■	■	■	■	-	-	2 / 1.1-18
VSVA-...-M52-...R...	-	■	■	■	■	■	■	■	-	-	2 / 1.1-40
Double solenoid valve											
JMN2H	■	-	-	■	■	-	-	-	■	-	2 / 1.1-24
JMN2DH	■	-	-	■	■	-	-	-	-	■	2 / 1.1-24
JMN2H-...-ZSR	-	-	■	■	■	-	-	-	■	-	2 / 1.1-24
VSVA-...-B52-...R...	-	■	■	■	■	-	-	-	■	-	2 / 1.1-44
JMN2DH-...-ZSR	-	-	■	■	■	-	-	-	-	■	2 / 1.1-24
VSVA-...-D52-...R...	-	■	■	■	■	-	-	-	-	■	2 / 1.1-44

Type	Design			Pilot air supply		Neutral position (normal position)			→ Page
	Cube	Central round		Internal	External	Closed	Exhausted	Pressurised	
	MEB	M8x1	M12x1						
Solenoid valve									
MN2H-5/3...	■	-	-	■	■	■	■	■	2 / 1.1-30
MN2H-5/3-...-ZSR	-	-	■	■	■	■	■	■	2 / 1.1-30
VSVA-...-P53-...R...	-	■	■	■	■	■	■	■	2 / 1.1-48

Pneumatic valves, ISO 15 407-1

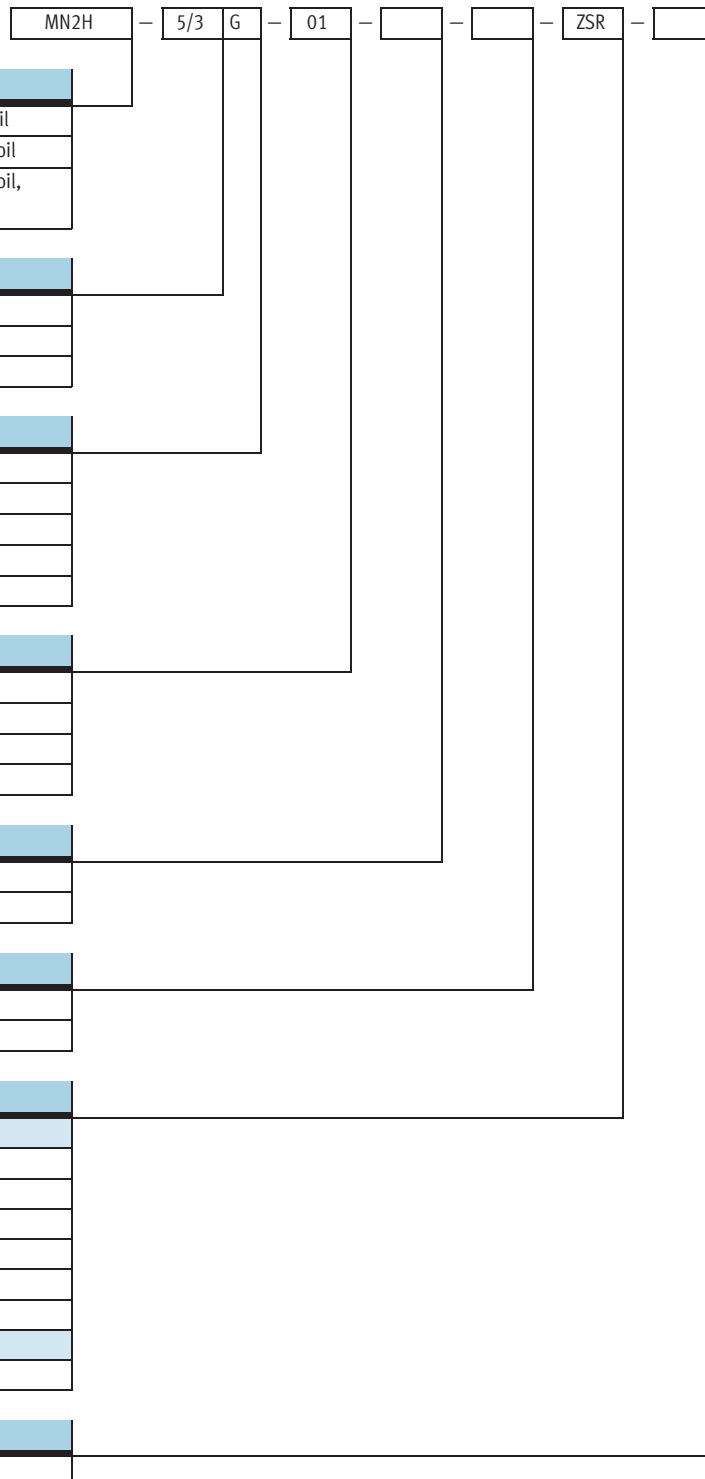
Product range overview

Function	Design	Type	ISO size	Nominal flow rate [l/min]	Pneumatic working port on sub-base	Type of reset		→ Page
						pneumatic spring	mechanical spring	
5/2-way valves	Pneumatic valve							
		VL-5/2	02	500	G $\frac{1}{8}$	■	■	2 / 1.1-56
			01	1,000	G $\frac{1}{4}$	■	■	
	Double pilot valve							
		J-5/2	02	500	G $\frac{1}{8}$	-	-	2 / 1.1-59
			01	1,000	G $\frac{1}{4}$	-	-	
	Double pilot valve with dominant signal							
		JD-5/2	02	500	G $\frac{1}{8}$	-	-	2 / 1.1-59
			01	1,000	G $\frac{1}{4}$	-	-	

Function	Design	Type	ISO size	Nominal flow rate [l/min]	Pneumatic working port on sub-base	Normal position			→ Page
						Closed	Exhausted	Pressurised	
5/3-way valves	Pneumatic valve								
		VL-5/3...	02	500	G $\frac{1}{8}$	■	■	■	2 / 1.1-62
01			1,000	G $\frac{1}{4}$	■	■	■		

Solenoid valves MN2H, ISO 15 407-1

Type codes



Type

MN2H	Single solenoid, with N2 solenoid coil
JMN2H	Double solenoid, with N2 solenoid coil
JMN2DH	Double solenoid, with N2 solenoid coil, with dominant signal

Valve function

2x3	2x 3/2-way valve
5/2	5/2-way valve
5/3	5/3-way valve

Normal position

0	Open
G	Closed
E	Exhausted
B	Pressurised
0-G	1x open, 1x closed

Size

02	ISO size 02
D-02	ISO size 02
01	ISO size 01
D-01	ISO size 01

Type of reset

FR	Mechanical spring
	Pneumatic spring

Pilot air supply

	Internal
S	External

Electrical connection, operating voltage

Plug, square design to DIN EN 175301-803, type C	
12DCA	12 V DC
110AC	110 V AC
110VAC	110 V AC
230AC	230 V AC
230VAC	230 V AC
Central plug, round design, M12x1	
ZSR	24 V DC

Generation

B	Series B
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Solenoid valves VSVA, ISO 15 407-1

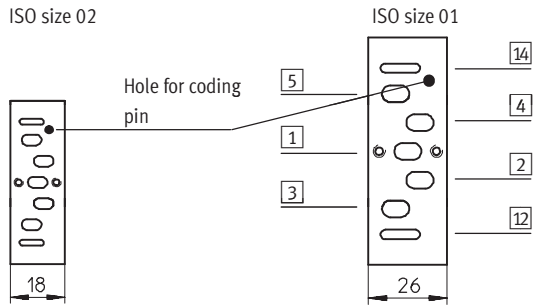
Type codes

		VSVA	-	B	-	T	32	C	-	A	Z	H	-	A1	-	1		R2	L	
Valve family																				
VSVA	Standard valves ISO 15 407-1/-2																			
Valve type																				
B	Sub-base valve																			
Valve function																				
M	Single solenoid																			
B	Double solenoid																			
D	Double pilot with dominance on one side																			
P	Mid-position																			
T	2 single solenoid valves in one housing																			
Connections / switching positions																				
32	3/2-way valve																			
52	5/2-way valve																			
53	5/3-way valve																			
Normal position																				
C	Closed																			
U	Open																			
E	Exhausted																			
H	T with 1x open, 1x closed																			
	Double solenoid valve																			
Type of reset																				
A	Pneumatic spring																			
M	Mechanical spring																			
	Double solenoid valve																			
Pilot air supply																				
Z	External																			
	Internal																			
Manual override facility																				
H	By pushing																			
Standard																				
A1	ISO size 01																			
A2	ISO size 02																			
Operating voltage																				
1	24 V																			
Type of voltage																				
	DC																			
Electrical connection																				
R2	Central plug M8x1																			
R5	Central plug M12x1																			
LED																				
L	Integrated																			

Solenoid valves, ISO 15 407-1

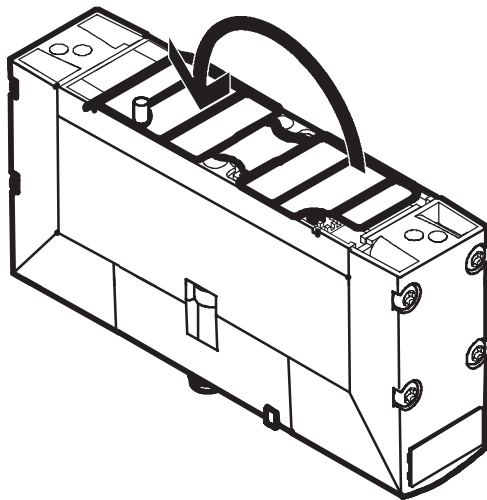
Peripherals overview

Port pattern on sub-base to ISO 15 407-1 Extension of the standard given below



VSVA Conversion of pilot air exhaust

VSVA valve manifolds are supplied with unducted the pilot air exhaust. By turning the seal between the valve and manifold block, the exhaust can be diverted into the pilot duct 12 and it can thus be contained and silenced (see Figure).

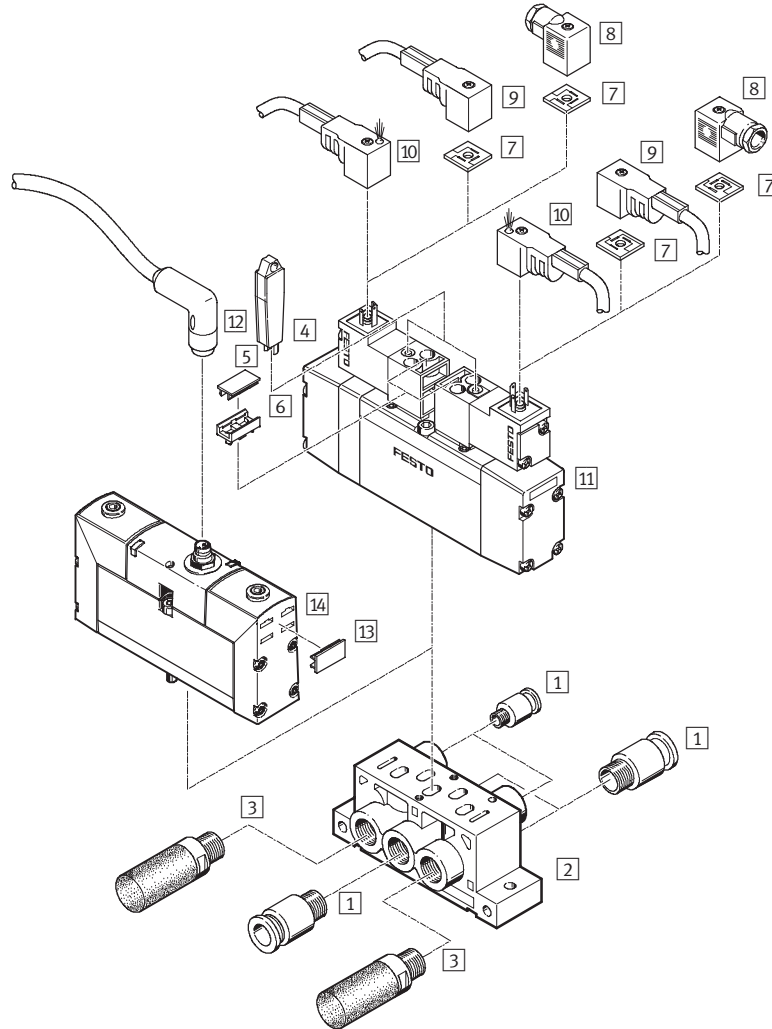


Solenoid valves, ISO 15 407-1

Peripherals overview



Individual mounting



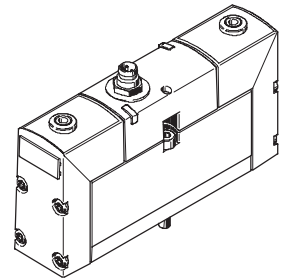
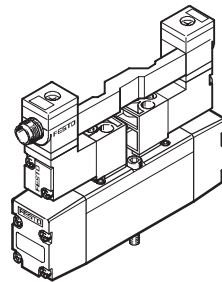
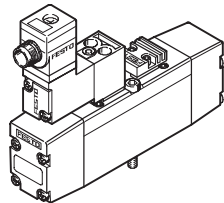
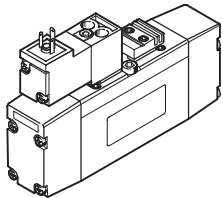
Variants

MN2H-5/2-...

MN2H-5/2-...-ZSR

MN2H-2x3-...-
ZSR, JMN2H-5/2-...-
ZSR, MN2H-5/3-...-ZSR

VSVA-B-...-A1-1R2L
VSVA-B-...-A1-1R5L



Solenoid valves, ISO 15 407-1

Peripherals overview



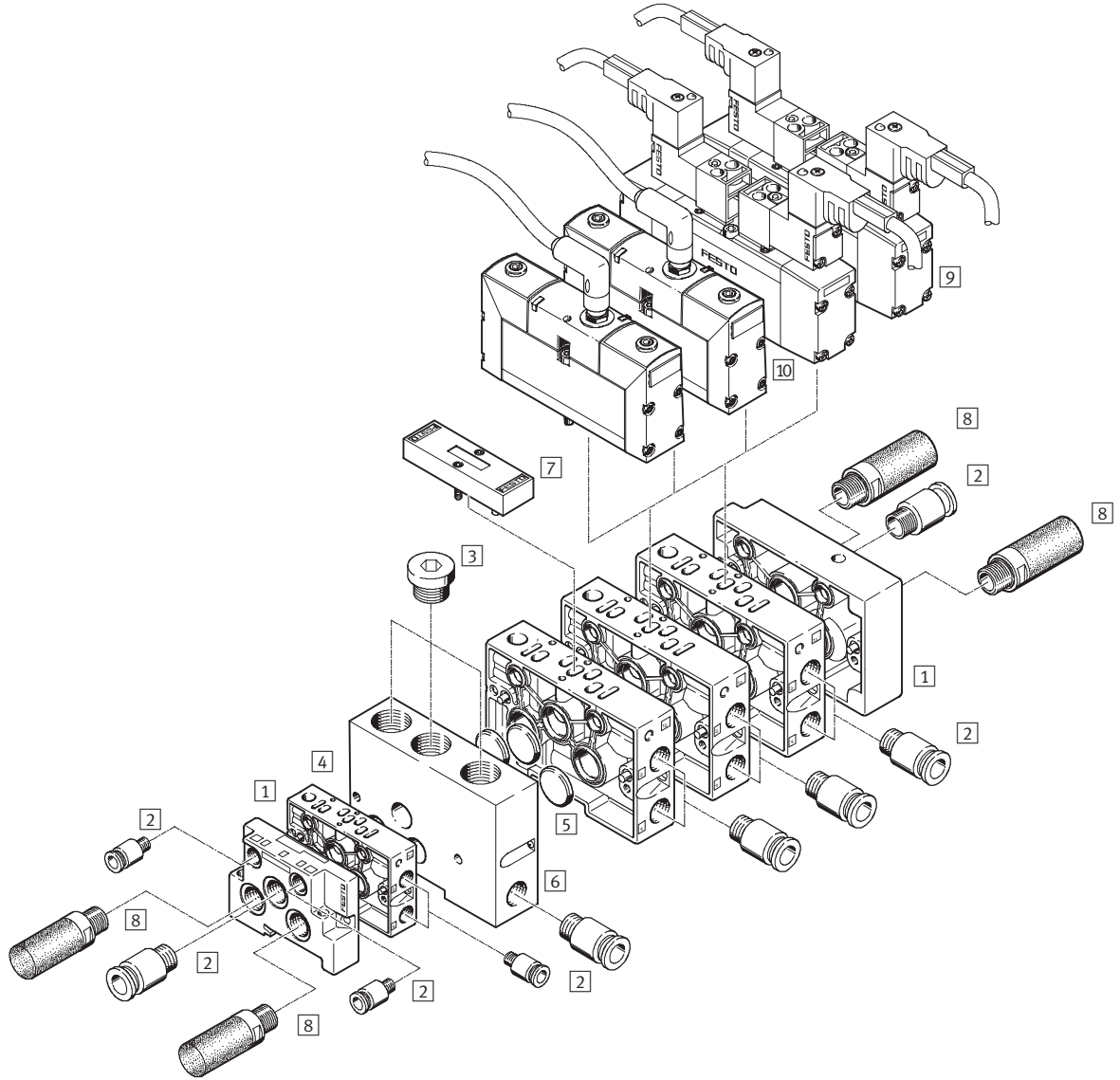
Accessories		
	Brief description	→ Page
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D. to CETOP RP 54 P Volume 3
2	Individual sub-base NAS	With lateral ports 2 / 1.1-65
-	Individual sub-base NAU	With ports underneath 2 / 1.1-66
3	Silencers U	For fitting in exhaust ports Volume 3
4	Manual override tool AHB-MEB	Detenting 2 / 1.1-70
5	Inscription labels IBS-9x17	For identifying the valves MN2H 2 / 1.1-70
6	Inscription clip MN2H	For holding the inscription label 2 / 1.1-69
7	Illuminating seal MEB-LD	For indicating the switching status 2 / 1.1-72
8	Plug socket MSSD-EB	- 2 / 1.1-71
9	Plug socket with cable KMEB	- 2 / 1.1-71
10	Plug socket with cable and LED KMEB-...-LED	For indicating the switching status 2 / 1.1-71
11	Solenoid valve MN2H	Port pattern to ISO 15 407-1 2 / 1.1-2
12	Plug socket with cable	Round plug M12x1 or M8x1 2 / 1.1-70
13	Inscription labels IBS-9x20	For identifying the valves VSVA 2 / 1.1-71
14	Solenoid valve VSVA	Port pattern to ISO 15 407-1 2 / 1.1-2

Solenoid valves, ISO 15 407-1

Peripherals overview



Manifold mounting



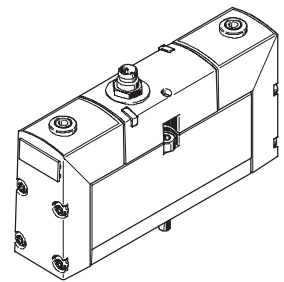
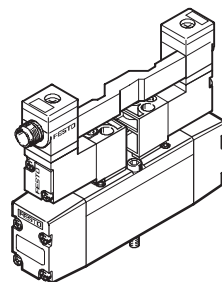
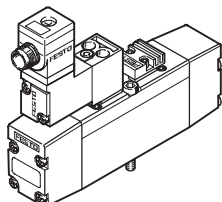
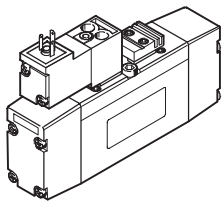
Variants

MN2H-5/2-...

MN2H-5/2-...-ZSR

MN2H-2x3-...-
ZSR, JMN2H-5/2-...-
ZSR, MN2H-5/3-...-ZSR

VSVA-B-...-A1-1R2L
VSVA-B-...-A1-1R5L




Solenoid valves, ISO 15 407-1

Peripherals overview

FESTO

Accessories		
	Brief description	→ Page
1	End plate kit NEV	For sealing the manifold sub-bases 2 / 1.1-66
2	Push-in fitting QS	For connecting compressed air tubing with standard O.D. to CETOP RP 54 P Volume 3
3	Blanking plugs B	For sealing unused ports 2 / 1.1-71
4	Manifold sub-base NAW	With lateral ports 2 and 4 2 / 1.1-66
5	Isolating disc NSC	For sealing the common lines 1, 3, 5 on the manifold sub-base or to create a seal between 2 manifold sub-bases for creating pressure zones 2 / 1.1-69
6	Intermediate plate NZV	For connecting ISO size 01 and ISO size 02 manifold sub-bases 2 / 1.1-67
7	Blanking plate NDV	For sealing vacant valve positions 2 / 1.1-67
8	Silencers U	For fitting in exhaust ports Volume 3
9	Solenoid valve MN2H	Port pattern to ISO 15 407-1, corresponding plug sockets → 2 / 1.1-71 2 / 1.1-2
10	Solenoid valve VSVA	Port pattern to ISO 15 407-1, corresponding plug sockets → 2 / 1.1-71 2 / 1.1-2

 Note

When supplying different pressure zones, both a left and right isolating disc for the pressure supply and for the pilot line are needed for pilot air.

For design reasons, only the silencer U-3/8-B can be screwed into ports 3 and 5 when assembling ISO size 02 mounting rails.


Standard directional control valves
ISO 15 407-1 (VDMA 24 563)


1.1

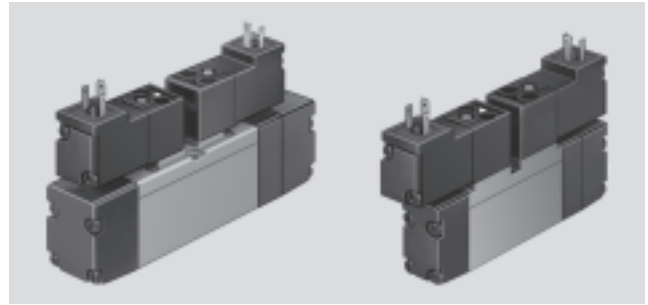
Solenoid valves MN2H, ISO 15 407-1

Technical data – 2x 3/2-way valves



-  - Flow rate
490 ... 950 l/min

-  - Voltage
12, 24 V DC
24, 110, 230 V AC



General technical data			
ISO size	02		01
Valve function	2x 3/2-way, single solenoid		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of reset	Pneumatic spring		
Type of control	Piloted		
Pilot air supply	Internal		
Direction of flow	Non reversible		
Exhaust function	Flow control		
Manual override facility	Via tool accessory, detenting		
Type of mounting	Via through-holes		
Assembly position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	440	950
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$
	12, 14	M5	M5
Product weight	[g]	210	320
Noise level	[dB (A)]	75	

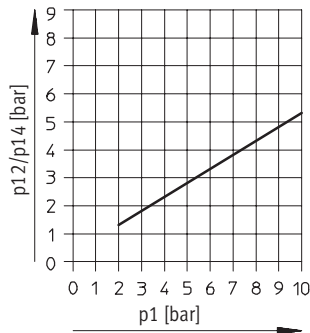
Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	2 ... 10
	External pilot air supply	[bar]	-0.9 ... 10
Pilot pressure	[bar]	2 ... 10 ¹⁾	
Ambient temperature	[°C]	-10 ... +50	
Temperature of medium	[°C]	-10 ... +50	

1) Pilot pressure dependent on operating pressure → Graph

Solenoid valves MN2H, ISO 15 407-1

Technical data – 2x 3/2-way valves

Minimum pilot pressure p12, p14 as a function of the operating pressure p1 (external pilot air supply)

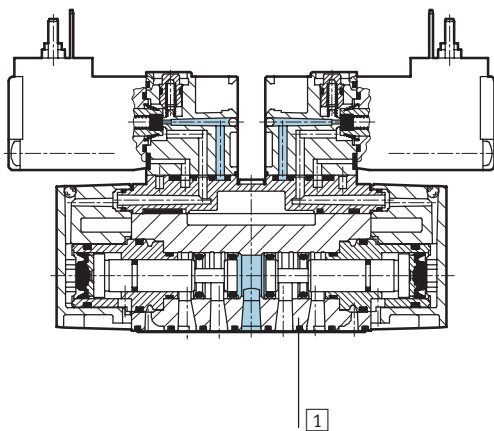


Valve response times [ms]		
ISO size	02	01
On	15	20
Off	16	33

Electrical data			
Electrical connection		Plug, square design to EN 175301-803, type C	
		Central plug, round design, M1 2x1	
Operating voltage	D.C. voltage	[V DC]	12, 24 +10%/-15%
	AC voltage	[V AC]	24, 110/230 ±10% (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	1.5
	AC voltage	[VA]	Pull: 3 Hold: 2.4
Protection class to EN 60 529		IP65 (in combination with plug socket)	
CE symbol		73/23/EEC (low voltage)	

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
Material note		Designs free of copper and PTFE → Ordering data

Solenoid valves MN2H, ISO 15 407-1

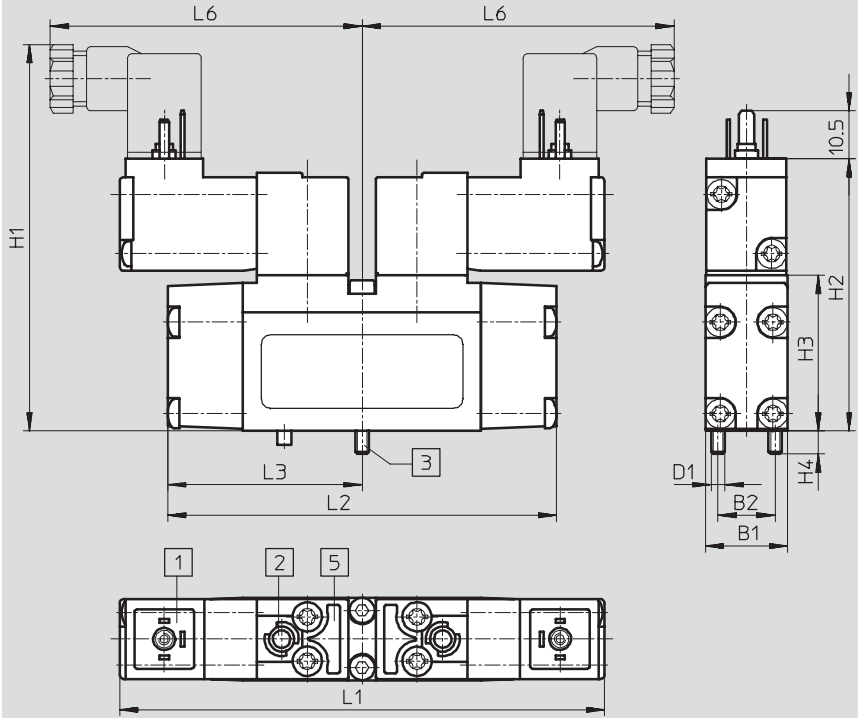
Technical data – 2x 3/2-way valves



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

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



- 1 Plug socket connection pattern to EN 175301-803, type C
- 2 Manual override
- 3 Captive mounting screws
- 5 Slot for inscription clip

ISO size	B1	B2	D1	H1	H2	H3	H4	L1	L2	L3	L6
02	18	12.5	M3	92	59.5	34	5	106	85	42.5	70
01	26.2	19	M4	93	60.5	35	7	108	110	55	71

Solenoid valves MN2H, ISO 15 407-1

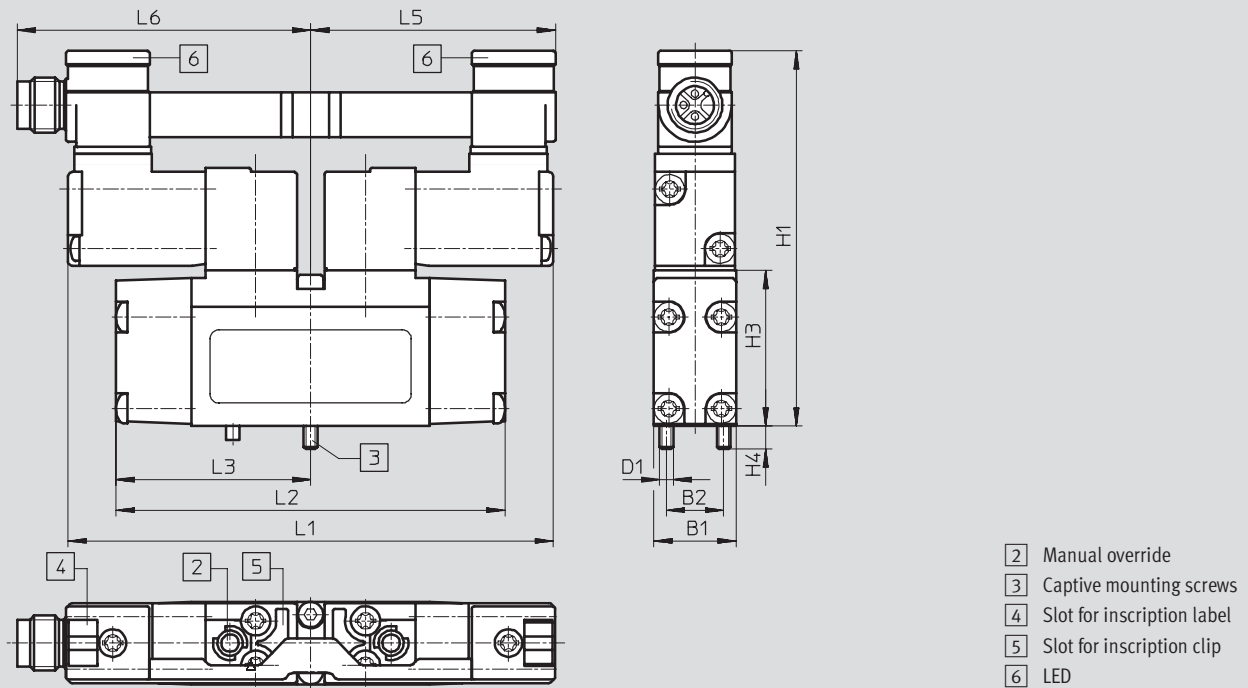
Technical data – 2x 3/2-way valves



Dimensions

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

MN2H-...-ZSR with round central plug

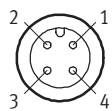


- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label
- 5 Slot for inscription clip
- 6 LED

ISO size	B1	B2	D1	H1	H3	H4	L2	L3	L5	L6
02	18	12.5	M3	82	34	5	85	42.5	52.5	64.2
01	26.2	19	M4	85	35	7	110	55	53.5	65.2

M12 central plug – Terminal allocation

Duo connection



- 1 Unused
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

Solenoid valves MN2H, ISO 15 407-1

Technical data – 2x 3/2-way valves



Ordering data – ISO size 02					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Normally closed, internal pilot air supply	24 V DC	–	187 976	MN2H-2x3G-02²⁾
		12 V DC, 24 V AC	–	191 372	MN2H-2x3G-02-12DCA
		110 V AC	–	191 374	MN2H-2x3G-02-110AC
		230 V AC	–	191 376	MN2H-2x3G-02-230AC
		24 V DC	■	191 370	MN2H-2x3G-02-ZSR
	Normally closed, external pilot air supply	24 V DC	–	187 979	MN2H-2x3G-02-S²⁾
		12 V DC, 24 V AC	–	191 373	MN2H-2x3G-02-S-12DCA
		110 V AC	–	191 375	MN2H-2x3G-02-S-110AC
		230 V AC	–	191 377	MN2H-2x3G-02-S-230AC
		24 V DC	■	191 371	MN2H-2x3G-02-S-ZSR
	Normally open, internal pilot air supply	24 V DC	–	187 977	MN2H-2x3O-02²⁾
		12 V DC, 24 V AC	–	191 380	MN2H-2x3O-02-12DCA
		110 V AC	–	191 382	MN2H-2x3O-02-110AC
		230 V AC	–	191 384	MN2H-2x3O-02-230AC
		24 V DC	■	191 378	MN2H-2x3O-02-ZSR
	Normally open, external pilot air supply	24 V DC	–	187 980	MN2H-2x3O-02-S²⁾
		12 V DC, 24 V AC	–	191 381	MN2H-2x3O-02-S-12DCA
		110 V AC	–	191 383	MN2H-2x3O-02-S-110AC
		230 V AC	–	191 385	MN2H-2x3O-02-S-230AC
		24 V DC	■	191 379	MN2H-2x3O-02-S-ZSR
	Normally 1x closed, 1x open, internal pilot air supply	24 V DC	–	187 978	MN2H-2x3O-G-02²⁾
		12 V DC, 24 V AC	–	191 388	MN2H-2x3O-G-02-12DCA
		110 V AC	–	191 390	MN2H-2x3O-G-02-110AC
		230 V AC	–	191 392	MN2H-2x3O-G-02-230AC
		24 V DC	■	191 386	MN2H-2x3O-G-02-ZSR
	Normally 1x closed, 1x open, external pilot air supply	24 V DC	–	187 981	MN2H-2x3O-G-02-S²⁾
		12 V DC, 24 V AC	–	191 389	MN2H-2x3O-G-02-S-12DCA
		110 V AC	–	191 391	MN2H-2x3O-G-02-S-110AC
		230 V AC	–	191 393	MN2H-2x3O-G-02-S-230AC
		24 V DC	■	191 387	MN2H-2x3O-G-02-S-ZSR

1) Included in the scope of delivery

2) Free of copper and PTFE

Solenoid valves MN2H, ISO 15 407-1



Technical data – 2x 3/2-way valves

Ordering data – ISO size 01					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Normally closed, internal pilot air supply	24 V DC	–	187 970	MN2H-2x3G-01²⁾
		12 V DC, 24 V AC	–	191 342	MN2H-2x3G-01-12DCA
		110 V AC	–	191 344	MN2H-2x3G-01-110AC
		230 V AC	–	191 346	MN2H-2x3G-01-230AC
		24 V DC	■	191 340	MN2H-2x3G-01-ZSR
	Normally closed, external pilot air supply	24 V DC	–	187 973	MN2H-2x3G-01-S²⁾
		12 V DC, 24 V AC	–	191 343	MN2H-2x3G-01-S-12DCA
		110 V AC	–	191 345	MN2H-2x3G-01-S-110AC
		230 V AC	–	191 347	MN2H-2x3G-01-S-230AC
		24 V DC	■	191 341	MN2H-2x3G-01-S-ZSR
	Normally open, internal pilot air supply	24 V DC	–	187 971	MN2H-2x3O-01²⁾
		12 V DC, 24 V AC	–	191 350	MN2H-2x3O-01-12DCA
		110 V AC	–	191 352	MN2H-2x3O-01-110AC
		230 V AC	–	191 354	MN2H-2x3O-01-230AC
		24 V DC	■	191 348	MN2H-2x3O-01-ZSR
	Normally open, external pilot air supply	24 V DC	–	187 974	MN2H-2x3O-01-S²⁾
		12 V DC, 24 V AC	–	191 351	MN2H-2x3O-01-S-12DCA
		110 V AC	–	191 353	MN2H-2x3O-01-S-110AC
		–	–	191 355	MN2H-2x3O-01-S-230AC
		24 V DC	■	191 349	MN2H-2x3O-01-S-ZSR
	Normally 1x closed, 1x open, internal pilot air supply	24 V DC	–	187 972	MN2H-2x3O-G-01²⁾
		12 V DC, 24 V AC	–	191 358	MN2H-2x3O-G-01-12DCA
		110 V AC	–	191 360	MN2H-2x3O-G-01-110AC
		230 V AC	–	191 362	MN2H-2x3O-G-01-230AC
		24 V DC	■	191 356	MN2H-2x3O-G-01-ZSR
	Normally 1x closed, 1x open, external pilot air supply	24 V DC	–	187 975	MN2H-2x3O-G-01-S²⁾
		12 V DC, 24 V AC	–	191 359	MN2H-2x3O-G-01-S-12DCA
		110 V AC	–	191 361	MN2H-2x3O-G-01-S-110AC
		230 V AC	–	191 363	MN2H-2x3O-G-01-S-230AC
		24 V DC	■	191 357	MN2H-2x3O-G-01-S-ZSR


1) Included in the scope of delivery


2) Free of copper and PTFE

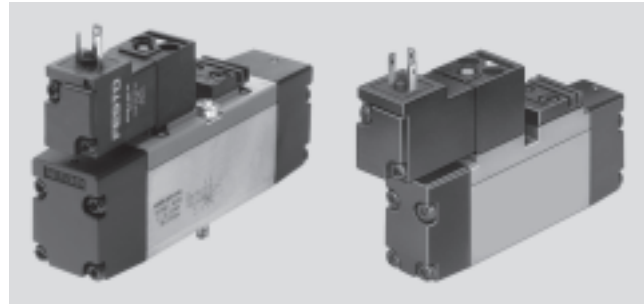
Solenoid valves MN2H, ISO 15 407-1

Technical data 5/2-way valves



-  - Flow rate
500 ... 1,000 l/min

-  - Voltage
12, 24 V DC
24, 110, 230 V AC



General technical data			
ISO size	02		01
Valve function	5/2-way, single solenoid		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of reset	Mechanical or pneumatic spring		
Type of control	Piloted		
Pilot air supply	Internal or external		
Direction of flow	Non reversible		
Exhaust function	Flow control		
Manual override facility	Via tool accessory, detenting		
Type of mounting	Via through-holes		
Assembly position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	500	1,000
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$
	12, 14	M5	M5
Product weight	[g]	160	270
Noise level	[dB (A)]	75	

Operating and environmental conditions					
ISO size	02		01		
Type of reset	Pneumatic		Mechanical		
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum				
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	3 ... 10	2 ... 10
	External pilot air supply	[bar]	-0.9 ... +10	-0.9 ... +10	-0.9 ... +16
Pilot pressure		[bar]	2 ... 10	3 ... 10	2 ... 10
Ambient temperature		[°C]	-10 ... +50		
Temperature of medium		[°C]	-5 ... +50		

Valve response times [ms]				
ISO size	02		01	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical
On	23	18	31	24
Off	27	34	43	58

Solenoid valves MN2H, ISO 15 407-1

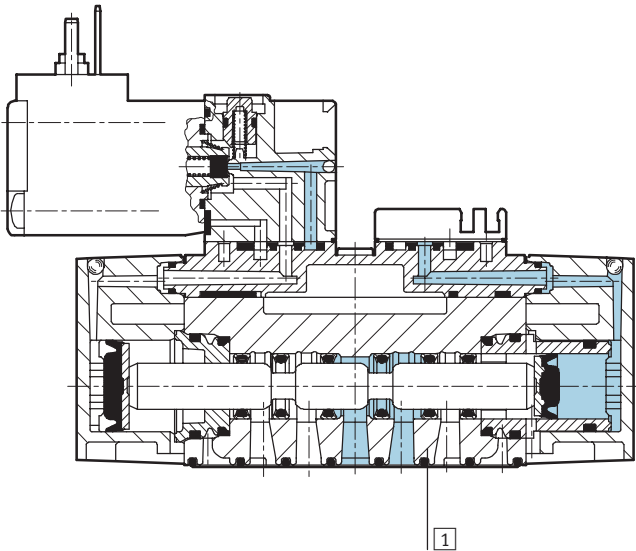
Technical data – 5/2-way valves



Electrical data			
Electrical connection		Plug, square design to EN 175301-803, type C	
		Central plug, round design, M12x1	
Operating voltage	D.C. voltage	[V DC]	12, 24 +10%/-15%
	AC voltage	[V AC]	24, 110/230 ±10% (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	1.5
	AC voltage	[VA]	Pull: 3 Hold: 2.4
Protection class to EN 60 529		IP65 (in combination with plug socket)	
CE symbol		73/23/EEC (low voltage)	

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
Material note		Designs free of copper and PTFE → Ordering data

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/2-way valves



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

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

- 1 Plug socket connection pattern to EN 175301-803, type C
- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label
- 5 Slot for inscription clip

Type	B1	B2	D1	H1	H2	H3	H4	H5	L1	L2	L3	L6
ISO size 02												
MN2H-5/2-...	18	12.5	M3	92	59.5	34	5	39	95.5	85	42.5	70
MN2H-5/2-...-FR									107.5	97		
ISO size 01												
MN2H-5/2-...	26.2	19	M4	93	60.5	35	7	42	109	110	55	71
MN2H-5/2-...-FR												

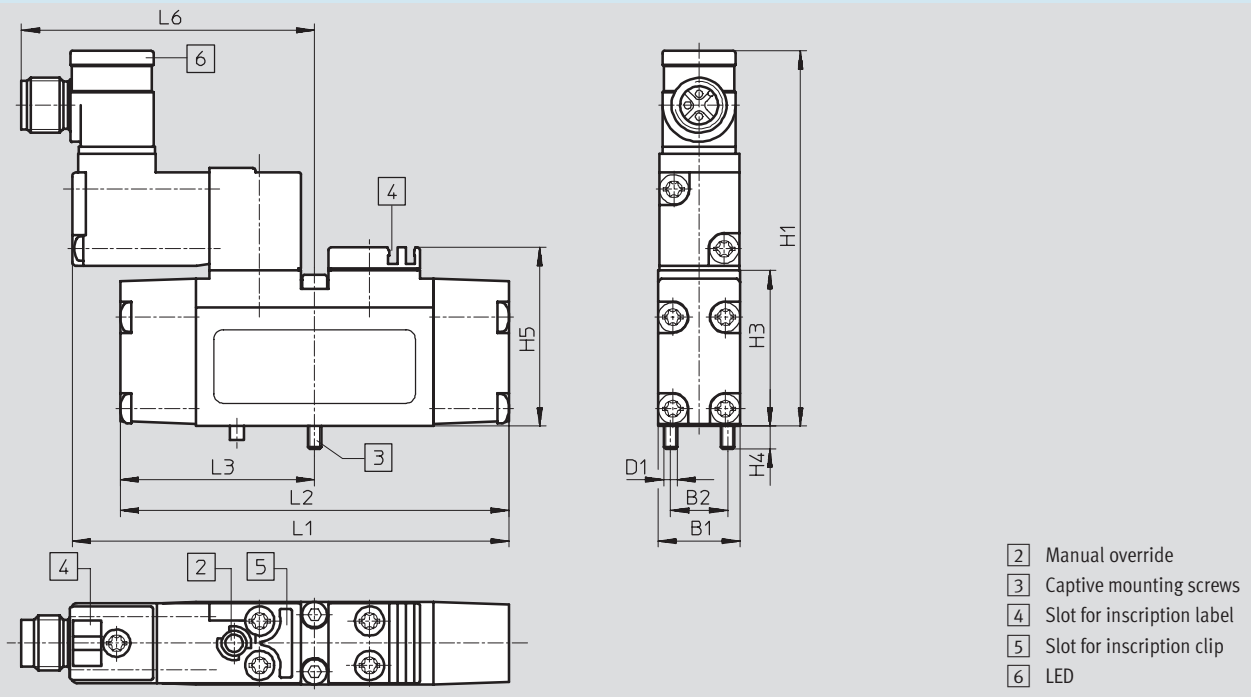
Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/2-way valves



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

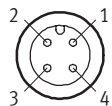
MN2H-...-ZSR with round central plug



Type	B1	B2	D1	H1	H3	H4	H5	L1	L2	L3	L6
ISO size 02											
MN2H-5/2-...-ZSR	18	12.5	M3	82	34	5	39	95.5	85	42.5	64.2
MN2H-5/2-...-FR-ZSR								107.5	97		
ISO size 01											
MN2H-5/2-...-ZSR	26.2	19	M4	85	35	7	42	109	110	55	65.2
MN2H-5/2-...-FR-ZSR											

M12 central plug – Terminal allocation

Mono connection



- 1 Unused
- 2 Unused
- 3 com (-)
- 4 Signal (+) Solenoid 14

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/2-way valves



Ordering data – ISO size 02					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Pneumatic reset, internal pilot air supply	12 V DC, 24 V AC	–	187 890	MN2H-5/2-02-12DCA
		24 V DC	–	161 088	MN2H-5/2-D-02
		24 V DC	–	184 308	MN2H-5/2-D-02-B²⁾
		110 V AC	–	161 908	MN2H-5/2-D-02-110AC
		230 V AC	–	161 922	MN2H-5/2-D-02-230AC
		24 V DC	■	191 323	MN2H-5/2-02-ZSR
	Pneumatic reset, external pilot air supply	12 V DC, 24 V AC	–	187 891	MN2H-5/2-02-S-12DCA
		24 V DC	–	161 089	MN2H-5/2-D-02-S
		24 V DC	–	184 309	MN2H-5/2-D-02-S-B²⁾
		110 V AC	–	161 909	MN2H-5/2-D-02-S-110AC
		230 V AC	–	161 923	MN2H-5/2-D-02-S-230AC
		24 V DC	■	191 324	MN2H-5/2-02-S-ZSR
	Mechanical reset, internal pilot air supply	12 V DC, 24 V AC	–	187 926	MN2H-5/2-02-FR-12DCA
		24 V DC	–	161 090	MN2H-5/2-D-02-FR
		24 V DC	–	184 310	MN2H-5/2-D-02-FR-B²⁾
		110 V AC	–	161 910	MN2H-5/2-D-02-FR-110AC
		230 V AC	–	161 924	MN2H-5/2-D-02-FR-230AC
		24 V DC	■	191 325	MN2H-5/2-02-FR-ZSR
	Mechanical reset, external pilot air supply	12 V DC, 24 V AC	–	187 927	MN2H-5/2-02-FR-S-12DCA
		24 V DC	–	161 091	MN2H-5/2-D-02-FR-S
		24 V DC	–	184 311	MN2H-5/2-D-02-FR-S-B²⁾
		110 V AC	–	161 911	MN2H-5/2-D-02-FR-S-110AC
		230 V AC	–	161 925	MN2H-5/2-D-02-FR-S-230AC
		24 V DC	■	191 326	MN2H-5/2-02-FR-S-ZSR

1) Included in the scope of delivery
2) Free of copper and PTFE

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/2-way valves



Ordering data – ISO size 01					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Pneumatic reset, internal pilot air supply	12 V DC, 24 V AC	–	187 876	MN2H-5/2-01-12DCA
		24 V DC	–	161 067	MN2H-5/2-D-01²⁾
		110 V AC	–	161 880	MN2H-5/2-D-01-110AC
		230 V AC	–	161 894	MN2H-5/2-D-01-230AC
		24 V DC	■	191 309	MN2H-5/2-01-ZSR²⁾
	Pneumatic reset, external pilot air supply	12 V DC, 24 V AC	–	187 877	MN2H-5/2-01-S-12DCA
		24 V DC	–	161 068	MN2H-5/2-D-01-S²⁾
		110 V AC	–	161 881	MN2H-5/2-D-01-S-110AC
		230 V AC	–	161 895	MN2H-5/2-D-01-S-230AC
		24 V DC	■	191 310	MN2H-5/2-01-S-ZSR²⁾
	Mechanical reset, internal pilot air supply	12 V DC, 24 V AC	–	187 878	MN2H-5/2-01-FR-12DCA
		24 V DC	–	161 069	MN2H-5/2-D-01-FR²⁾
		110 V AC	–	161 882	MN2H-5/2-D-01-FR-110AC
		230 V AC	–	161 896	MN2H-5/2-D-01-FR-230AC
		24 V DC	■	191 311	MN2H-5/2-01-FR-ZSR²⁾
	Mechanical reset, external pilot air supply	12 V DC, 24 V AC	–	187 879	MN2H-5/2-01-FR-S-12DCA
		24 V DC	–	161 070	MN2H-5/2-D-01-FR-S²⁾
		110 V AC	–	161 883	MN2H-5/2-D-01-FR-S-110AC
		230 V AC	–	161 897	MN2H-5/2-D-01-FR-S-230AC
		24 V DC	■	191 312	MN2H-5/2-01-FR-S-ZSR²⁾


1) Included in the scope of delivery


2) Free of copper and PTFE

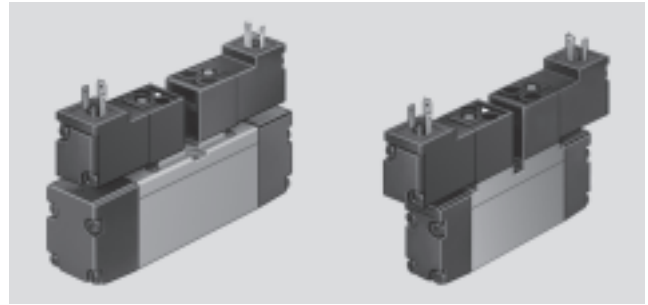
Solenoid valves JMN2H, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid



-  - Flow rate
Size 01: 1,000 l/min.
Size 02: 500 l/min

-  - Voltage
12, 24 V DC
24, 110, 230 V AC



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

General technical data			
ISO size	02		01
Valve function	5/2-way, double pilot		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of control	Piloted		
Pilot air supply	Internal		
Direction of flow	Non reversible		
Exhaust function	Flow control		
Manual override facility	Via tool accessory, detenting		
Type of mounting	Via through-holes		
Assembly position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	500	1,000
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$
	12, 14	M5	M5
Product weight	[g]	210	320
Noise level	[dB (A)]	75	

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	2 ... 10
	External pilot air supply	[bar]	-0.9 ... +10
Pilot pressure	[bar]	2 ... 10	
Ambient temperature	[°C]	-10 ... +50	
Temperature of medium	[°C]	-5 ... +50	

Valve response times [ms]				
ISO size	02		01	
		Dominant signal at 14		Dominant signal at 14
On/changeover	-	16	-	16
Off/changeover	16	16	18	18

Solenoid valves JMN2H, ISO 15 407-1

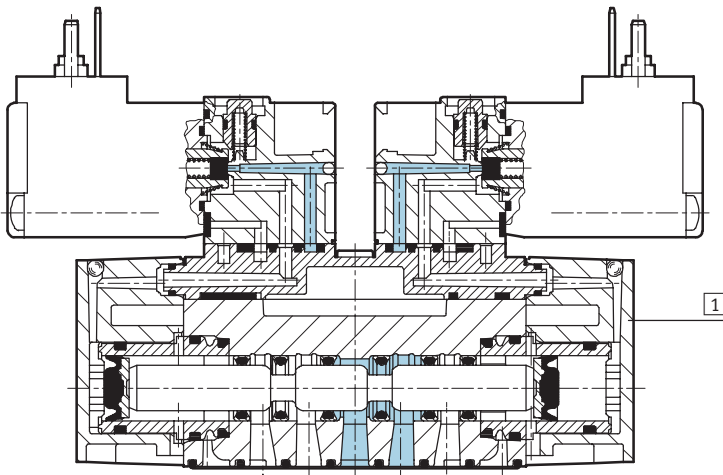
Technical data – 5/2-way valves, double solenoid



Electrical data			
Electrical connection		Plug, square design to EN 175301-803, type C Central plug, round design, M12x1	
Operating voltage	D.C. voltage	[V DC]	12, 24 +10%/-15%
	AC voltage	[V AC]	24, 110/230 ±10% (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	1.5
	AC voltage	[VA]	Pull: 3 Hold: 2.4
Protection class to EN 60 529		IP65 (in combination with plug socket)	
CE symbol		73/23/EEC (low voltage)	

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
	Material note	Designs free of copper and PTFE → Ordering data

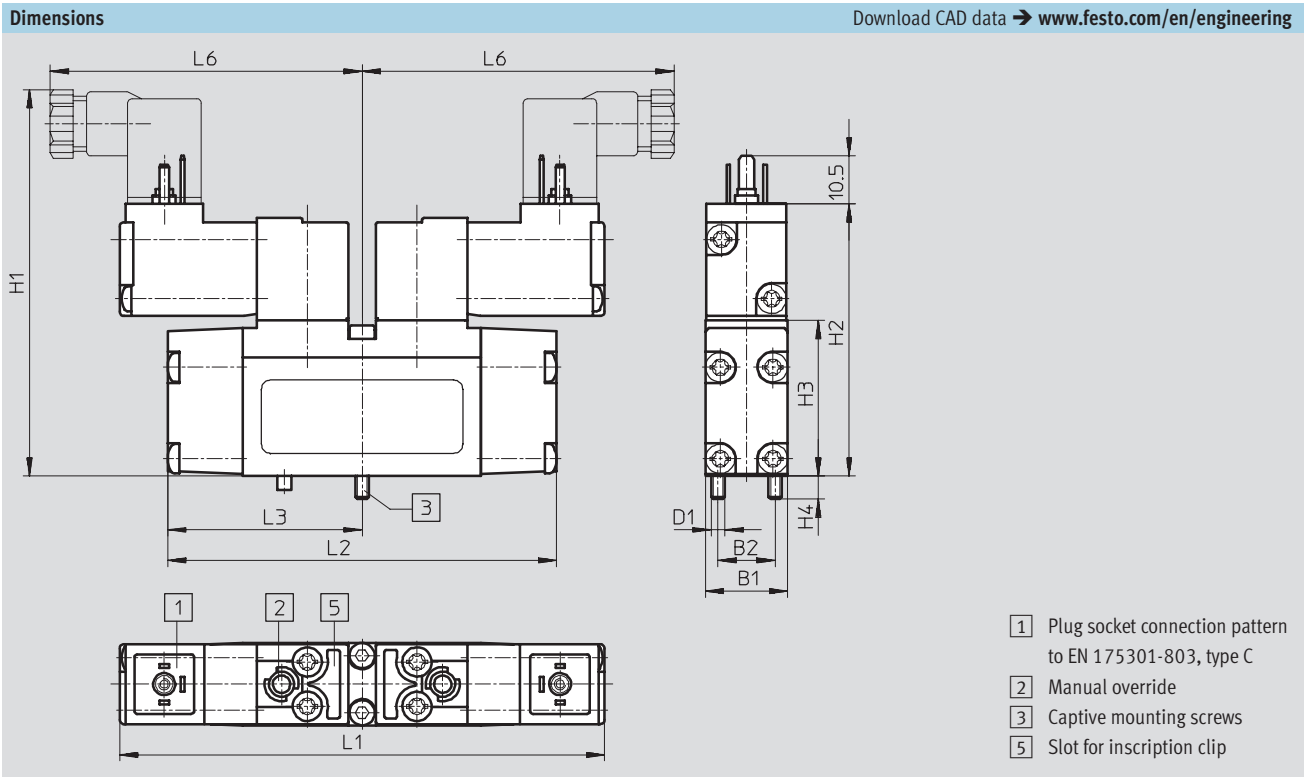
Solenoid valves JMN2H, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1



ISO size	B1	B2	D1	H1	H2	H3	H4	L1	L2	L3	L6
02	18	12.5	M3	92	59.5	34	5	106	85	42.5	70
01	26.2	19	M4	93	60.5	35	7	108	110	55	71

Solenoid valves JMN2H, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid



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

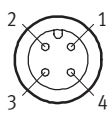
JMN2H/JMN2DH...-ZSR with round central plug

Technical drawing showing three views of the solenoid valve: a front view with dimensions L1, L2, L3, L5, L6 and callouts 2, 3, 4, 5, 6; a side view with dimensions H1, H3, H4 and callouts 2, 3, 4, 5, 6; and a top view with dimensions B1, B2, D1 and callouts 2, 3, 4, 5, 6.

- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label
- 5 Slot for inscription clip
- 6 LED

ISO size	B1	B2	D1	H1	H3	H4	L2	L3	L5	L6
02	18	12.5	M3	82	34	5	85	42.5	52.5	64.2
01	26.2	19	M4	85	35	7	110	55	53.5	65.2

M12 central plug – Terminal allocation
Duo connection



- 1 Unused
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

Standard directional control valves
ISO 15 407-1 (VDMA 24 563)
1.1

Solenoid valves JMN2H, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Ordering data – ISO size 02					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Internal pilot air supply	12 V DC, 24 V AC	–	187 928	JMN2H-5/2-02-12DCA
		24 V DC	–	161 092	JMN2H-5/2-D-02
		110 V AC	–	161 912	JMN2H-5/2-D-02-110AC
		230 V AC	–	161 926	JMN2H-5/2-D-02-230AC
		24 V DC	■	191 333	JMN2H-5/2-02-ZSR
	External pilot air supply	12 V DC, 24 V AC	–	187 929	JMN2H-5/2-02-S-12DCA
		24 V DC	–	161 093	JMN2H-5/2-D-02-S
		110 V AC	–	161 913	JMN2H-5/2-D-02-S-110AC
		230 V AC	–	161 927	JMN2H-5/2-D-02-S-230AC
		24 V DC	■	191 334	JMN2H-5/2-02-S-ZSR
	With dominant signal at 14, internal pilot air supply	12 V DC, 24 V AC	–	187 930	JMN2DH-5/2-02-12DCA
		24 V DC	–	161 094	JMN2DH-5/2-D-02
		110 V AC	–	161 914	JMN2DH-5/2-D-02-110AC
		230 V AC	–	161 928	JMN2DH-5/2-D-02-230AC
		24 V DC	■	191 335	JMN2DH-5/2-02-ZSR
	With dominant signal at 14, external pilot air supply	12 V DC, 24 V AC	–	187 931	JMN2DH-5/2-02-S-12DCA
		24 V DC	–	161 095	JMN2DH-5/2-D-02-S
		110 V AC	–	161 915	JMN2DH-5/2-D-02-S-110AC
		230 V AC	–	161 929	JMN2DH-5/2-D-02-S-230AC
		24 V DC	■	191 336	JMN2DH-5/2-02-S-ZSR

1) Included in the scope of delivery

Solenoid valves JMN2H, ISO 15 407-1



Technical data – 5/2-way valves, double solenoid

Ordering data – ISO size 01					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Internal pilot air supply	12 V DC, 24 V AC	–	187 880	JMN2H-5/2-01-12DCA
		24 V DC	–	161 071	JMN2H-5/2-D-01²⁾
		110 V AC	–	161 884	JMN2H-5/2-D-01-110AC
		230 V AC	–	161 898	JMN2H-5/2-D-01-230AC
		24 V DC	■	191 319	JMN2H-5/2-01-ZSR²⁾
	External pilot air supply	12 V DC, 24 V AC	–	187 881	JMN2H-5/2-01-S-12DCA
		24 V DC	–	161 072	JMN2H-5/2-D-01-S²⁾
		110 V AC	–	161 885	JMN2H-5/2-D-01-S-110AC
		230 V AC	–	161 899	JMN2H-5/2-D-01-S-230AC
		24 V DC	■	191 320	JMN2H-5/2-01-S-ZSR²⁾
	With dominant signal at 14, internal pilot air supply	12 V DC, 24 V AC	–	187 882	JMN2DH-5/2-01-12DCA
		24 V DC	–	161 073	JMN2DH-5/2-D-01²⁾
		110 V AC	–	161 886	JMN2DH-5/2-D-01-110AC
		230 V AC	–	161 900	JMN2DH-5/2-D-01-230AC
		24 V DC	■	191 321	JMN2DH-5/2-01-ZSR²⁾
	With dominant signal at 14, external pilot air supply	12 V DC, 24 V AC	–	187 883	JMN2DH-5/2-01-S-12DCA
		24 V DC	–	161 074	JMN2DH-5/2-D-01-S²⁾
		110 V AC	–	161 887	JMN2DH-5/2-D-01-S-110AC
		230 V AC	–	161 901	JMN2DH-5/2-D-01-S-230AC
		24 V DC	■	191 322	JMN2DH-5/2-01-S-ZSR²⁾



1) Included in the scope of delivery

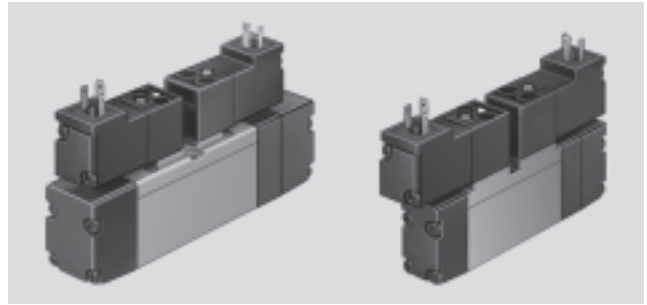
2) Free of copper and PTFE

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/3-way valves



-  - Flow rate
500 ... 1,000 l/min
-  - Voltage
12, 24 V DC
24, 110, 230 V AC



General technical data			
ISO size	02		01
Valve function	5/3-way, single solenoid		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of reset	Mechanical spring		
Type of control	Piloted		
Pilot air supply	Internal		
Direction of flow	Non reversible		
Exhaust function	Flow control		
Manual override facility	Via tool accessory, detenting		
Type of mounting	Via through-holes		
Assembly position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	500	1,000
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$
	12, 14	M5	M5
Product weight	[g]	220	340
Noise level	[dB (A)]	75	

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	3 ... 10
	External pilot air supply	[bar]	-0.9 ... +10
Pilot pressure	[bar]	3 ... 10	
Ambient temperature	[°C]	-10 ... +50	
Temperature of medium	[°C]	-5 ... +50	

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/3-way valves

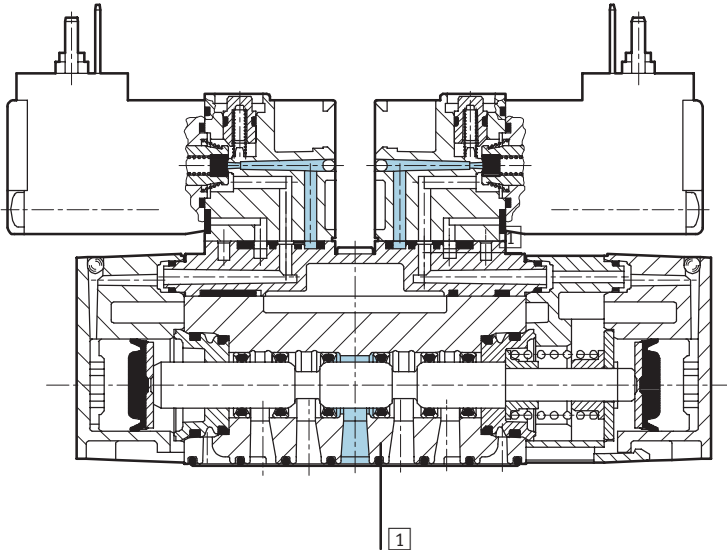


Valve response times [ms]			
ISO size		02	01
Closed	On	17	23
	Off	22	52
Exhausted	On	18	23
	Off	28	52
Pressurised	On	18	23
	Off	30	52

Electrical data			
Electrical connection	Construction		Plug, square design to EN 175301-803, type C Central plug, round design, M12x1
Operating voltage	D.C. voltage	[V DC]	12, 24 +10 %/-15 %
	AC voltage	[V AC]	24, 110/230 ±10 % (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	1.5
	AC voltage	[VA]	Pull: 3 Hold: 2.4
Protection class to EN 60 529			IP65 (in combination with plug socket)
CE certification			In accordance with EU Directive 73/23/EEC

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
Material note		Designs free of copper and PTFE → Ordering data

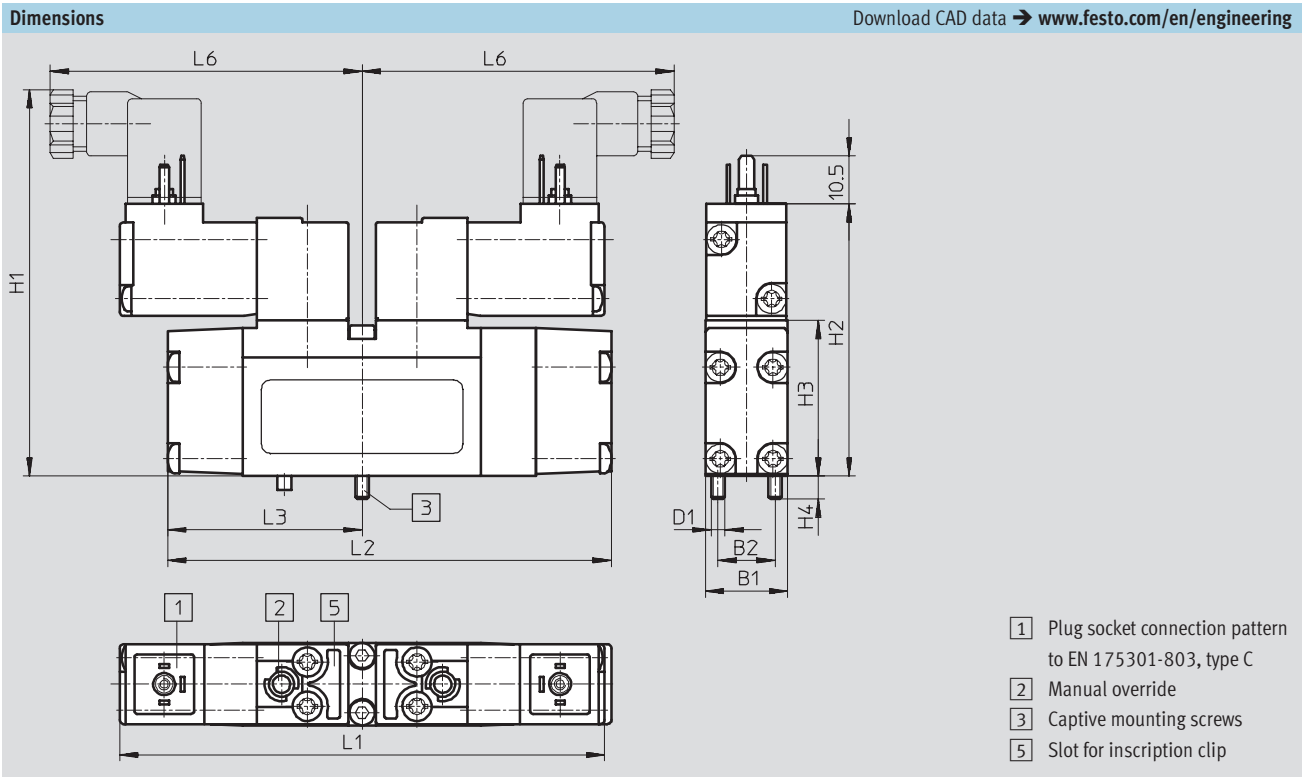
Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/3-way valves



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1



ISO size	B1	B2	D1	H1	H2	H3	H4	L1	L2	L3	L6
02	18	12.5	M3	92	59.5	34	5	106	97	42.5	70
01	26.2	19	M4	93	60.5	35	7	108	124	55	71

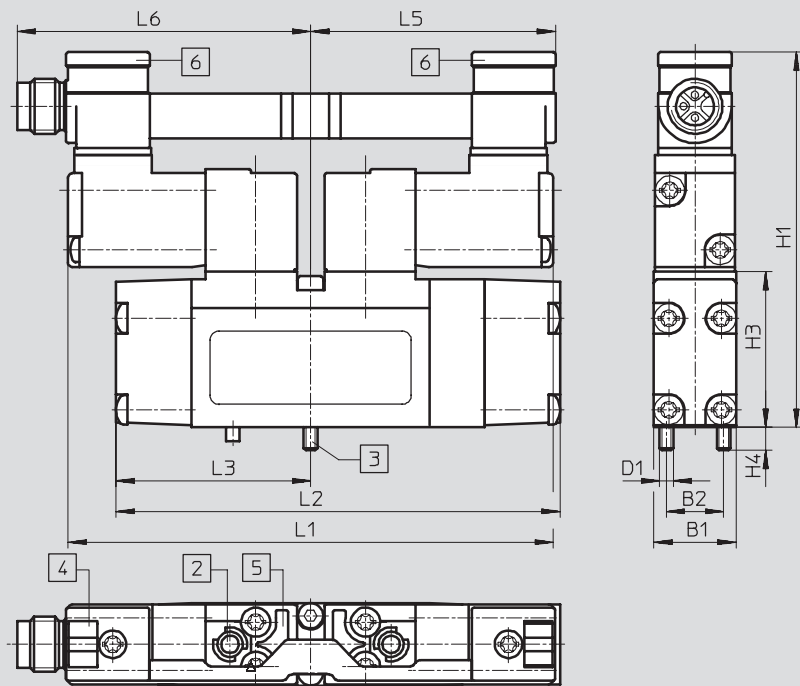
Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/3-way valves



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

MN2H-...-ZSR with round central plug

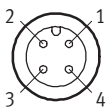


- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label
- 5 Slot for inscription clip
- 6 LED

ISO size	B1	B2	D1	H1	H3	H4	L2	L3	L4	L6
02	18	12.5	M3	82	34	5	97	42.5	52.5	64.2
01	26.2	19	M4	85	35	7	124	55	53.5	65.2

M12 central plug – Terminal allocation

Duo connection



- 1 Unused
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

Solenoid valves MN2H, ISO 15 407-1

Technical data – 5/3-way valves



Ordering data – ISO size 02					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Normally closed, internal pilot air supply	12 V DC, 24 V AC	–	187 932	MN2H-5/3G-02-12DCA
		24 V DC	–	161 096	MN2H-5/3G-D-02
		24 V DC	–	184 316	MN2H-5/3G-D-02-B²⁾
		110 V AC	–	161 916	MN2H-5/3G-D-02-110AC
		230 V AC	–	161 930	MN2H-5/3G-D-02-230AC
		24 V DC	■	191 327	MN2H-5/3G-02-ZSR
	Normally closed, external pilot air supply	12 V DC, 24 V AC	–	187 933	MN2H-5/3G-02-S-12DCA
		24 V DC	–	161 097	MN2H-5/3G-D-02-S
		24 V DC	–	184 317	MN2H-5/3G-D-02-S-B²⁾
		230 V AC	–	161 917	MN2H-5/3G-D-02-S-110AC
		230 V AC	–	161 931	MN2H-5/3G-D-02-S-230AC
		24 V DC	■	191 328	MN2H-5/3G-02-S-ZSR
	Normally exhausted, internal pilot air supply	12 V DC, 24 V AC	–	187 934	MN2H-5/3E-02-12DCA
		24 V DC	–	161 098	MN2H-5/3E-D-02
		24 V DC	–	184 314	MN2H-5/3E-D-02-B²⁾
		110 V AC	–	161 918	MN2H-5/3E-D-02-110AC
		230 V AC	–	161 932	MN2H-5/3E-D-02-230AC
		24 V DC	■	191 329	MN2H-5/3E-02-ZSR
	Normally exhausted, external pilot air supply	12 V DC, 24 V AC	–	187 935	MN2H-5/3E-02-S-12DCA
		24 V DC	–	161 099	MN2H-5/3E-D-02-S
		24 V DC	–	184 315	MN2H-5/3E-D-02-S-B²⁾
		110 V AC	–	161 919	MN2H-5/3E-D-02-S-110AC
		230 V AC	–	161 933	MN2H-5/3E-D-02-S-230AC
		24 V DC	■	191 330	MN2H-5/3E-02-S-ZSR
	Normally pressurised, internal pilot air supply	12 V DC, 24 V AC	–	187 936	MN2H-5/3B-02-12DCA
		24 V DC	–	161 100	MN2H-5/3B-D-02
		24 V DC	–	184 312	MN2H-5/3B-D-02-B²⁾
		110 V AC	–	161 920	MN2H-5/3B-D-02-110AC
		230 V AC	–	161 934	MN2H-5/3B-D-02-230AC
		24 V DC	■	191 331	MN2H-5/3B-02-ZSR
	Normally pressurised, external pilot air supply	12 V DC, 24 V AC	–	187 937	MN2H-5/3B-02-S-12DCA
		24 V DC	–	161 101	MN2H-5/3B-D-02-S
		24 V DC	–	184 313	MN2H-5/3B-D-02-S-B²⁾
		110 V AC	–	161 921	MN2H-5/3B-D-02-S-110AC
		230 V AC	–	161 935	MN2H-5/3B-D-02-S-230AC
		24 V DC	■	191 332	MN2H-5/3B-02-S-ZSR

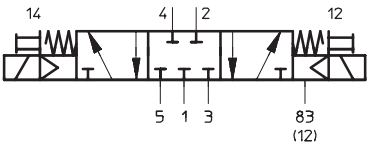
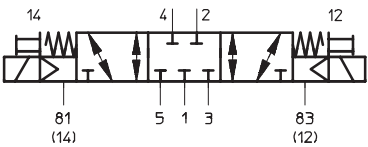
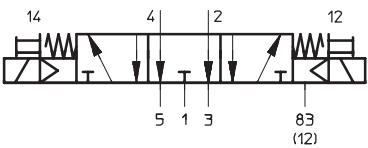
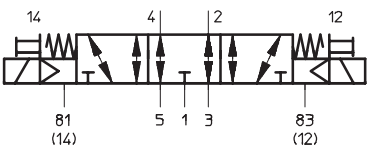
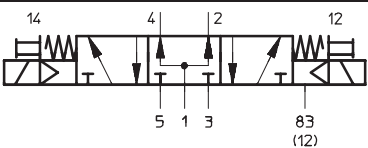
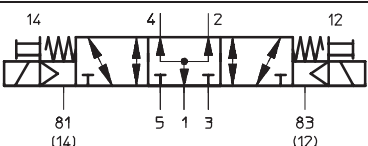
1) Included in the scope of delivery

2) Free of copper and PTFE

Solenoid valves MN2H, ISO 15 407-1



Technical data – 5/3-way valves


Ordering data – ISO size 01					
Circuit symbol	Description	Voltage	Central plug ¹⁾	Part No.	Type
	Normally closed, internal pilot air supply	12 V DC, 24 V AC	–	187 884	MN2H-5/3G-01-12DCA
		24 V DC	–	161 075	MN2H-5/3G-D-01²⁾
		110 V AC	–	161 888	MN2H-5/3G-D-01-110AC
		230 V AC	–	161 902	MN2H-5/3G-D-01-230AC
		24 V DC	■	191 313	MN2H-5/3G-01-ZSR²⁾
	Normally closed, external pilot air supply	12 V DC, 24 V AC	–	187 885	MN2H-5/3G-01-S-12DCA
		24 V DC	–	161 076	MN2H-5/3G-D-01-S²⁾
		110 V AC	–	161 889	MN2H-5/3G-D-01-S-110AC
		230 V AC	–	161 903	MN2H-5/3G-D-01-S-230AC
		24 V DC	■	191 314	MN2H-5/3G-01-S-ZSR²⁾
	Normally exhausted, internal pilot air supply	12 V DC, 24 V AC	–	187 886	MN2H-5/3E-01-12DCA
		24 V DC	–	161 077	MN2H-5/3E-D-01²⁾
		110 V AC	–	161 890	MN2H-5/3E-D-01-110AC
		230 V AC	–	161 904	MN2H-5/3E-D-01-230AC
		24 V DC	■	191 315	MN2H-5/3E-01-ZSR²⁾
	Normally exhausted, external pilot air supply	12 V DC, 24 V AC	–	187 887	MN2H-5/3E-01-S-12DCA
		24 V DC	–	161 078	MN2H-5/3E-D-01-S²⁾
		110 V AC	–	161 891	MN2H-5/3E-D-01-S-110AC
		230 V AC	–	161 905	MN2H-5/3E-D-01-S-230AC
		24 V DC	■	191 316	MN2H-5/3E-01-S-ZSR²⁾
	Normally pressurised, internal pilot air supply	12 V DC, 24 V AC	–	187 888	MN2H-5/3B-01-12DCA
		24 V DC	–	161 079	MN2H-5/3B-D-01²⁾
		110 V AC	–	161 892	MN2H-5/3B-D-01-110AC
		230 V AC	–	161 906	MN2H-5/3B-D-01-230AC
		24 V DC	■	191 317	MN2H-5/3B-01-ZSR²⁾
	Normally pressurised, external pilot air supply	12 V DC, 24 V AC	–	187 889	MN2H-5/3B-01-S-12DCA
		24 V DC	–	161 080	MN2H-5/2-D-01-S²⁾
		110 V AC	–	161 893	MN2H-5/3B-D-01-S-110AC
		230 V AC	–	161 907	MN2H-5/3B-D-01-S-230AC
		24 V DC	■	191 318	MN2H-5/3B-01-S-ZSR²⁾


1) Included in the scope of delivery

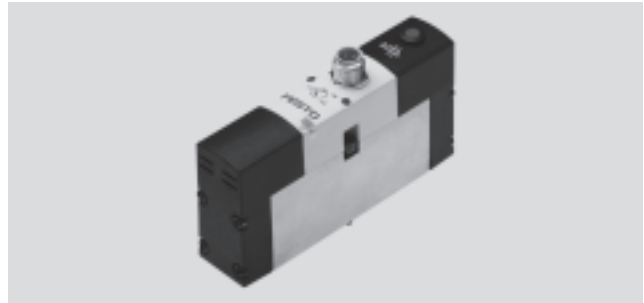
2) Free of copper and PTFE

Solenoid valves VSVA, ISO 15 407-1

Technical data – 2x 3/2-way valves

-  - Flow rate
500 / 1,000 l/min

-  - Voltage
24 V DC



General technical data			
ISO size		02	01
Valve function		2x 3/2-way, monostable	
Constructional design		Piston spool	
Sealing principle		Soft	
Actuation type		Electrical	
Type of reset		Pneumatic spring	
Type of control		Piloted	
Pilot air supply		Internal or external	
Direction of flow		Non reversible	
Exhaust function		Flow control	
Manual override facility		Resetting	
Type of mounting		Via through-holes	
Tightening torque for valves mounting		[Nm]	0.68...0.92
Assembly position		Any	
Nominal size		[mm]	5
Standard nominal flow rate		[l/min]	500
Grid dimension		[mm]	19
Corrosion resistance class		CRC	2
Pneumatic connection		1, 2, 3, 4, 5	G $\frac{1}{8}$
		12, 14	M5
Product weight		[g]	140
			270

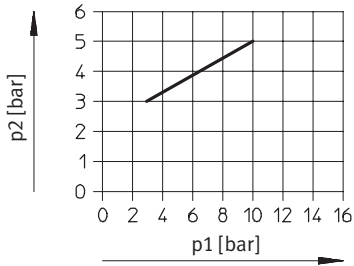
Operating and environmental conditions			
ISO size		02	01
Operating medium		Filtered compressed air, lubricated or unlubricated, 40 μ m filtration	
Operating pressure		Internal pilot air supply [bar]	3 ... 8
		External pilot air supply [bar]	3... 10
Pilot pressure		[bar]	3 ... 8 ¹⁾
Ambient temperature		[°C]	-5 ... +50
Temperature of medium		[°C]	-5 ... +50
Flammability tested to UL94		V0	

1) Pilot pressure dependent on operating pressure → Graph

Solenoid valves VSVA, ISO 15 407-1

Technical data – 2x 3/2-way valves

Minimum pilot pressure p12, p14 as a function of the operating pressure p1 (external pilot air supply)

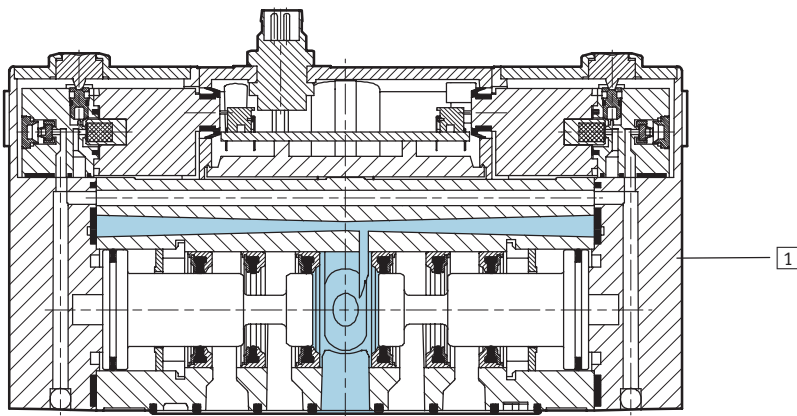


Valve response times [ms]		
ISO size	02	01
On	10	20
Off	22	33

Elektrische Daten/Electrical data			
ISO size	02		01
Electrical connection according to IEC 60 947-5-2	Central plug, round design, M8x1		Central plug, round design, M12x1
Coil characteristics	Voltage	[V DC]	21.6...26.4
	Power	[W]	2.4
Duty cycle	%		100
Protection class to EN 60 529	IP65 (in combination with plug socket)		
Protective circuit and LED	Integrated in the valve		
CE symbol	89/336/EEC (EMC)		

Materials

Sectional view



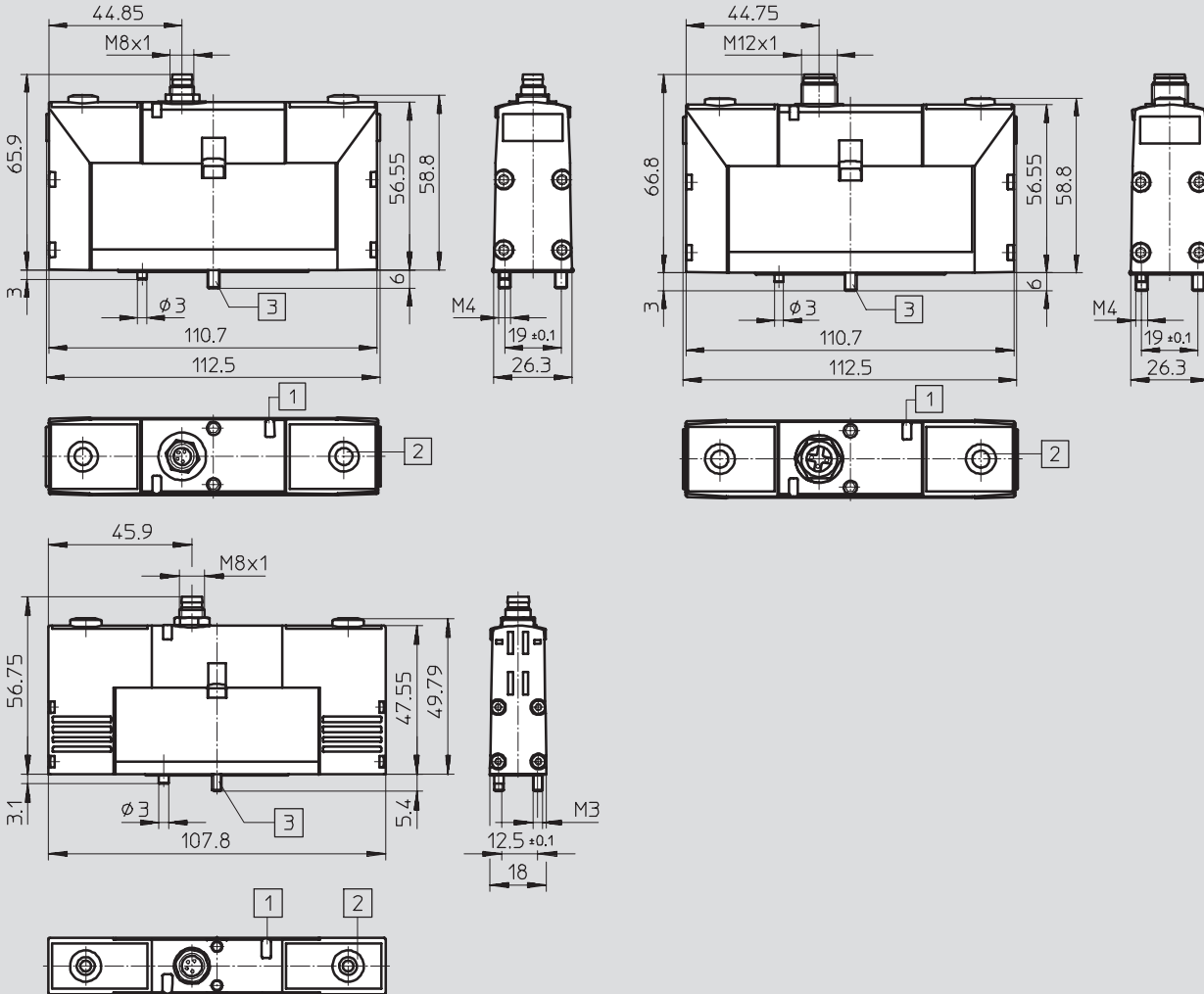
1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
-	Material note	Free of copper and PTFE

Solenoid valves VSVA, ISO 15 407-1

Technical data – 2x 3/2-way valves, solenoid valves

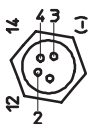
Dimensions

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



- 1 Light emitting diode (LED)
- 2 Manual override
- 3 Captive mounting screws

M8x1 – Terminal allocation



- 1 Unused
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

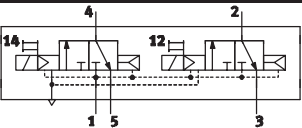
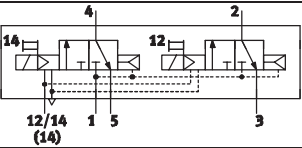
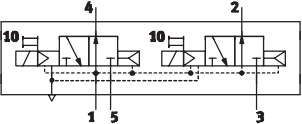
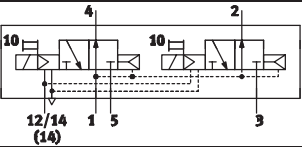
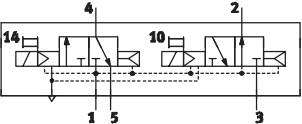
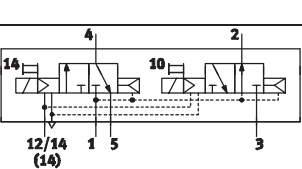
M12x1 – Terminal allocation



- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14


Solenoid valves VSVA, ISO 15 407-1

Technical data – 2x 3/2-way valves

Ordering data					
Circuit symbol	Description	Central plug	ISO size	Part No.	Type
	Normally position: - closed Pilot air supply: - internal	M8x1	02	534 771	VSVA-B-T32C-AH-A2-1R2L
			01	534 532	VSVA-B-T32C-AH-A1-1R2L
		M12x1	01	534 552	VSVA-B-T32C-AH-A1-1R5L
	Normally position: - closed Pilot air supply: - external	M8x1	02	534 781	VSVA-B-T32C-AZH-A2-1R2L
			01	534 522	VSVA-B-T32C-AZH-A1-1R2L
		M12x1	01	534 542	VSVA-B-T32C-AZH-A1-1R5L
	Normally position: - open Pilot air supply: - internal	M8x1	02	534 772	VSVA-B-T32U-AH-A2-1R2L
			01	534 533	VSVA-B-T32U-AH-A1-1R2L
		M12x1	01	534 553	VSVA-B-T32U-AH-A1-1R5L
	Normally position: - open Pilot air supply: - external	M8x1	02	534 782	VSVA-B-T32U-AZH-A2-1R2L
			01	534 523	VSVA-B-T32U-AZH-A1-1R2L
		M12x1	01	534 543	VSVA-B-T32U-AZH-A1-1R5L
	Normally position: - 1x closed - 1x open Pilot air supply: - internal	M8x1	02	534 773	VSVA-B-T32H-AH-A2-1R2L
			01	534 534	VSVA-B-T32H-AH-A1-1R2L
		M12x1	01	534 554	VSVA-B-T32H-AH-A1-1R5L
	Normally position: - 1x closed - 1x open Pilot air supply: - external	M8x1	02	534 783	VSVA-B-T32H-AZH-A2-1R2L
			01	534 524	VSVA-B-T32H-AZH-A1-1R2L
		M12x1	01	534 544	VSVA-B-T32H-AZH-A1-1R5L

Solenoid valves VSVA, ISO 15 407-1

Technical data 5/2-way valves, single solenoid

-  - Flow rate
500/1,000 l/min

-  - Voltage
24 V DC



General technical data			
ISO size	02		01
Valve function	5/2-way, monostable		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of reset	Mechanical or pneumatic spring		
Type of control	Piloted		
Pilot air supply	Internal or external		
Direction of flow	Reversible with external pilot air supply		
Exhaust function	Flow control		
Manual override facility	Resetting		
Type of mounting	Via through-holes		
Tightening torque for valves mounting	[Nm]	0.68...0.92	1.62...218
Assembly position	Any		
Nominal size	[mm]	5	9
Standard nominal flow rate	[l/min]	500	1,000
Grid dimension	[mm]	19	27
Corrosion resistance class	CRC	2	
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{1}{8}$	G $\frac{1}{4}$
	12, 14	M5	
Product weight	[g]	140	270

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated, 40 μ m filtration Vacuum		
Operating pressure	Internal pilot air supply	[bar]	3 ... 8
	External pilot air supply	[bar]	-0.9 ... +10
Pilot pressure	[bar]		-0.9 ... +16
Ambient temperature	[°C]	3 ... 8	
Temperature of medium	[°C]	-5 ... +50	
Flammability tested to UL94		V0	

Valve response times [ms]				
ISO size	02		01	
	Pneumatic	Mechanical	Pneumatic	Mechanical
On	20	12	25	20
Off	25	34	40	52

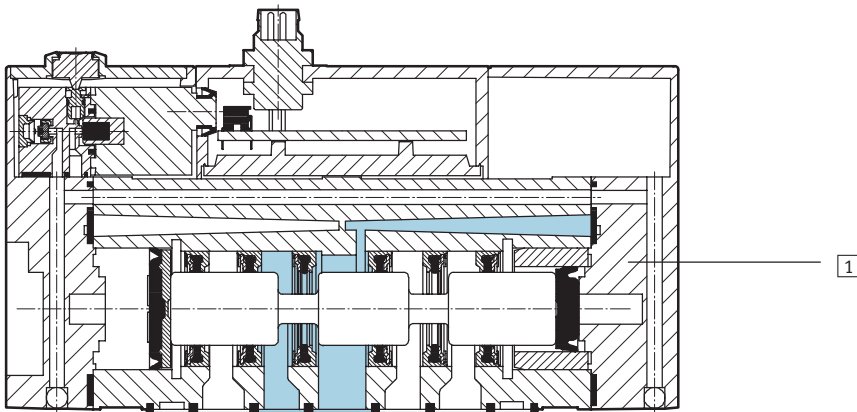
Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves

Electrical data			
ISO size		02	01
Electrical connection according to IEC 60 947-5-2		Central plug, round design, M8x1	
		Central plug, round design, M12x1	
Coil characteristics	Voltage	[V DC]	21.6...26.4
	Power	[W]	2.4
Duty cycle		%	100
Protection class to EN 60 529		IP65 (in combination with plug socket)	
Protective circuit and LED		Integrated in the valve	
CE symbol		89/336/EEC (EMC)	

Materials

Sectional view



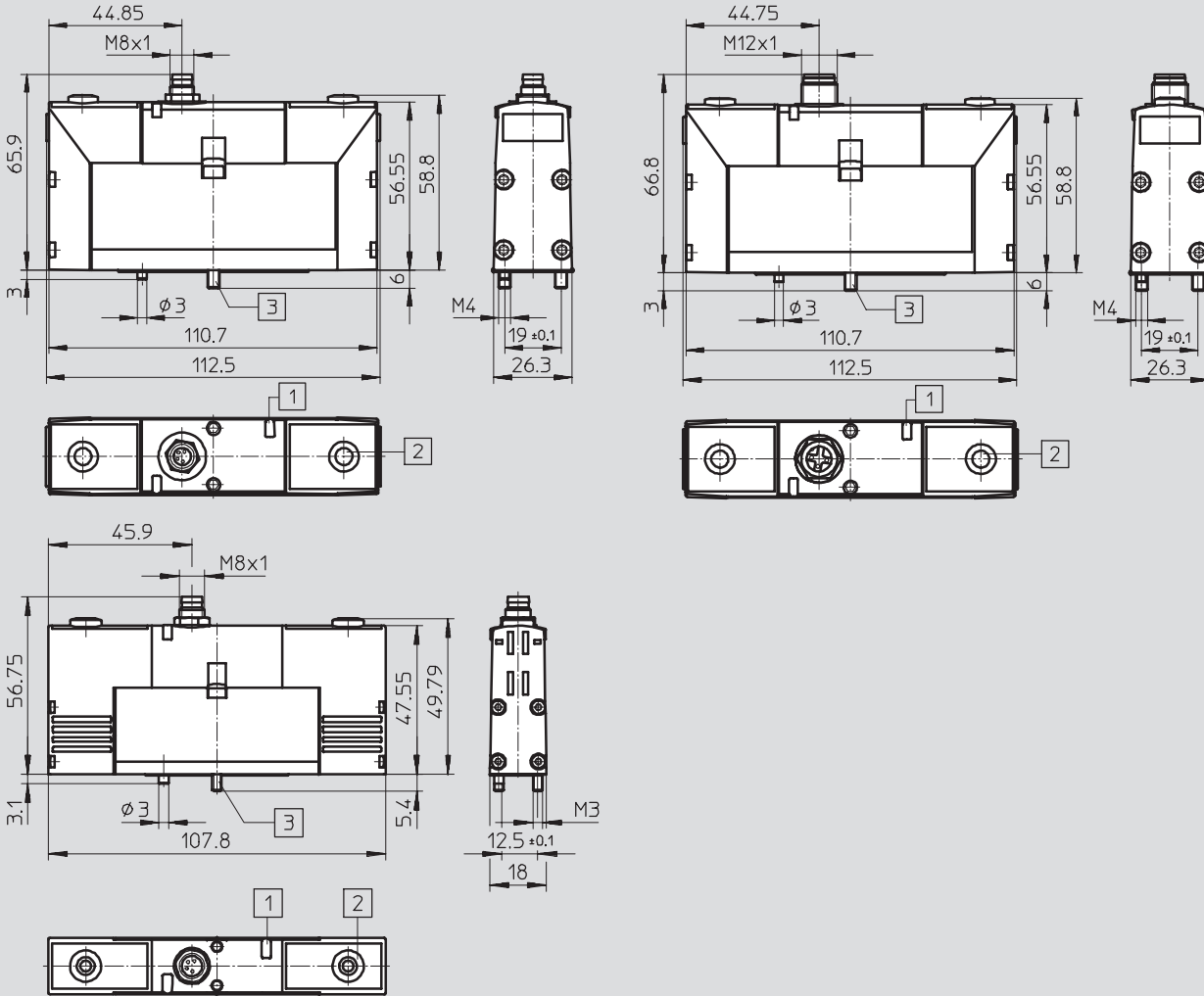
1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
	Material note	Free of copper and PTFE

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves

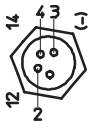
Dimensions

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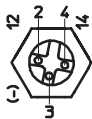
- 1 Light emitting diode (LED)
- 2 Manual override
- 3 Captive mounting screws

M8x1 – Terminal allocation



- 1 Unused
- 2 Unused
- 3 com (-)
- 4 Signal (+) Solenoid 14

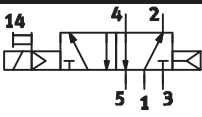
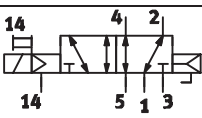
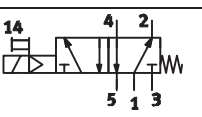
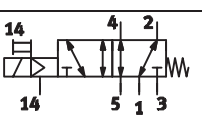
M12x1 – Terminal allocation



- 2 Unused
- 3 com (-)
- 4 Signal (+) Solenoid 14


Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves

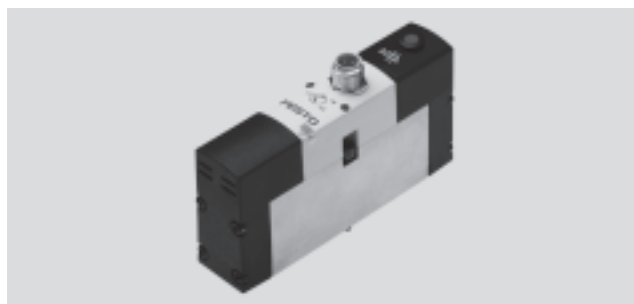
Ordering data					
Circuit symbol	Description	Central plug	ISOsize	Part No.	Type
	Reset: – pneumatic Pilot air supply: – internal	M8x1	02	534 774	VSVA-B-M52-AH-A2-1R2L
			01	534 535	VSVA-B-M52-AH-A1-1R2L
		M12x1	01	534 555	VSVA-B-M52-AH-A1-1R5L
	Reset: – pneumatic Pilot air supply: – external	M8x1	02	534 784	VSVA-B-M52-AZH-A2-1R2L
			01	534 525	VSVA-B-M52-AZH-A1-1R2L
		M12x1	01	534 545	VSVA-B-M52-AZH-A1-1R5L
	Reset: – mechanical Pilot air supply: – internal	M8x1	02	534 775	VSVA-B-M52-MH-A2-1R2L
			01	534 536	VSVA-B-M52-MH-A1-1R2L
		M12x1	01	534 556	VSVA-B-M52-MH-A1-1R5L
	Reset: – mechanical Pilot air supply: – external	M8x1	02	534 785	VSVA-B-M52-MZH-A1-1R2L
			01	534 526	VSVA-B-M52-MZH-A2-1R2L
		M12x1	01	534 546	VSVA-B-M52-MZH-A1-1R5L

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid valves

 Flow rate
1,000 l/min

 Voltage
24 V DC



General technical data			
ISO size	02		01
Valve function	5/2-way, bistable		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Electrical		
Type of control	Piloted		
Pilot air supply	Internal or external		
Direction of flow	Reversible with external pilot air supply		
Exhaust function	Flow control		
Manual override facility	Resetting		
Type of mounting	Via through-holes		
Tightening torque for valves mounting	[Nm]	0.68...0.92	1.62...218
Assembly position	Any		
Nominal size	[mm]	5	9
Standard nominal flow rate	[l/min]	500	1,000
Grid dimension	[mm]	19	27
Corrosion resistance class	CRC	2	
Pneumatic connection	1, 2, 3, 4, 5 12, 14	G $\frac{1}{8}$ M5	G $\frac{1}{4}$
Product weight	[g]	140	270

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated, 40 μ m filtration Vacuum		
Operating pressure	Internal pilot air supply [bar]	3 ... 8	
	External pilot air supply [bar]	-0.9 ... +10	-0.9 ... +16
Pilot pressure	[bar]	3 ... 8	
Ambient temperature	[°C]	-5 ... +50	
Temperature of medium	[°C]	-5 ... +50	
Flammability tested to UL94	V0		

Valve response times [ms]			
ISO size	02		01
		Dominant signal at 14	Dominant signal at 14
Changeover	10	15	25

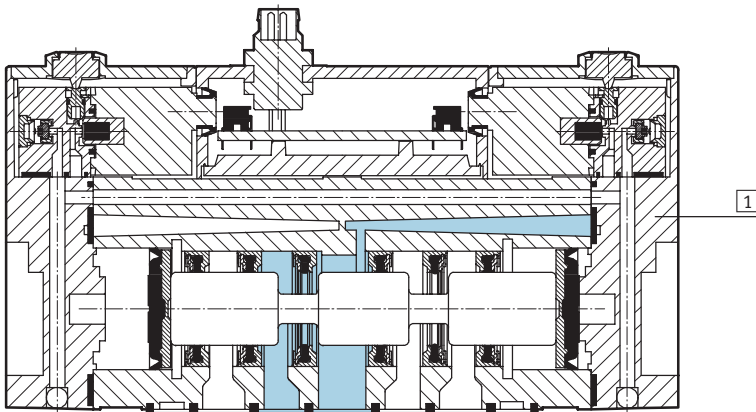
Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid valves

Electrical data			
ISO size		02	01
Electrical connection according to IEC 60 947-5-2		Central plug, round design, M8x1	
		Central plug, round design, M12x1	
Coil characteristics	Voltage	[V DC]	21.6...26.4
	Power	[W]	2.4
Duty cycle		%	100
Protection class to EN 60 529		IP65 (in combination with plug socket)	
Protective circuit and LED		Integrated in the valve	
CE symbol		89/336/EEC (EMC)	

Materials

Sectional view



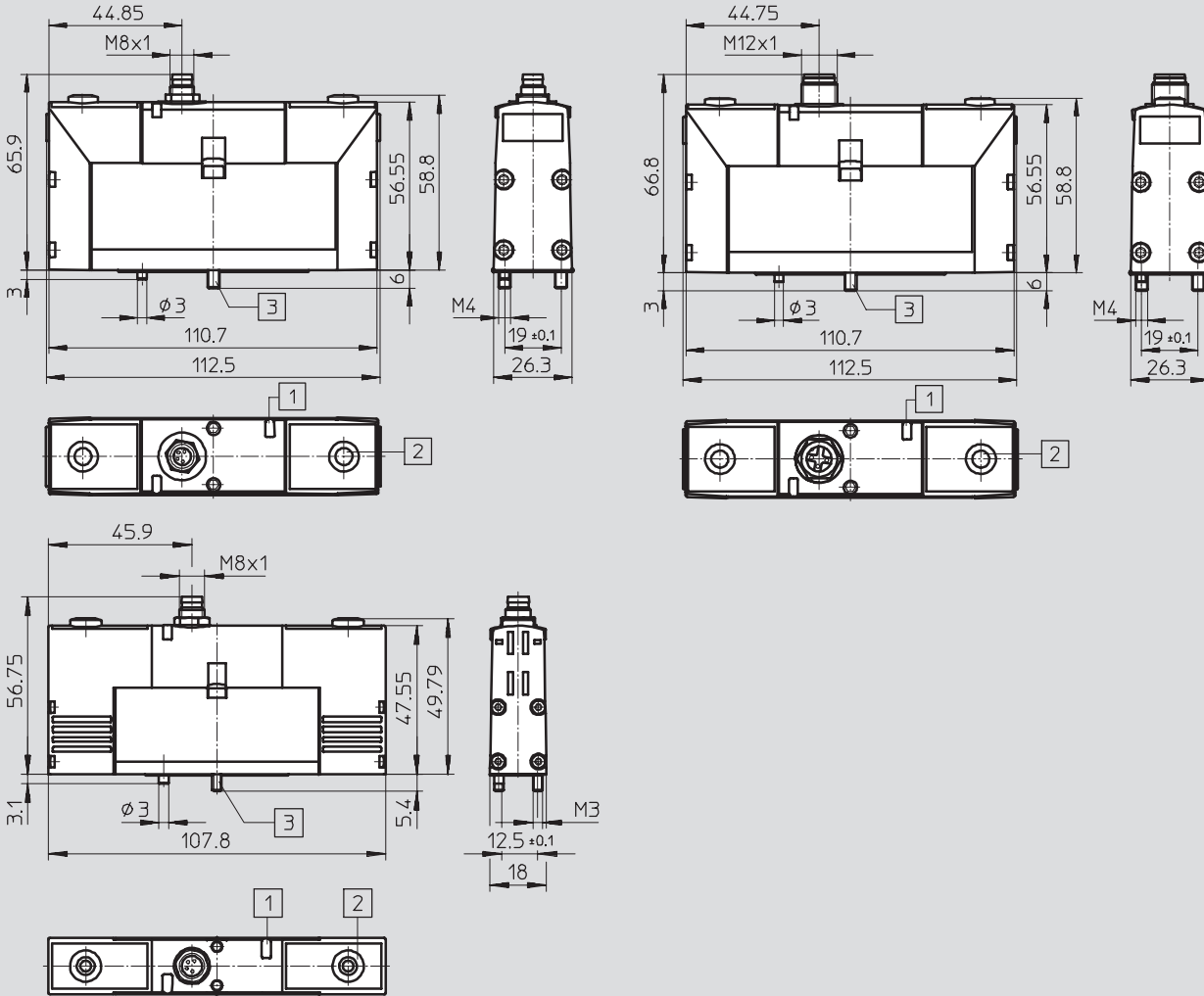
1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
	Material note	Free of copper and PTFE

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid valves

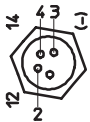
Dimensions

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



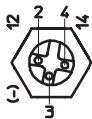
- 1 Light emitting diode (LED)
- 2 Manual override
- 3 Captive mounting screws

M8x1 – Terminal allocation



- 1 Unused
- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

M12x1 – Terminal allocation



- 2 Signal (+) Solenoid 12
- 3 com (-)
- 4 Signal (+) Solenoid 14

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/2-way valves, double solenoid valves

Ordering data					
Circuit symbol	Description	Central plug	ISOsize	Teile-Nr.	Typ
	Pilot air supply: – internal	M8x1	02	534 776	VSVA-B-B52-H-A2-1R2L
			01	534 537	VSVA-B-B52-H-A1-1R2L
		M12x1	01	534 557	VSVA-B-B52-H-A1-1R5L
	Pilot air supply: – external	M8x1	02	534 786	VSVA-B-B52-ZH-A2-1R2L
			01	534 527	VSVA-B-B52-ZH-A1-1R2L
		M12x1	01	534 547	VSVA-B-B52-ZH-A1-1R5L
	With dominant signal at 14 Pilot air supply: – internal	M8x1	02	534 777	VSVA-B-D52-H-A2-1R2L
			01	534 538	VSVA-B-D52-H-A1-1R2L
		M12x1	01	534 558	VSVA-B-D52-H-A1-1R5L
	With dominant signal at 14: Pilot air supply – external	M8x1	02	534 787	VSVA-B-D52-ZH-A2-1R2L
			01	534 528	VSVA-B-D52-ZH-A1-1R2L
		M12x1	01	534 548	VSVA-B-D52-ZH-A1-1R5L

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/3-way valves

 Flow rate
1,000 l/min

 Voltage
24 V DC



General technical data			
ISO size		02	01
Valve function		5/3-way, monostable	
Constructional design		Piston spool	
Sealing principle		Soft	
Actuation type		Electrical	
Type of reset		Mechanical spring	
Type of control		Piloted	
Pilot air supply		Internal or external	
Direction of flow		Reversible with external pilot air supply	
Exhaust function		Flow control	
Manual override facility		Resetting	
Type of mounting		Via through-holes	
Tightening torque for valves mounting		[Nm] 0.68...0.92	1.62...218
Assembly position		Any	
Nominal size		[mm] 5	9
Standard nominal flow rate		[l/min] 500	1,000
Grid dimension		[mm] 19	27
Corrosion resistance class		CRC 2	
Pneumatic connection		1, 2, 3, 4, 5 12, 14	G $\frac{1}{8}$ M5 G $\frac{1}{4}$
Product weight		[g] 140	270

Operating and environmental conditions			
ISO size		02	01
Operating medium		Filtered compressed air, lubricated or unlubricated, 40µm filtration Vacuum	
Operating pressure		Internal pilot air supply [bar] 3 ... 8	External pilot air supply [bar] -0.9 ... +10
Pilot pressure		[bar] 3 ... 8	-0.9 ... +16
Ambient temperature		[°C] -5 ... +50	
Temperature of medium		[°C] -5 ... +50	
Flammability tested to UL94		V0	

Solenoid valves VSVA, ISO 15 407-1

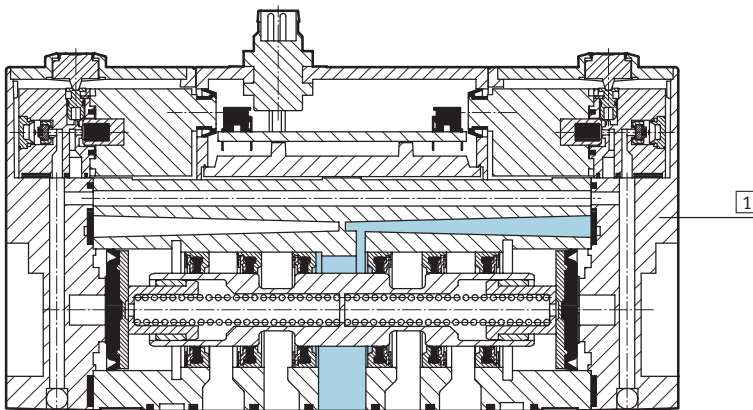
Technical data – 5/3-way valves

Valve response times [ms]			
ISO size		02	01
	On	15	20
	Off	36	52

Electrical data			
ISO size		02	01
Electrical connection according to IEC 60 947-5-2		Central plug, round design, M8x1	
			Central plug, round design, M12x1
Coil characteristics	Voltage	[V DC]	21.6...26.4
	Power	[W]	2.4
Duty cycle		%	100
Protection class to EN 60 529	IP65 (in combination with plug socket)		
Protective circuit and LED	Integrated in the valve		
CE symbol	89/336/EEC (EMC)		

Materials

Sectional view



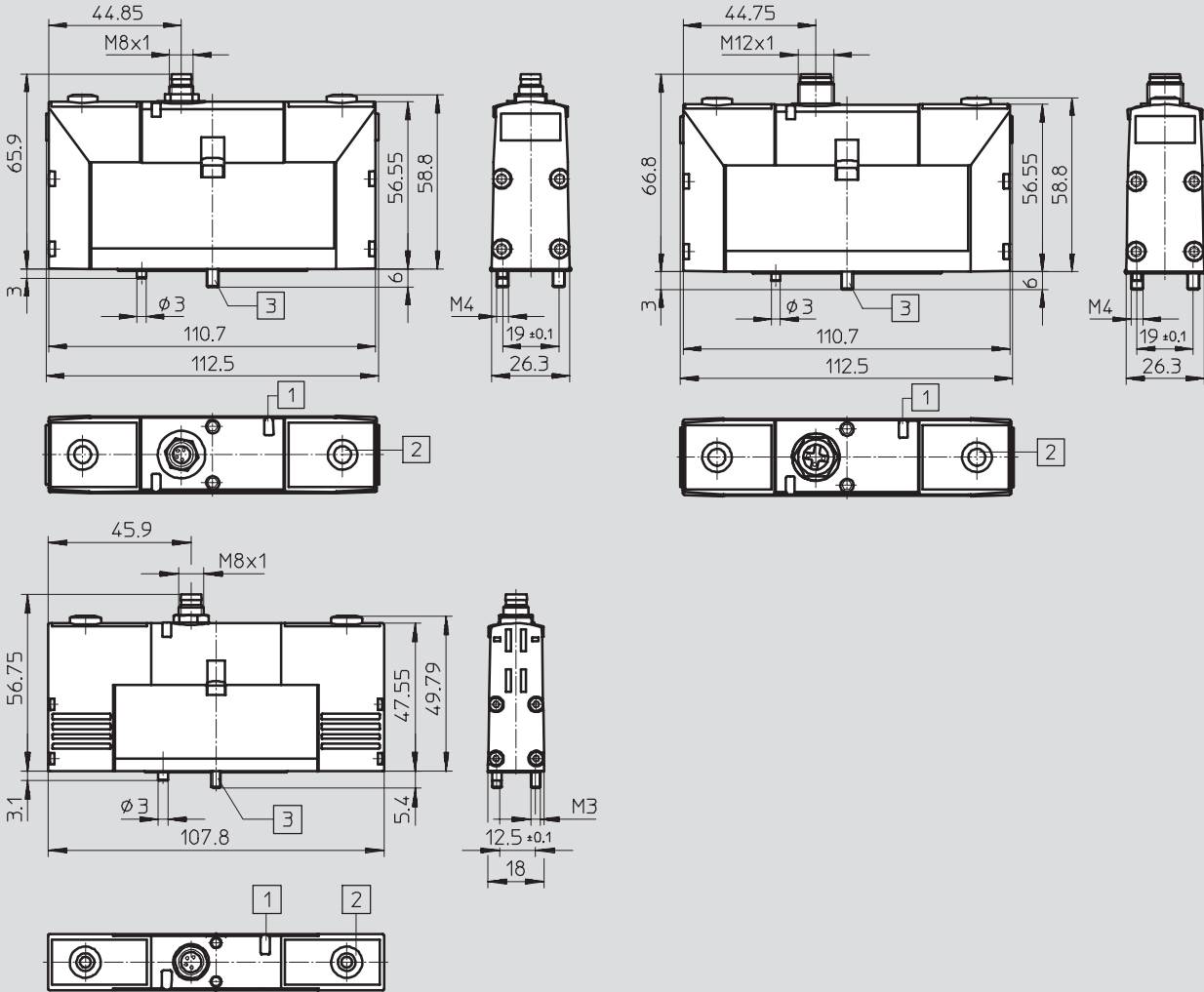
1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber
	Material note	Free of copper and PTFE

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/3-way valves

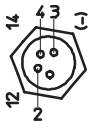
Dimensions

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



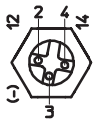
- 1 Light emitting diode (LED)
- 2 Manual override
- 3 Captive mounting screws

M8x1 – Terminal allocation



- 1 Unused
- 2 Unused
- 3 com (-)
- 4 Signal (+) Solenoid 14

M12x1 – Terminal allocation



- 2 Unused
- 3 com (-)
- 4 Signal (+) Solenoid 14

Solenoid valves VSVA, ISO 15 407-1

Technical data – 5/3-way valves

Ordering data					
Circuit symbol	Description	Central plug	ISOsize	Part No.	Type
	Normally position: – closed Pilot air supply: – internal	M8x1	02	534 778	VSVA-B-P53C-H-A2-1R2L
			01	534 539	VSVA-B-P53C-H-A1-1R2L
		M12x1	01	534 559	VSVA-B-P53C-H-A1-1R5L
	Normally position: – closed Pilot air supply: – external	M8x1	02	534 788	VSVA-B-P53C-ZH-A2-1R2L
			01	534 529	VSVA-B-P53C-ZH-A1-1R2L
		M12x1	01	534 549	VSVA-B-P53C-ZH-A1-1R5L
	Normally position: – exhausting Pilot air supply: – internal	M8x1	02	534 779	VSVA-B-P53E-H-A2-1R2L
			01	534 540	VSVA-B-P53E-H-A1-1R2L
		M12x1	01	534 560	VSVA-B-P53E-H-A1-1R5L
	Normally position: – exhausting Pilot air supply: – external	M8x1	02	534 789	VSVA-B-P53E-ZH-A2-1R2L
			01	534 530	VSVA-B-P53E-ZH-A1-1R2L
		M12x1	01	534 550	VSVA-B-P53E-ZH-A1-1R5L
	Normally position: – position pressurized Pilot air supply: – internal	M8x1	02	534 780	VSVA-B-P53U-H-A2-1R2L
			01	534 541	VSVA-B-P53U-H-A1-1R2L
		M12x1	01	534 561	VSVA-B-P53U-H-A1-1R5L
	Normally position: – position pressurized Pilot air supply: – external	M8x1	02	534 790	VSVA-B-P53U-ZH-A2-1R2L
			01	534 531	VSVA-B-P53U-ZH-A1-1R2L
		M12x1	01	534 551	VSVA-B-P53U-ZH-A1-1R5L

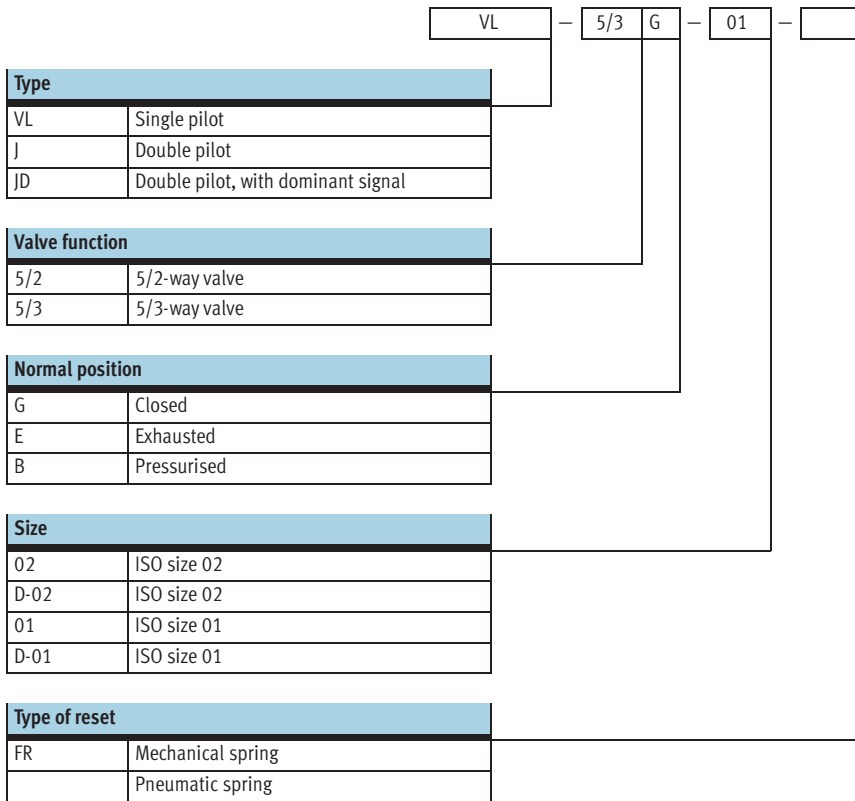
Pneumatic valves, ISO 15 407-1

Type code



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

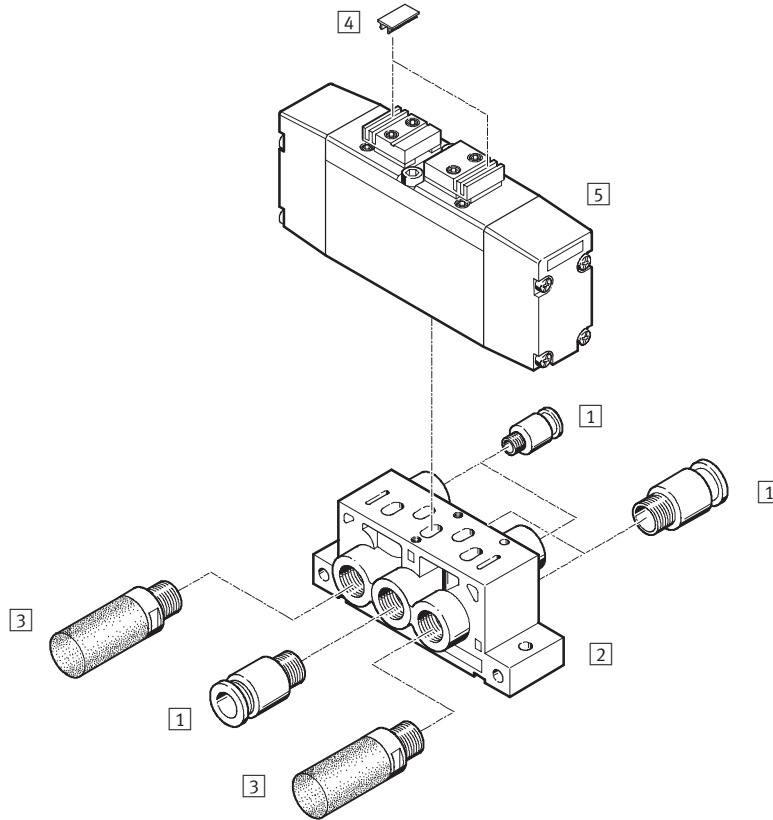
1.1



Pneumatic valves, ISO 15 407-1

Peripherals overview

Individual mounting

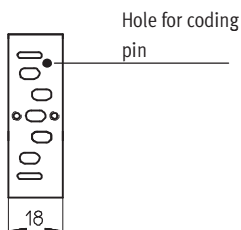


Accessories			
	Brief description	→ Page	
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	Volume 3
2	Individual sub-base NAS	With lateral ports	2 / 1.1-65
-	Individual sub-base NAU	With ports underneath	2 / 1.1-66
3	Silencer	For fitting in exhaust ports	Volume 3
4	Inscription labels IBS-9x17	For identifying the valves	2 / 1.1-70
5	Pneumatic valve	Port pattern to ISO 15 407-1	2 / 1.1-4

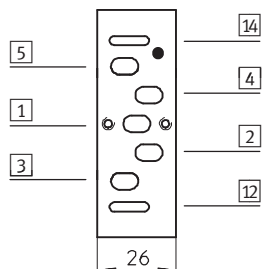
Port pattern on sub-base to ISO 15 407-1

Standard updates given below

ISO size 02



ISO size 01

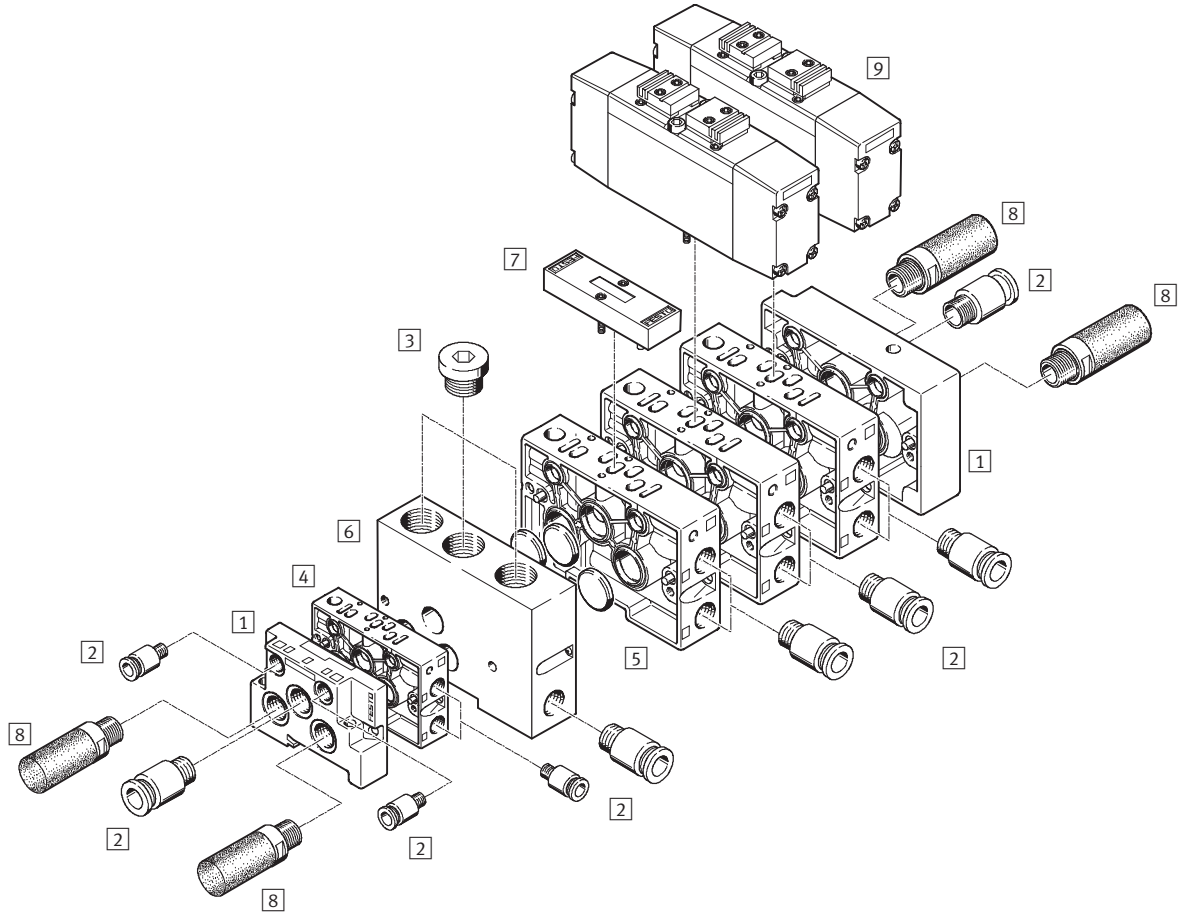


Pneumatic valves, ISO 15 407-1

Peripherals overview



Manifold mounting




Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Pneumatic valves, ISO 15 407-1

Peripherals overview

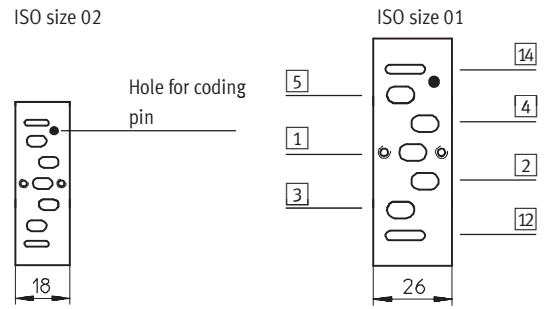
Accessories		
	Brief description	→ Page
1	End plate kit NEV	2 / 1.1-66
2	Push-in fitting QS	Volume 3
3	Blanking plug B	2 / 1.1-71
4	Manifold sub-base NAW	2 / 1.1-66
5	Isolating disc NSC	2 / 1.1-69
6	Intermediate plate NZV	2 / 1.1-67
7	Blanking plate NDV	2 / 1.1-67
8	Silencer	Volume 3
9	Pneumatic valve	2 / 1.1-4

 Note

When supplying different pressure zones, both a left and right isolating disc for the pressure supply and for the pilot line are needed for pilot air.

For design reasons, only the silencer U-3/8-B can be screwed into ports 3 and 5 when assembling ISO size 02 mounting rails.


Port pattern on sub-base to ISO 15 407-1
Standard updates given below

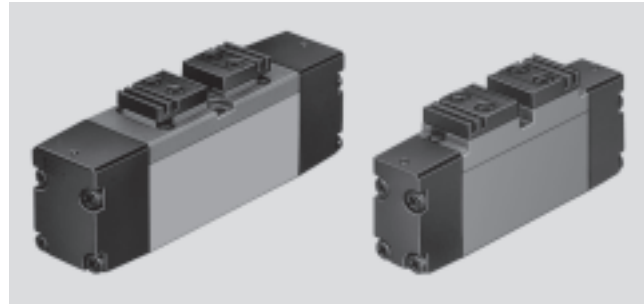


Pneumatic valves VL, ISO 15 407-1

Technical data – 5/2-way valves

FESTO

-  - Flow rate
500 ... 1000 l/min



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

General technical data				
ISO size		02		01
Valve function		5/2-way, single pilot		
Constructional design		Piston spool		
Sealing principle		Soft		
Actuation type		Pneumatic		
Type of reset		Mechanical or pneumatic spring		
Type of pilot control		Direct		
Direction of flow	Pneumatic reset	Non-reversible		
	Mechanical reset	Reversible		
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	6	8	
Standard nominal flow rate	[l/min]	500	1000	
Grid dimension	[mm]	19	27	
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$	
	12, 14	M5	M5	
Product weight	[g]	120	230	
Noise level	[dB (A)]	75		

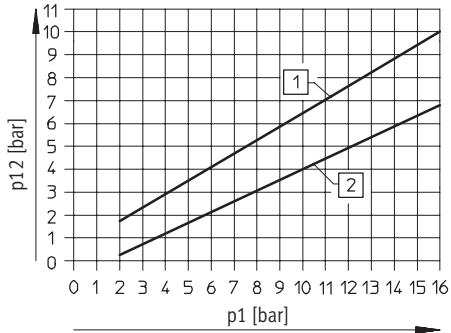
Operating and environmental conditions					
ISO size		02		01	
Type of reset		Pneumatic	Mechanical	Pneumatic	Mechanical
Operating medium		Filtered compressed air, lubricated or unlubricated			
		Vacuum			
Operating pressure	[bar]	2 ... 10	-0.9 ... +10	2 ... 16	-0.9 ... +16
Pilot pressure	[bar]	2 ... 10	3 ... 10	2 ... 16	3 ... 16
Ambient temperature	[°C]	-10 ... +60			
Temperature of medium	[°C]	-10 ... +60			

Pneumatic valves VL, ISO 15 407-1

Technical data – 5/2-way valves



Minimum pilot pressure p_{12} , p_{14} as a function of the operating pressure p_1 with auxiliary pilot air



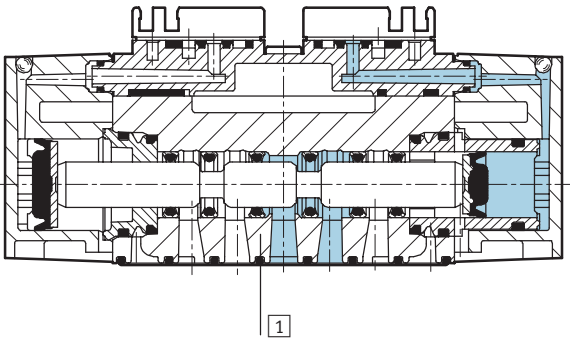
- 1 Switch-on pressure
- 2 Reset pressure

Valve response times [ms]

ISO size	02		01	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical
On	11	8	18	10
Off	20	18	30	35

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber

Pneumatic valves VL, ISO 15 407-1

Technical data – 5/2-way valves



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

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

3 Captive mounting screws
4 Slot for inscription label


Type	B1	B2	D1	H3	H4	H5	L2	L3
ISO size 02								
VL-5/2-...	18	12.5	M3	34	5	39	85	42.5
VL-5/2-...-FR							97	
ISO size 01								
VL-5/2-...	26.2	19	M4	35	7	42	110	55
VL-5/2-...-FR								

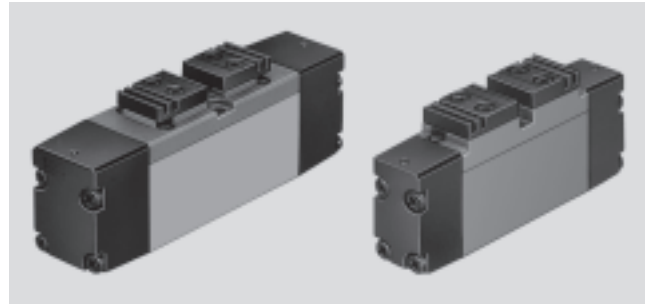
Ordering data		02		01	
ISO size		Part No.	Type	Part No.	Type
	Pneumatic reset	161 081	VL-5/2-D-02	161 060	VL-5/2-D-01
	Mechanical reset	161 082	VL-5/2-D-02-FR	161 061	VL-5/2-D-01-FR

Pneumatic valves J, ISO 15 407-1

Technical data – 5/2-way valves, double pilot



-  - Flow rate
500 ... 1000 l/min



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

General technical data			
ISO size	02		01
Valve function	5/2-way, double pilot or double pilot with dominant signal		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Pneumatic		
Type of pilot control	Direct		
Pilot air supply	Internal		
Direction of flow	Reversible		
Exhaust function	With flow control		
Manual override	None		
Type of mounting	Via through-holes		
Mounting position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	500	1000
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{3}{4}$
	12, 14	M5	M5
Product weight	[g]	110	230
Noise level	[dB (A)]	75	

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	[bar]	-0.9 ... +10	-0.9 ... +16
Pilot pressure	[bar]	2 ... 10	2 ... 16
Ambient temperature	[°C]	-10 ... +60	
Temperature of medium	[°C]	-10 ... +60	

Valve response times [ms]				
ISO size	02	01		
		Dominant signal at 14	Dominant signal at 14	
On/changeover	-	6	-	9
Off/changeover	6	6	10	10

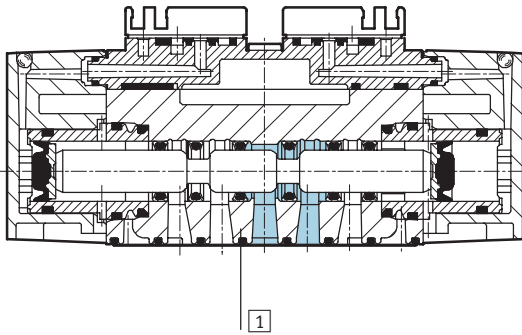
Pneumatic valves J, ISO 15 407-1

Technical data – 5/2-way valves, double pilot



Materials

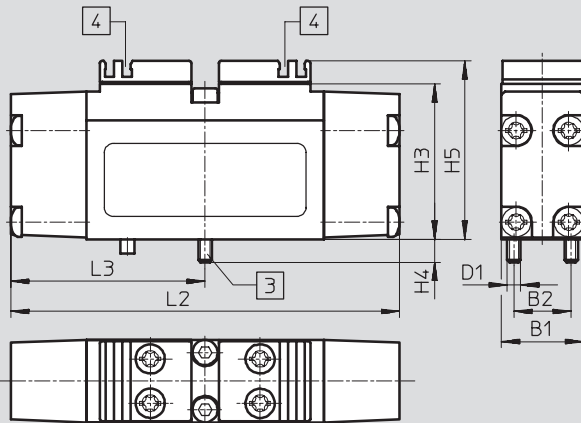
Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber

Dimensions

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



- 3 Captive mounting screws
- 4 Slot for inscription label

ISO size	B1	B2	D1	H3	H4	H5	L2	L3
02	18	12.5	M3	34	5	39	85	42.5
01	26.2	19	M4	35	7	42	110	55

Pneumatic valves J, ISO 15 407-1

Technical data – 5/2-way valves, double pilot



Ordering data				
ISO size		02		01
Circuit symbol	Description	Part No.	Type	Part No. Type
	Double pilot valve	161 083	J-5/2-D-02	161 062 J-5/2-D-01
	Double pilot valve with dominant signal at 14	161 084	JD-5/2-D-02	161 063 JD-5/2-D-01


Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

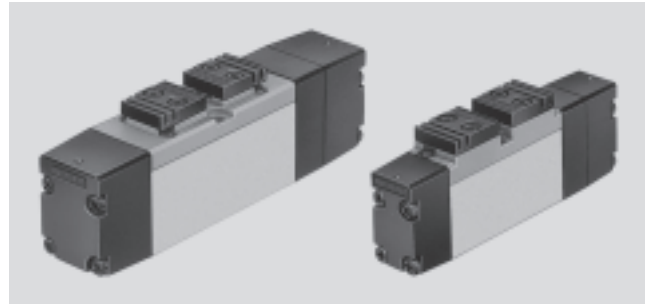
1.1

Pneumatic valves VL, ISO 15 407-1

Technical data – 5/3-way valves



-  - Flow rate
500 ... 1000 l/min



General technical data			
ISO size	02		01
Valve function	5/3-way, single pilot		
Constructional design	Piston spool		
Sealing principle	Soft		
Actuation type	Pneumatic		
Type of reset	Mechanical spring		
Type of pilot control	Direct		
Pilot air supply	Internal		
Direction of flow	Reversible		
Exhaust function	With flow control		
Manual override	None		
Type of mounting	Via through-holes		
Mounting position	Any		
Nominal size	[mm]	6	8
Standard nominal flow rate	[l/min]	500	1000
Grid dimension	[mm]	19	27
Pneumatic connection	1, 2, 3, 4, 5	G $\frac{3}{8}$	G $\frac{1}{4}$
	12, 14	M5	M5
Product weight	[g]	120	330
Noise level	[dB (A)]	75	

Operating and environmental conditions			
ISO size	02		01
Operating medium	Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	[bar]	-0.9 ... +10	-0.9 ... +16
Pilot pressure	[bar]	3 ... 10	3 ... 16
Ambient temperature	[°C]	-10 ... +60	
Temperature of medium	[°C]	-10 ... +60	

Valve response times			
ISO size	02		01
Closed	On	9	13
	Off	18	32
Exhausted	On	8	13
	Off	18	38
Pressurised	On	9	13
	Off	18	33

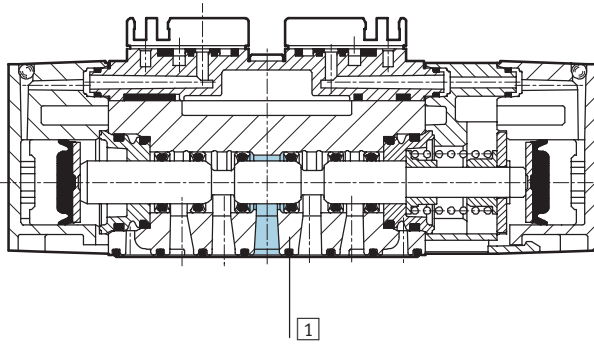
Pneumatic valves VL, ISO 15 407-1

Technical data – 5/3-way valves

FESTO

Materials

Sectional view



1	Housing	Die-cast aluminium, polyacetate
-	Seals	Nitrile rubber

Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Pneumatic valves VL, ISO 15 407-1

Technical data – 5/3-way valves



Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

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

3 Captive mounting screws
4 Slot for inscription label

ISO size	B1	B2	D1	H3	H4	H5	L2	L3
02	18	12.5	M3	34	5	39	97	42.5
01	26.2	19	M4	35	7	42	124	55

Ordering data		02		01	
ISO size	Description	Part No.	Type	Part No.	Type
	Normally closed	161 085	VL-5/3G-D-02	161 064	VL-5/3G-D-01
	Normally exhausted	161 086	VL-5/3E-D-02	161 065	VL-5/3E-D-01
	Normally pressurised	161 087	VL-5/3B-D-02	161 066	VL-5/3B-D-01

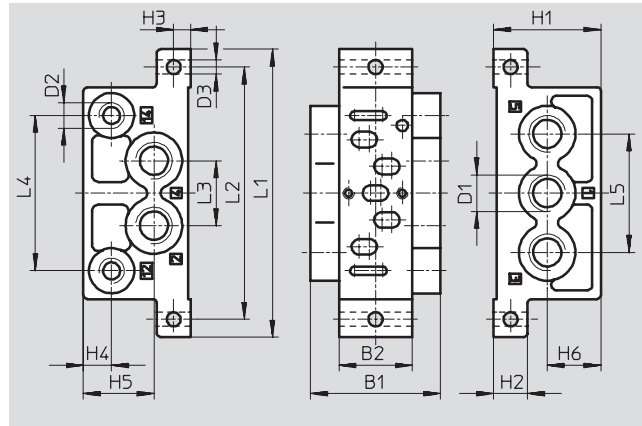
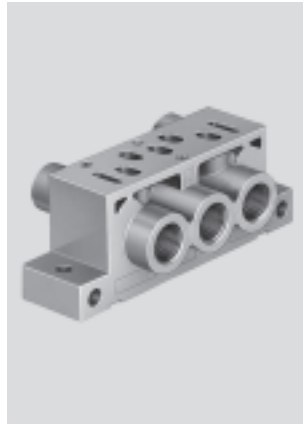
Solenoid/pneumatic valves, ISO 15 407-1

Accessories



Individual sub-base NAS

Materials:
Die-cast aluminium
Free of copper and PTFE



Dimensions and ordering data											
ISO size	B1	B2	D1	D2	D3 ∅	H1	H2	H3	H4	H5	H6
02	28.5	18	G $\frac{1}{8}$	M5	5.5	31	10	5	7	20	14.5
01	46	26	G $\frac{1}{4}$	G $\frac{1}{8}$	5	38	12	6	10	25	19

Dimensions and ordering data									
ISO size	L1	L2	L3	L4	L5	Weight [g]	Part No.	Type	
02	79	66.5	17	40	32	67	161 115	NAS- $\frac{1}{8}$ -02-VDMA	
01	102	89.4	23	55	42	160	161 109	NAS- $\frac{1}{4}$ -01-VDMA	

General technical data		
ISO size	02	01
Type of mounting	2 through-holes in housing	
Pneumatic connection	1, 2, 3, 4, 5 12, 14	G $\frac{1}{8}$ M5

Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

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Solenoid/pneumatic valves, ISO 15 407-1

Accessories



Manifold sub-base NAW

Material:
Die-cast aluminium



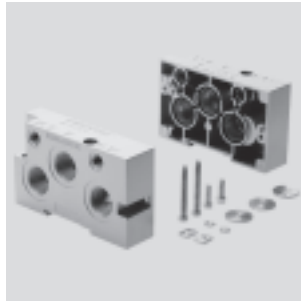
Ordering data – NAW for solenoid valves					
ISO size	Pneumatic connection		Weight [g]	Part No.	Type
	1, 2, 3, 4, 5	12, 14			
02	G $\frac{1}{8}$	M5	130	161 110	NAW-$\frac{1}{8}$-02-VDMA
01	G $\frac{1}{4}$	M5	225	161 102	NAW-$\frac{1}{4}$-01-VDMA

Ordering data – NAW for pneumatic valves					
ISO size	Pneumatic connection		Weight [g]	Part No.	Type
	1, 2, 3, 4, 5	12, 14			
02	G $\frac{1}{8}$	M5	130	161 111	NAW-$\frac{1}{8}$-02-VDMA-VL
01	G $\frac{1}{4}$	M5	225	161 103	NAW-$\frac{1}{4}$-01-VDMA-VL

Dimensions → 2 / 1.1-68

End plate kit NEV

Material:
Die-cast aluminium



Ordering data					
ISO size	Pneumatic connection		Weight [g]	Part No.	Type
	1, 2, 3, 4, 5	12, 14			
02	G $\frac{3}{8}$	G $\frac{1}{8}$	280	161 112	NEV-02-VDMA
01	G $\frac{1}{2}$	G $\frac{1}{8}$	445	161 104	NEV-01-VDMA

Dimensions → 2 / 1.1-68

Solenoid/pneumatic valves, ISO 15 407-1



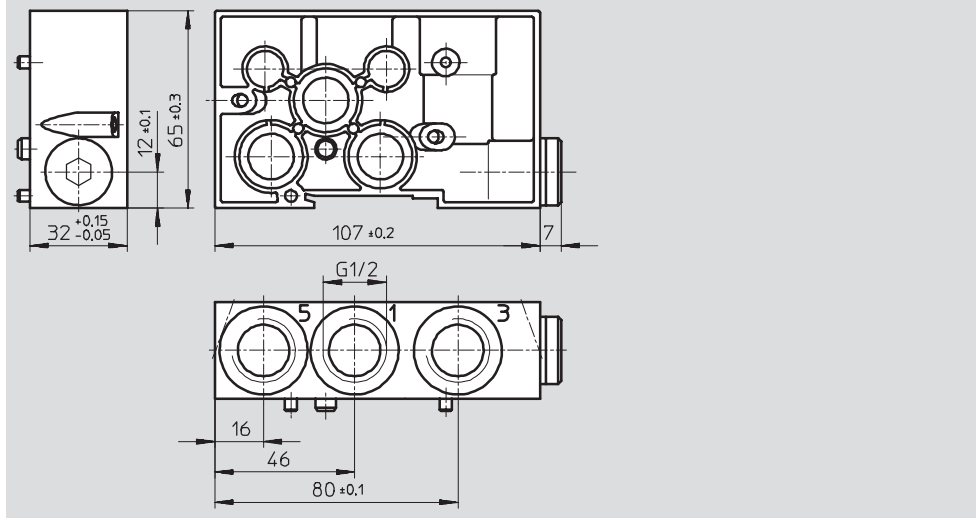
Accessories

Intermediate plate NZV

Material:
Die-cast aluminium
Free of copper and PTFE



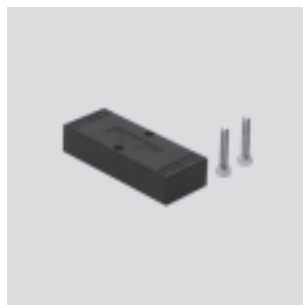
Dimensions Download CAD data → www.festo.com/en/engineering



Ordering data					
ISO size	Pneumatic connection		Weight [g]	Part No.	Type
	1, 2, 3, 4, 5	12, 14			
02, 01	G1/2	-	270	161 108	NZV-01/02-VDMA

Blanking plate NDV

Material:
Polymer
Free of copper and PTFE



Ordering data				
ISO size	Weight [g]	Part No.	Type	
02	22	161 114	NDV-02-VDMA	
01	36	161 107	NDV-01-VDMA	

Dimensions → 2 / 1.1-68

Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Solenoid/pneumatic valves, ISO 15 407-1

Accessories

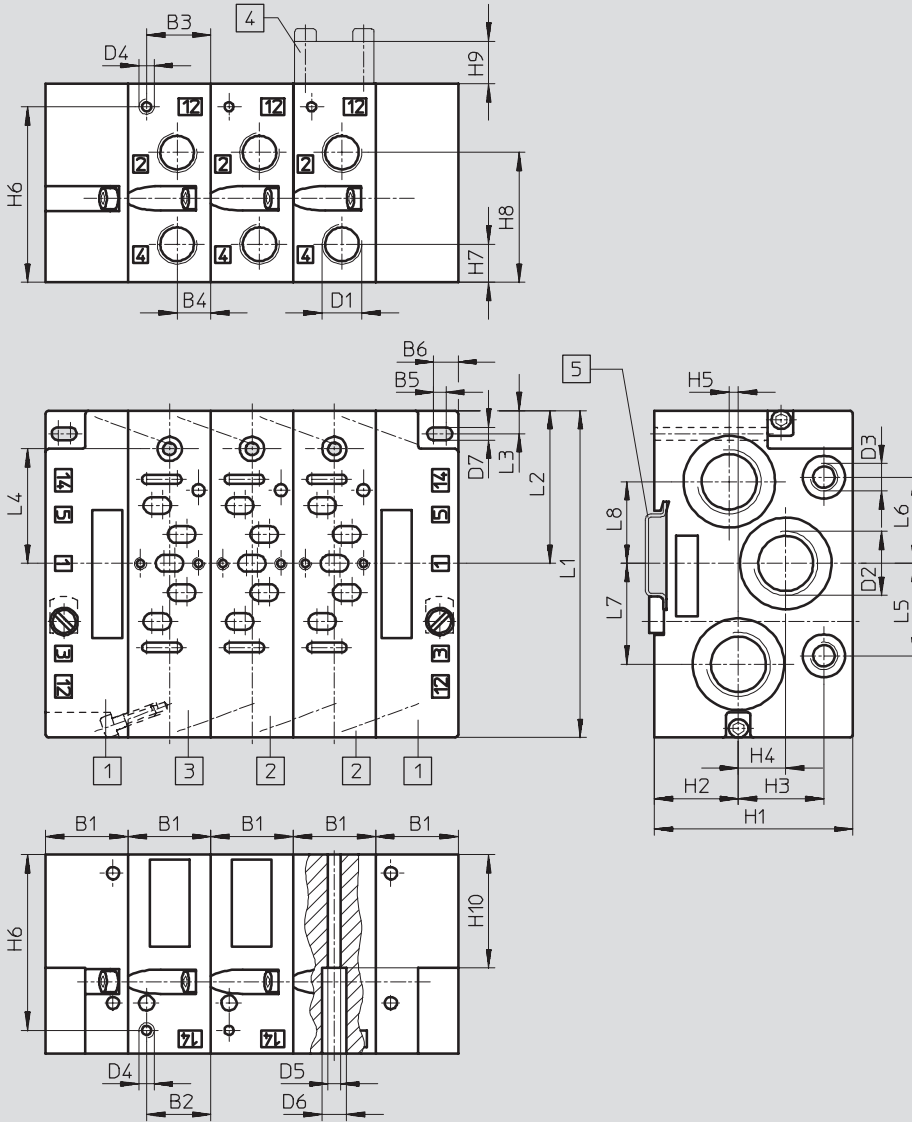


Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Dimensions – Manifold mounting

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



- 1 End plate kit
NEV-...VDMA
→ 2 / 1.1-66
- 2 Manifold sub-base
NAW-...-VDMA
→ 2 / 1.1-66
- 3 Manifold sub-base
NAW-...-VDMA-VL
→ 2 / 1.1-66
- 4 Blanking plate
NDV-...-VDMA
→ 2 / 1.1-67
- 5 Mounting rail
NRH-35-2000
→ 2 / 7.8-1

Note

For design reasons, only the silencer U-3/8-B can be screwed into ports 3 and 5 when assembling ISO size 02 mounting rails.

ISO size	B1	B2	B3	B4	B5	B6	D1	D2	D3	D4
02	19	6	13	7.5	1	4.5	G $\frac{1}{8}$	G $\frac{3}{8}$	G $\frac{1}{8}$	M5
01	27	21	21	11	4	8	G $\frac{1}{4}$	G $\frac{1}{2}$	G $\frac{1}{8}$	M5

ISO size	D5	D6	D7	H1	H2	H3	H4	H5	H6	H7
02	3.3	6.3	4.3	55	17	28.8	18.5	–	48	10.5
01	4.2	8	4.2	65	27.5	28	15.5	3	57.5	12.5

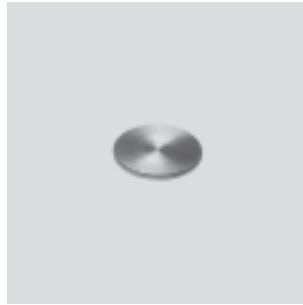
ISO size	H8	H9	H10	L1	L2	L3	L4	L5	L6	L7	L8
02	35.5	12	40	81	36.5	5.6	30.9	20	20	18	18
01	42.5	14	37	107	50	7.5	37.5	30.3	28.3	33	26.8

Solenoid/pneumatic valves, ISO 15 407-1

Accessories

Isolating disc NSC

Material:
Aluminium



Ordering data – NSC for ports 1, 2, 3 (solenoid/pneumatic valves)

ISO size	Weight [g]	Part No.	Type
02	2	161 113	NSC- $\frac{3}{8}$ -02-VDMA
01	2	161 105	NSC- $\frac{1}{2}$ -01-VDMA

Ordering data – NSC for ports 12, 14 (pneumatic valves)

ISO size	Weight [g]	Part No.	Type
02	2	161 106	NSC- $\frac{1}{8}$ -01-VDMA
01	2	161 106	NSC- $\frac{1}{8}$ -01-VDMA

Inscription clip MN2H-BZT-10X

for holding the inscription label IBS



Ordering data

	Weight [g]	Part No.	Type
Inscription clip for valves MN2H (10 included in scope of delivery)	7	161 936	MN2H-BZT-10X

Solenoid/pneumatic valves, ISO 15 407-1

Accessories



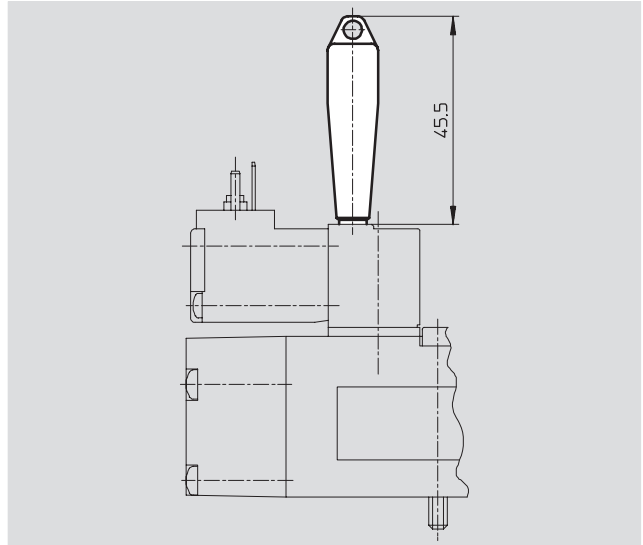
Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Manual override tool

AHB

Material:
Polymer

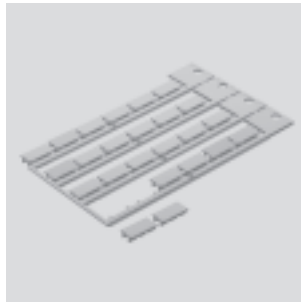


Ordering data			
For valve	Weight [g]	Part No.	Type
MN2H/JMN2H/JMN2DH	5	157 601	AHB-MEB

Inscription label

IBS

Material:
Polymer





Ordering data		
	Part No.	Type
Inscription label for valves MN2H (24 in frames included in scope of delivery)	161 937	IBS-9x17
Inscription label for valves VSVA (24 in frames included in scope of delivery)	18 182	ISB-9x20

Core Range




Solenoid/pneumatic valves, ISO 15 407-1



Accessories



Ordering data		Part No.	Type
Blanking plugs			
		3570	B-3/8 ¹⁾
Silencers			
		→ Volume 3	

1) Scope of delivery 10 pieces

Ordering data – Plug sockets, plug socket cables for EB and N2 solenoid coils					
	Voltage	Cable length [m]	Switching status display with LED	Part No.	Type
Plug socket without cable					Technical data → 2 / 7.2-10
	–	–	–	151 687	MSSD-EB
	–	–	–	539 712	MSSD-EB-M12
Plug socket without cable with insulation displacement technology					Technical data → 2 / 7.2-10
	–	–	–	192 745	MSSD-EB-S-M14
Plug socket with cable					Technical data → 2 / 7.3-23
	24 V DC	2.5	■	151 688	KMEB-1-24-2,5-LED
	24 V DC	5	■	151 689	KMEB-1-24-5-LED
	24 V DC	10	■	193 457	KMEB-1-24-10-LED
	Up to 240 V	2.5	–	151 690	KMEB-1-230AC-2,5
	Up to 240 V	5	–	151 691	KMEB-1-230AC-5

Ordering data – Plug sockets, plug socket with cable for valves with central plug					
	Voltage	Cable length [m]	LED	Part No.	Type
Plug socket without cable					Technical data → 2 / 7.2-10
	–	–	–	185 498	SEA-M12-4WD-PG7
Plug socket with cable					Technical data → 2 / 7.3-23
	–	1	–	185 499	KM-12-M12-GSWD-1-4

 Core Range



Solenoid/pneumatic valves, ISO 15 407-1



Accessories




Standard directional control valves
ISO 15 407-1 (VDMA 24 563)

1.1

Ordering data – Plug sockets with cable M12x1 for VSVA valves						Technical data → Volume 4	
	Mounting	Connection	Switch output		Cable length [m]	Part No.	Type
			PNP	NPN			
Straight plug socket							
	Locknut M12x1	4-pin	■	■	5	164 259	SIM-M12-4GD-5-PU
Angled plug socket							
	Locknut M12x1	4-pin	■	■	5	164 258	SIM-M12-4WD-5-PU

Ordering data – Plug sockets with cable M8x1 for VSVA valves						Technical data → Volume 4	
	Mounting	Connection	Switch output		Cable length [m]	Part No.	Type
			PNP	NPN			
Straight plug socket							
	Locknut M8x1	4-pin	■	■	2.5	158 960	SIM-M8-4GD-2,5-PU
					5	158 961	SIM-M8-4GD-5-PU
Angled plug socket							
	Locknut M8x1	4-pin	■	■	2.5	158 962	SIM-M8-4WD-2,5-PU
					5	158 963	SIM-M8-4WD-5-PU

Ordering data – Illuminating seal for EB solenoid coils				Technical data → 2 / 7.4-1	
	Voltage		Part No.	Type	
	[V DC]	[V AC]			
	12 ... 24	–	151 717	MEB-LD-12-24DC	
	–	230	151 718	MEB-LD-230AC	

 Core Range