Solenoid/pneumatic valves, Tiger 2000

FESTO

- Electrically or pneumatically actuated valves
- With internal or external pilot air
- Sturdy and reliable

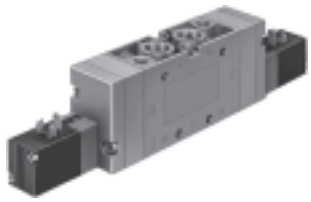
Specified types in accordance with ATEX directive for potentially explosive atmospheres
➔ www.festo.com/en/ex

Solenoid/pneumatic valves, Tiger 2000

Key features

General information

- A complete and comprehensive range with 5/2- and 5/3-way valves
- Poppet valve for single solenoid functions or piston spool for more complex versions with air spring, and 5/3-way valves
- Optimised for increased flow rates without increasing size
- Tubing connection threads in sizes G1⁄8, G1⁄4, G3⁄8
- Diverse and flexible, side and front mounting
- Pneumatic or electrical actuation
- Versatile electrical connection with F or V solenoid coil with minimal power consumption, can also be used with valve terminals
- Functional and timeless design, enclosed front housing



Solenoid coils

F solenoid coils

Voltage:
- 12 to 230 V DC
- 12 to 240 V AC (50 to 60 Hz)

Power consumption:
- 4.5 W

- For all MFH valves
- Selected types conform to the ATEX directive for explosive atmospheres
- ➔ www.festo.com/en/ex

- Easily interchangeable solenoid coils
- Solenoid coil not included in scope of delivery

V solenoid coils

Voltage:
- 24 V DC

Power consumption:
- 2.5 W

- For all MVH valves
- Minimal heat-up

- Solenoid coil included in scope of delivery

Manifold mounting

With PAL manifold strip

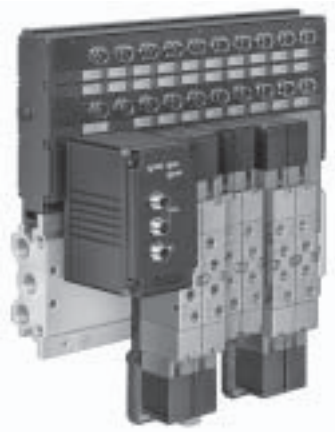
With PRS manifold

The Tiger 2000 valves can be mounted on PAL manifold strips with common supply port or on PRS manifolds with common supply port and common exhausts.
Manifold strips and manifolds have 2 to 10 valve positions.

Solenoid/pneumatic valves, Tiger 2000

Key features

Valve terminals



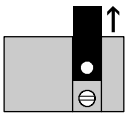
Ready to connect, completely assembled type 02 valve terminal, available with Tiger 2000 valves (V solenoid).
Connection options:
- Central multi-pin plug
- Fieldbus interface for all common fieldbus protocols
- Autonomous with integrated controller (PLC)
- For G1⁄8 and G1⁄4

Manual override for valves with V solenoid coil

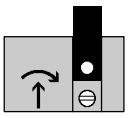
Resetting (standard)

Press on the aluminium plate

Conversion to detenting actuation

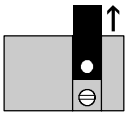


1 Pull out the aluminium plate

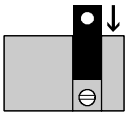


2 Using a screwdriver, simultaneously push and turn the exposed manual override

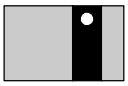
Blocking the manual override



1 Pull out the aluminium plate

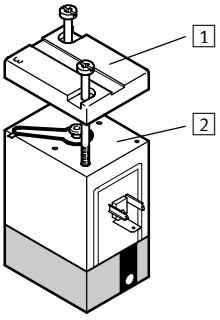


2 Rotate the aluminium plate by 180° and replace

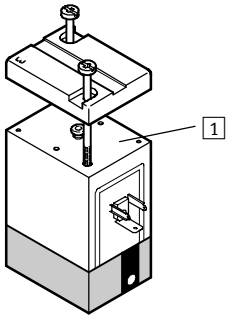


3 The manual override is now blocked

Pilot exhaust air for valves with V solenoid coil



Free pilot exhaust air
Unducted by removing the seal in the top cover, the 3 on the cap must always be aligned with valve port 84 or 82.

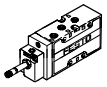
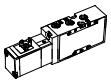
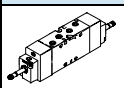
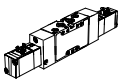


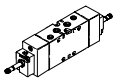
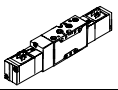
1 The cap may not be turned when removing the seal
2 Seal installed

1 Seal removed

Solenoid valves, Tiger 2000

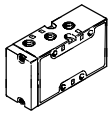
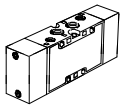
Product range overview

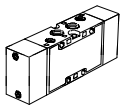
Function	Version	Type	Pneumatic connection	Operating voltage		Pilot air supply		Type of reset		➔ Page
				[V DC]	[V AC]	Internal	External	Pneumatic spring	Mechanical spring	
5/2-way valves	Solenoid valve									
		MFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240	■	■	■	■	2 / 2.2-11
			G1/4			■	■	■	■	
			G3/8			■	■	■	■	
		MVH	G1/8	24	–	■	■	■	■	2 / 2.2-29
			G1/4			■	■	■	■	
			G3/8			■	■	■	■	
	Double solenoid valve									
		JMFH	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240	■	■	–	–	2 / 2.2-18
			G1/4			■	■	–	–	
			G3/8			■	■	–	–	
		JMVH	G1/8	24	–	■	■	–	–	2 / 2.2-35
			G1/4			■	■	–	–	
			G3/8			■	■	–	–	

Function	Version	Type	Pneumatic connection	Operating voltage		Pilot air supply		Normal position			➔ Page
				[V DC]	[V AC]	Internal	External	Closed	Exhausted	Pressur-ised	
5/3-way valves	Solenoid valve										
		MFH-5/3	G1/8	12, 24, 42, 48	24, 42, 48, 110, 230, 240	■	■	■	■	■	2 / 2.2-23
			G1/4			■	■	■	■	■	
			G3/8			■	■	■	■	■	
		MVH-5/3	G1/8	24	–	■	■	■	■	■	2 / 2.2-41
			G1/4			■	■	■	■	■	
			G3/8			■	■	■	■	■	

Pneumatic valves, Tiger 2000

Product range overview

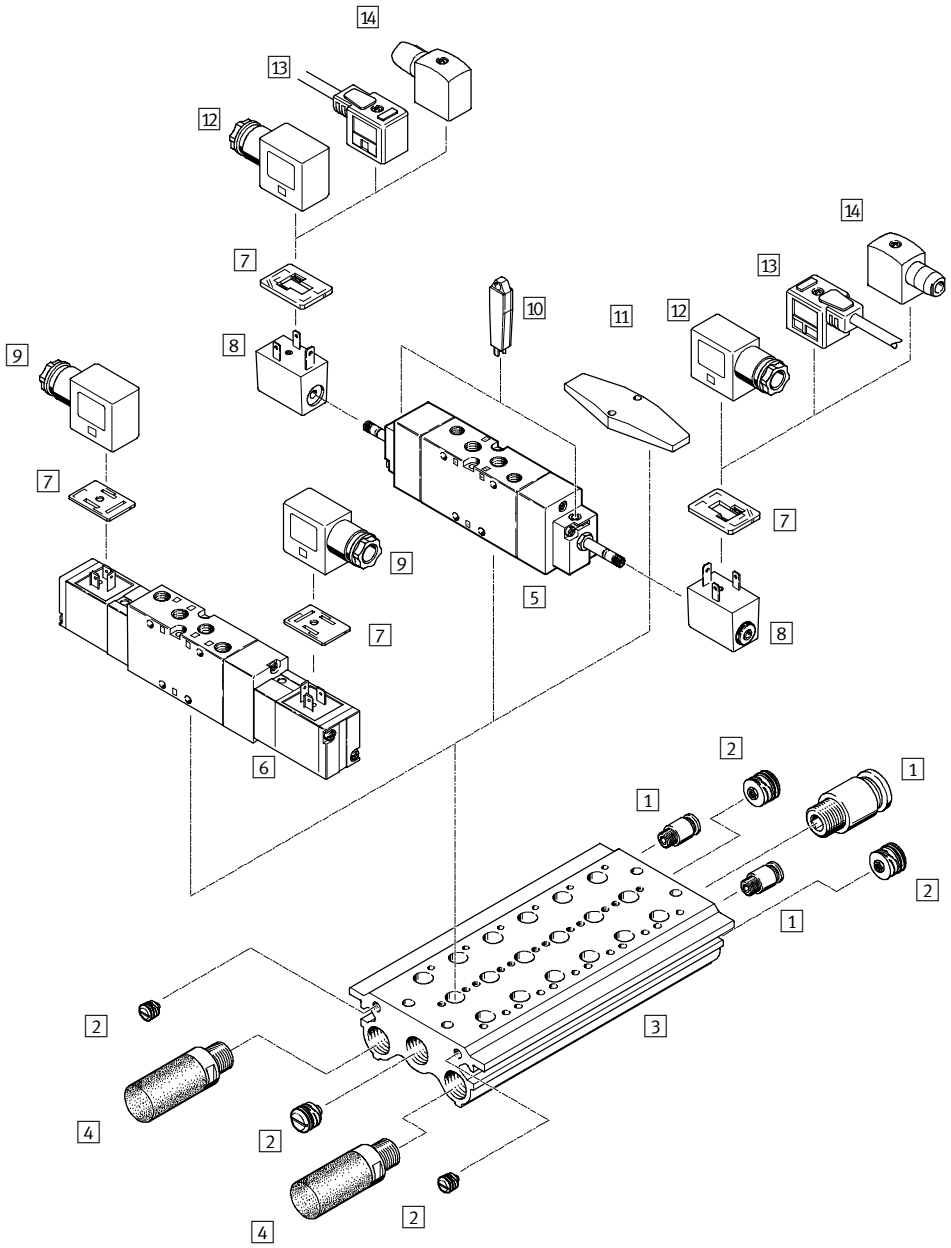
Function	Version	Type	Pneumatic connection	Type of reset		→ Page
				Pneumatic spring	Mechanical spring	
5/2-way valves	Pneumatic valve					
		VL	G1/8	–	■	2 / 2.2-49
			G1/4	–	■	
			G3/8	–	■	
	Double pilot valve					
		J	G1/8	–	–	2 / 2.2-53
			G1/4	–	–	
			G3/8	–	–	

Function	Version	Type	Pneumatic connection	Normal position			→ Page
				Closed	Exhausted	Pressurised	
5/3-way valves	Pneumatic valve						
		VL	G1/8	■	■	■	2 / 2.2-56
			G1/4	■	■	■	
			G3/8	■	■	■	

Solenoid valves, Tiger 2000

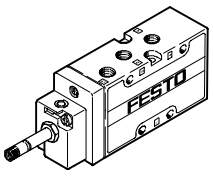
Peripherals overview

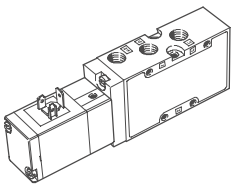
Mounting on manifold



Variants

MFH-5-...-B	MVH-5-...-B





Solenoid valves, Tiger 2000

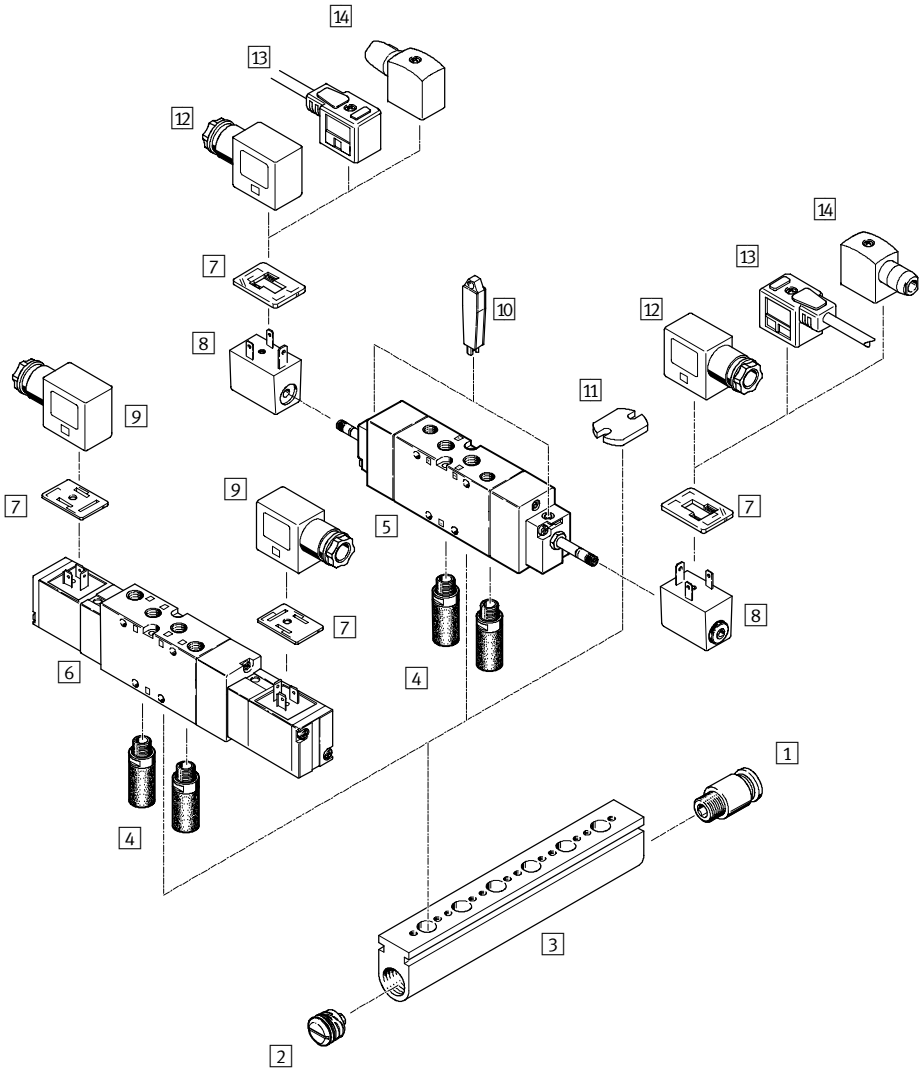
Peripherals overview

Accessories		
	Brief description	**➔ Page**
1 Push-in fitting QS	For connecting compressed air tubing with standard O.D.	Volume 3
2 Sealing plug PRSV		2 / 2.2-64
3 Manifold PRS		2 / 2.2-62
4 Silencer	For fitting in exhaust ports	Volume 3
5 Solenoid valve MFH	For F solenoid coil	2 / 2.2-4
6 Solenoid valve MVH	With V solenoid coil	2 / 2.2-4
7 Illuminating seal M...-LD	For displaying the switching status	2 / 2.2-67
8 F solenoid coil MSFG, MSFW		2 / 2.2-66
9 Plug socket MSSD-V	For valves MVH, JMVH	2 / 2.2-67
10 Manual override tool AHB		2 / 2.2-65
11 Blanking plate PRSB	For covering vacant positions	2 / 2.2-64
12 Plug socket MSSD-F	For valves MFH, JMFH	2 / 2.2-67
13 Plug socket cable KMF	For valves MFH, JMFH	2 / 2.2-67
14 Plug socket MSSD-F-S	For valves MFH, JMFH	2 / 2.2-67

Solenoid valves, Tiger 2000

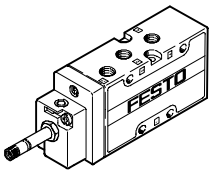
Peripherals overview

Mounting on manifold strip

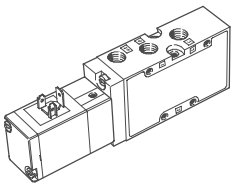


Variants

MFH-5-...-B



MVH-5-...-B



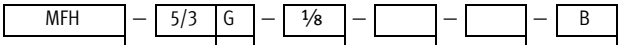
Solenoid valves, Tiger 2000

Peripherals overview

Accessories			
		Brief description	**➔ Page**
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	Volume 3
2	Sealing plug PRSV		2 / 2.2-64
3	Manifold strip PAL		2 / 2.2-60
4	Silencer	For fitting in exhaust ports	Volume 3
5	Solenoid valve MFH	For F solenoid coil	2 / 2.2-4
6	Solenoid valve MVH	With V solenoid coil	2 / 2.2-4
7	Illuminating seal M...-LD	For displaying the switching status	2 / 2.2-67
8	F solenoid coil MSFG, MSFW	For solenoid valves MFH, JMFH	2 / 2.2-66
9	Plug socket MSSD-V	For solenoid valves MVH, JMVH	2 / 2.2-67
10	Manual override tool AHB		2 / 2.2-65
11	Blanking plate PALB	For covering vacant positions	2 / 2.2-64
12	Plug socket MSSD-F	For solenoid valves MFH, JMFH	2 / 2.2-67
13	Plug socket cable KMF	For solenoid valves MFH, JMFH	2 / 2.2-67
14	Plug socket MSSD-F-S	For solenoid valves MFH, JMFH	2 / 2.2-67

Solenoid valves, Tiger 2000

Type code



Type	
MFH	Single solenoid, for F solenoid coil
MVH	Single solenoid, with V solenoid coil
JMFH	Double solenoid, for F solenoid coil
JMVH	Double solenoid, with V solenoid coil

Valve function	
5	5/2-way valve
5/3	5/3-way valve

Normal position	
G	Closed
E	Exhausted
B	Pressurised

Pneumatic connection	
⅛	G⅛
¼	G¼
⅜	G⅜

Type of reset	
	Mechanical spring
L	Pneumatic spring

Pilot air supply	
	Internal
S	External

Generation	
B	Series B

Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

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- Flow rate
  750 … 2000 l/min

- Voltage
  12, 24, 42, 48 V DC
  24, 42, 48, 110, 230,
  240 V AC
  Wearing parts kits
  ➔ 2 / 2.2-16

General technical data								
Pneumatic connection			G⅛		G¼		G⅜	
Type of reset			Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic
Valve function			5/2-way, single solenoid					
Constructional design			Poppet	Piston spool	Poppet	Piston spool		
Sealing principle			Soft					
Actuation type			Electrical					
Type of pilot control			Piloted					
Pilot air supply			Internal or external					
Direction of flow			Non-reversible	Reversible	Non-reversible	Reversible		
Exhaust function			With flow control					
Manual override			Via accessory, detenting					
Type of mounting			Via through-holes					
Mounting position			Any					
Nominal size		[mm]	5	8	7	10	12	
Standard nominal flow rate		[l/min]	750	1000	1300	1600	2000	
Grid dimension		[mm]	27		33		41	
Product weight		[g]	220	280	300	380	630	

Operating and environmental conditions								
Pneumatic connection			G⅛		G¼		G⅜	
Type of reset			Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum					
Operating pressure	Internal pilot air supply	[bar]	3 … 10	2 … 10	3 … 10	2 … 10	2 … 10	2 … 10
	External pilot air supply	[bar]	–0.9 … +10	0 … 10	–0.9 … +10	0 … 10	–0.9 … +10	–0.9 … +10
Pilot pressure		[bar]	3 … 10	2 … 10	3 … 10	1.5 … 10	2 … 10	2 … 10
Ambient temperature		[°C]	–5 … +40					
Temperature of medium		[°C]	–10 … +60					

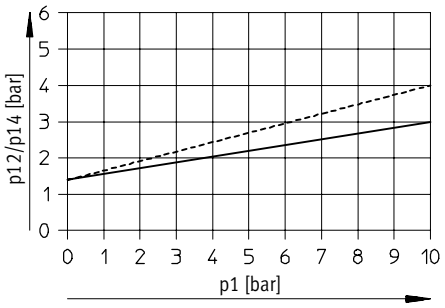
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

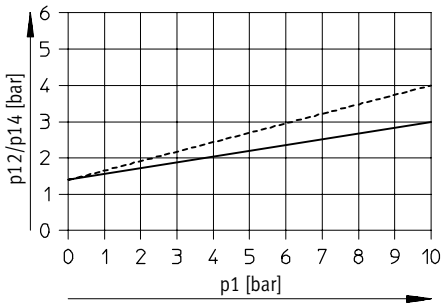
Minimum pilot pressure p12, p14 as a function of the operating pressure p1 (external pilot air supply)

MFH-5-⅛-S-B



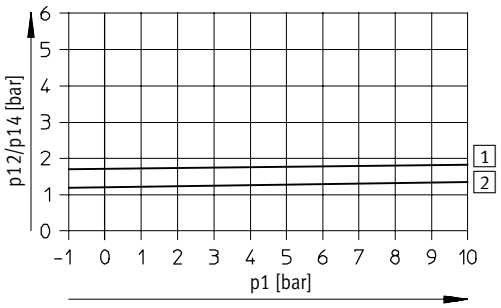
Exhaust throttled
Exhaust unthrottled

MFH-5-¼-S-B



Exhaust throttled
Exhaust unthrottled

MFH-5-⅜-S-B



1 On
2 Off

Valve response times [ms]						
Pneumatic connection	G⅛		G¼		G⅜	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
On	10	10	25	12	28	20
Off	30	30	44	36	55	56

Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

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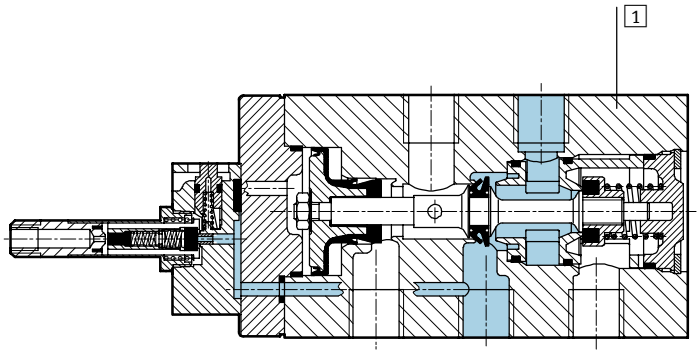
Electrical data			
F solenoid coil			
Electrical connection			Plug vanes for plug sockets MSSD-F, KMF
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529			IP65 (in combination with plug socket)

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

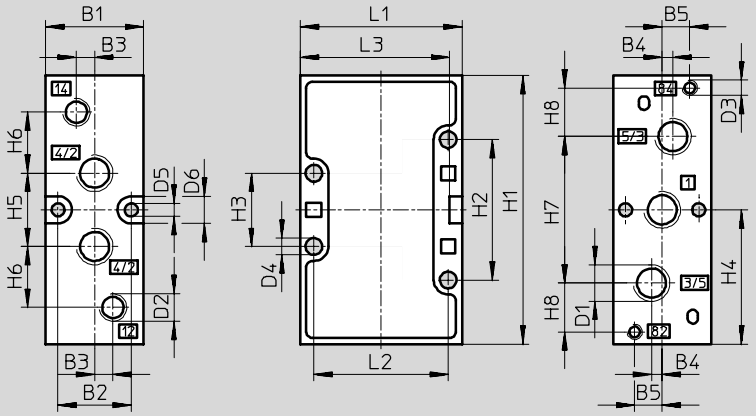
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

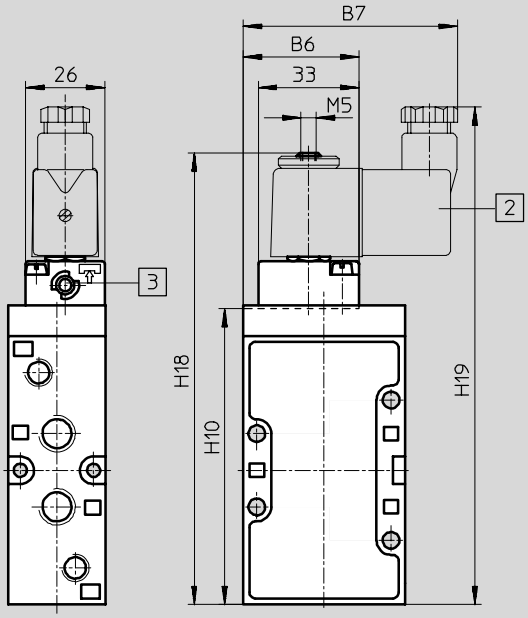
Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve

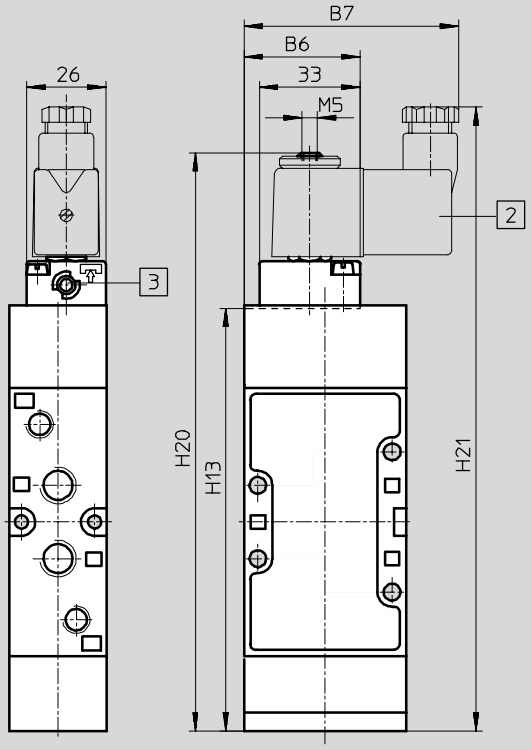


Installation dimensions with F solenoid coil

Mechanical reset



Pneumatic reset



2 Solenoid coil is 360° rotatable

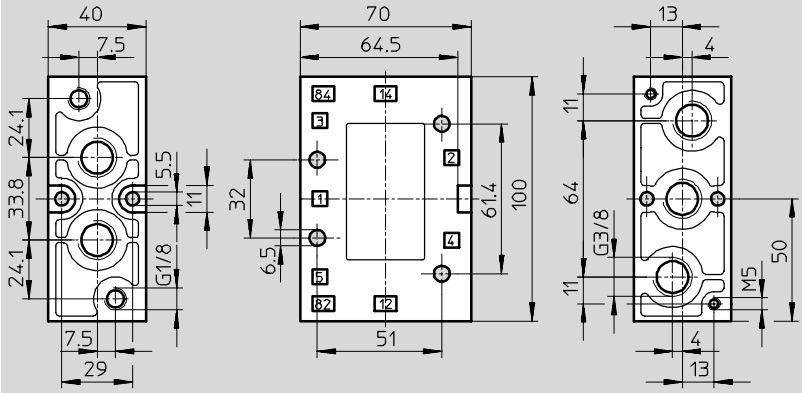
3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1	H2
G⅛	26	19.5	5	3.5	8	36.8	67	G⅛	G⅛	M5	4.5	4.3	9	77	41
G¼	32	24	6	3.5	9	38	70	G¼	G⅛	M5	5.5	4.3	9	88	46

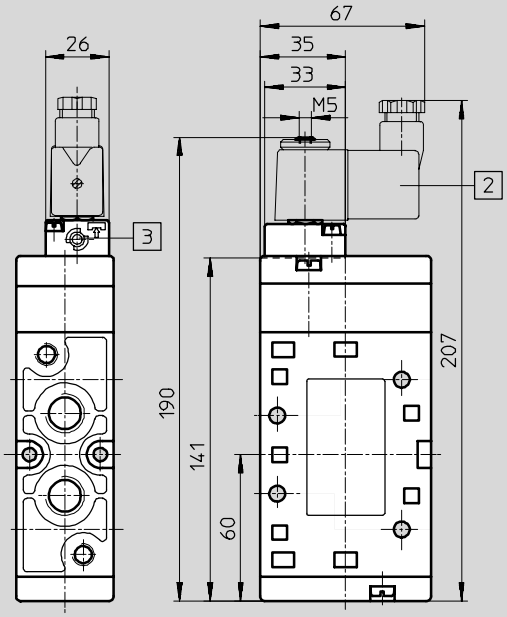
Pneumatic connection	H3	H4	H5	H6	H7	H8	H10	H13	H18	H19	H20	H21	L1	L2	L3
G⅛	21	38.5	22	19	42	12	86.5	126.2	136	152	175	192	47	40	43
G¼	24	44	24	20	48	16	97.5	139	147	163	188	205	53	44	79

Dimensions – Pneumatic connection G⅜ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with F solenoid coil
Mechanical or pneumatic reset

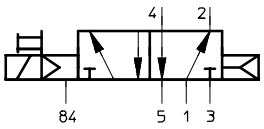
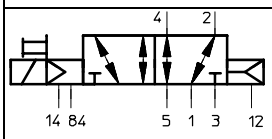
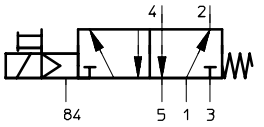
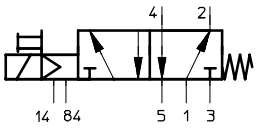
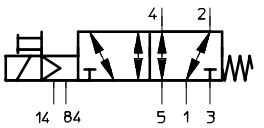


2 Solenoid coil is 360° rotatable
3 Manual override can be repositioned by 180°

Solenoid valves MFH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

Ordering data				
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil[1], pneumatic reset, internal pilot air supply	G1⁄8	**30 991**	**MFH-5-1⁄8-L-B**
		G1⁄4	**31 010**	**MFH-5-1⁄4-L-B**
		G3⁄8	**14 946**	**MFH-5-3⁄8-L-B**
	Without F solenoid coil[1], pneumatic reset, external pilot air supply	G1⁄8	**30 992**	**MFH-5-1⁄8-L-S-B**
		G1⁄4	**33 185**	**MFH-5-1⁄4-L-S-B**
		G3⁄8	**33 181**	**MFH-5-3⁄8-L-S-B**
	Without F solenoid coil[1], mechanical reset, internal pilot air supply	G1⁄8	**19 758**	**MFH-5-1⁄8-B**
		G1⁄4	**15 901**	**MFH-5-1⁄4-B**
		G3⁄8	**19 705**	**MFH-5-3⁄8-B**
	Without F solenoid coil[1], mechanical reset, external pilot air supply	G1⁄8	**19 759**	**MFH-5-1⁄8-S-B**
		G1⁄4	**15 902**	**MFH-5-1⁄4-S-B**
	Without F solenoid coil[1], mechanical reset, external pilot air supply	G3⁄8	**19 706**	**MFH-5-3⁄8-S-B**

1) F solenoid coils ➔ 2 / 2.2-66

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G1⁄8	**125 710**	**MFH-5-1⁄8-B**
G1⁄4	**115 580**	**MFH-5-1⁄4-B**
G3⁄8	**115 074**	**MFH-5-3⁄8-B**

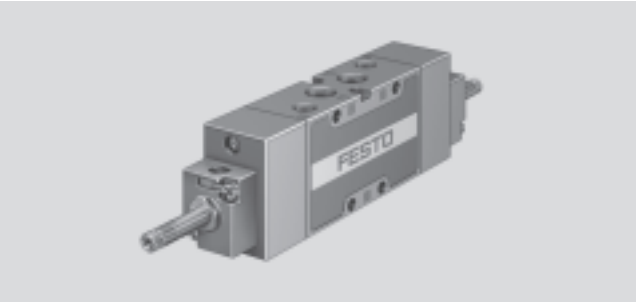
Solenoid valves JMFH-B, Tiger 2000

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

FESTO

- Flow rate
  1000 ... 2000 l/min

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



General technical data					
Pneumatic connection			G⅛	G¼	G⅜
Valve function			5/2-way, double solenoid		
Constructional design			Piston spool		
Sealing principle			Soft		
Actuation type			Electrical		
Type of pilot control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			With flow control		
Manual override			Via accessory, detenting		
Type of mounting			Via through-holes		
Mounting position			Any		
Nominal size		[mm]	8	10	12
Standard nominal flow rate		[l/min]	1000	1600	2000
Grid dimension		[mm]	27	33	41
Product weight		[g]	400	460	650

Operating and environmental conditions					
Pneumatic connection			G⅛	G¼	G⅜
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]	–5 ... +40		
Temperature of medium		[°C]	–10 ... +60		

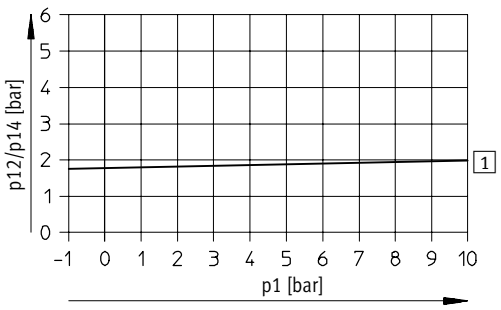
Solenoid valves JMFH-B, Tiger 2000

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

FESTO

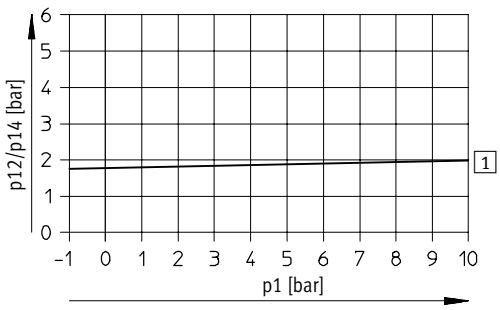
Minimum pilot pressure p12/p14 as a function of the operating pressure p1 (external pilot air supply)

JMFH-5-⅛-S-B



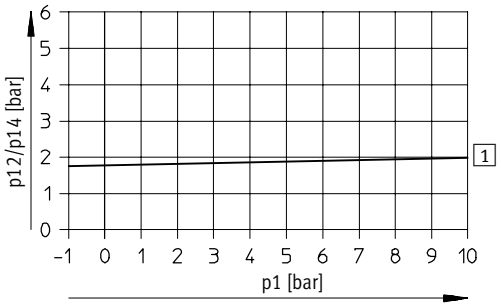
1 On

JMFH-5-¼-S-B



1 On

JMFH-5-⅜-S-B



1 On

Valve response times [ms]			
Pneumatic connection	G⅛	G¼	G⅜
Changeover	12	14	12

Electrical data			
F solenoid coil			
Electrical connection			Plug vanes for plug sockets MSSD-F, KMF
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529			IP65 (in combination with plug socket)

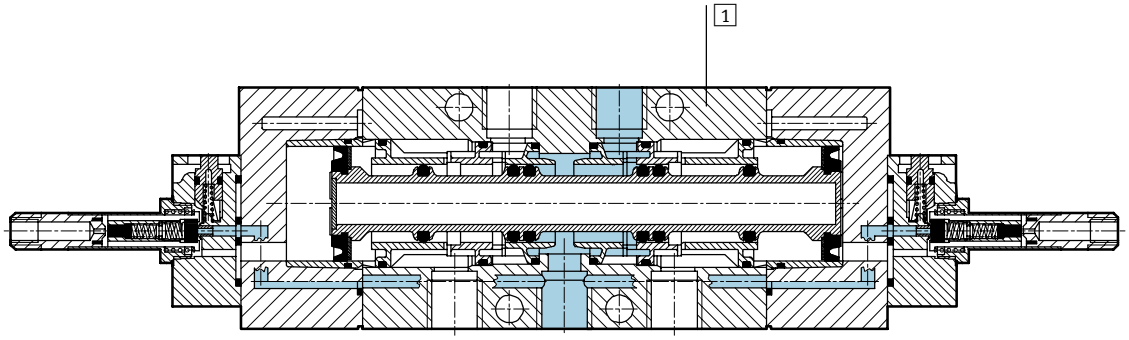
Solenoid valves JMFH-B, Tiger 2000

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

FESTO

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

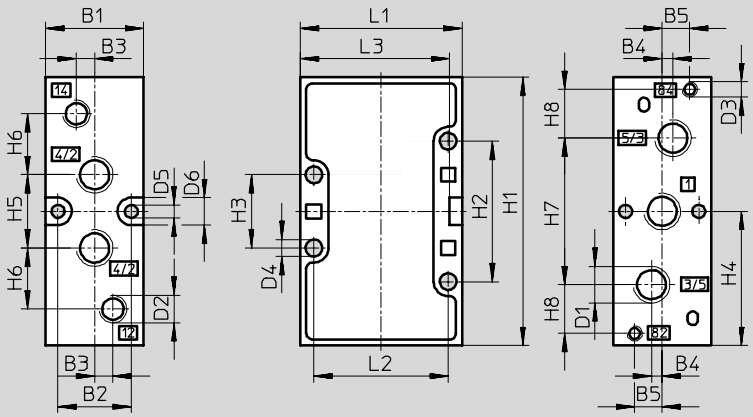
Solenoid valves JMFH-B, Tiger 2000

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

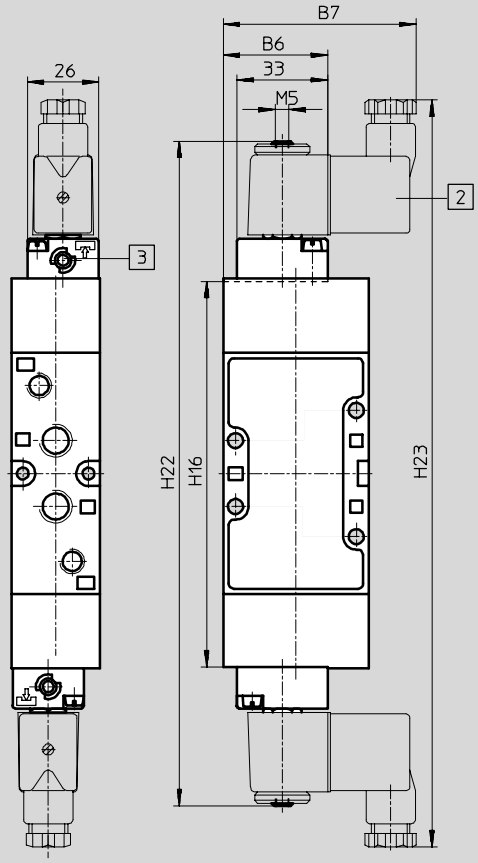
FESTO

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



2 Solenoid coil is 360° rotatable
3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	36.8	67	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	38	70	G¼	G⅛	M5	5.5	4.3	9	88

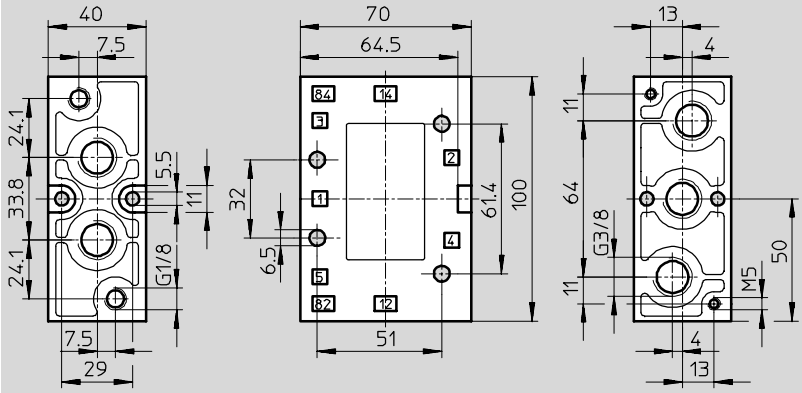
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H16	H22	H23	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	129	227	260	47	40	43
G¼	46	24	44	24	20	48	16	141.5	240	273	53	44	79

Solenoid valves JMFH-B, Tiger 2000

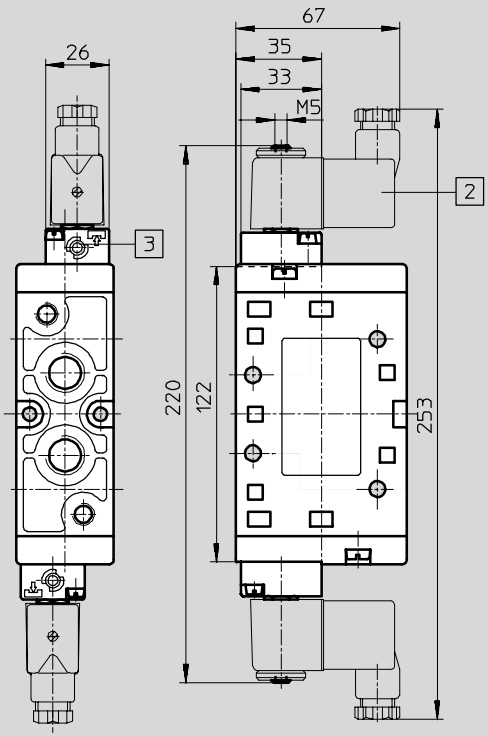
Technical data – 5/2-way valves, double solenoid

Dimensions – Pneumatic connection G⅜ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



2 Solenoid coil is 360° rotatable

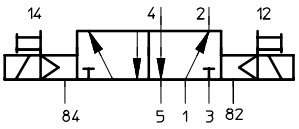
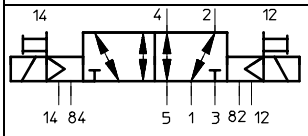
3 Manual override can be repositioned by 180°

Solenoid valves JMFH-B, Tiger 2000

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

FESTO

Ordering data

Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil[1], internal pilot air supply	G1⁄8	**30 486**	**JMFH-5-1⁄8-B**
		G1⁄4	**19 789**	**JMFH-5-1⁄4-B**
		G3⁄8	**19 700**	**JMFH-5-3⁄8-B**
	Without F solenoid coil[1], external pilot air supply	G1⁄8	**30 487**	**JMFH-5-1⁄8-S-B**
		G1⁄4	**19 790**	**JMFH-5-1⁄4-S-B**
		G3⁄8	**19 702**	**JMFH-5-3⁄8-S-B**

1) F solenoid coils ➔ 2 / 2.2-66

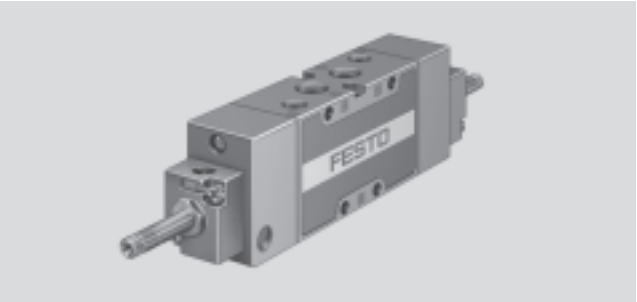
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

- Flow rate
  1000 ... 2600 l/min

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



General technical data					
Pneumatic connection			G1⁄8	G1⁄4	G3⁄8
Valve function			5/3-way, single solenoid		
Constructional design			Piston spool		
Sealing principle			Soft		
Actuation type			Electrical		
Type of reset			Mechanical spring		
Type of pilot control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			With flow control		
Manual override			Via accessory, detenting		
Type of mounting			Via through-holes		
Mounting position			Any		
Nominal size		[mm]	5	7	12
Standard nominal flow rate	Closed	[l/min]	1000	1600	2000
	Exhausted	[l/min]			2200
	Pressurised	[l/min]			2600
Grid dimension		[mm]	27	33	41
Product weight		[g]	400	500	780

Operating and environmental conditions					
Pneumatic connection			G1⁄8	G1⁄4	G3⁄8
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure		[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +40		
Temperature of medium		[°C]	–10 ... +60		

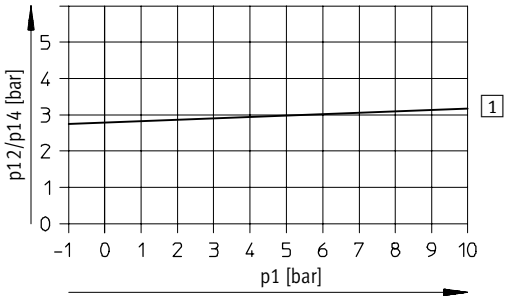
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

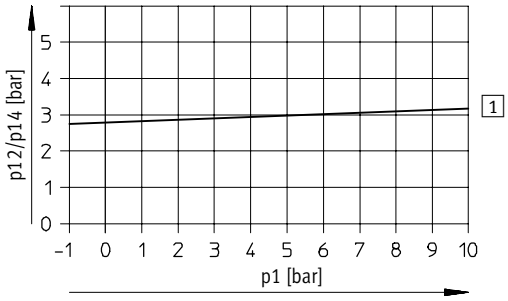
Minimum pilot pressure p12/p14 as a function of the operating pressure p1 (external pilot air supply)

MFH-5/3...-⅛-S-B



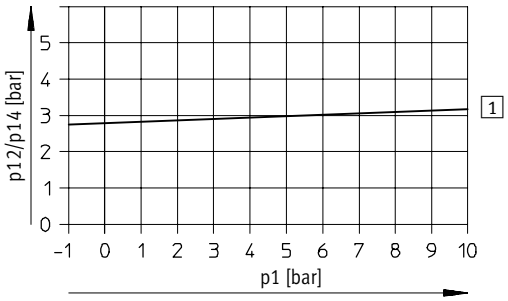
1 On

MFH-5/3...-¼-S-B



1 On

MFH-5/3...-⅜-S-B



1 On

Valve response times [ms]						
Pneumatic connection	G⅛		G¼		G⅜	
	On	Off	On	Off	On	Off
Closed	18	20	20	22	24	80
Exhausted	20	20	24	36	36	85
Pressurised	24	24	34	30	30	82

Solenoid valves MFH-B, Tiger 2000

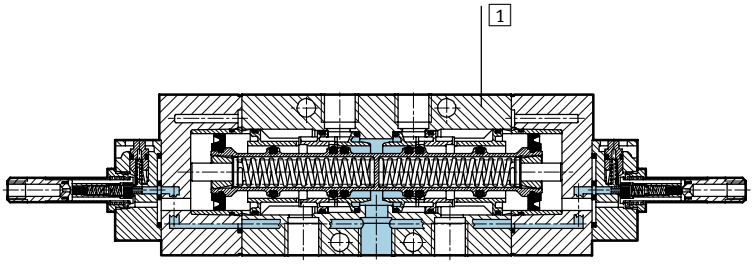
Technical data – 5/3-way valves

FESTO

Electrical data			
F solenoid coil			
Electrical connection			Plug vanes for plug sockets MSSD-F, KMF
Operating voltage	D.C. voltage	[V DC]	12, 24, 42, 48
	A.C. voltage	[V AC]	24, 42, 48, 110, 230, 240 (50 ... 60 Hz)
Coil characteristics	D.C. voltage	[W]	4.5
	A.C. voltage	[VA]	Pull: 7.5 Hold: 6
Protection class to EN 60 529			IP65 (in combination with plug socket)

Materials

Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

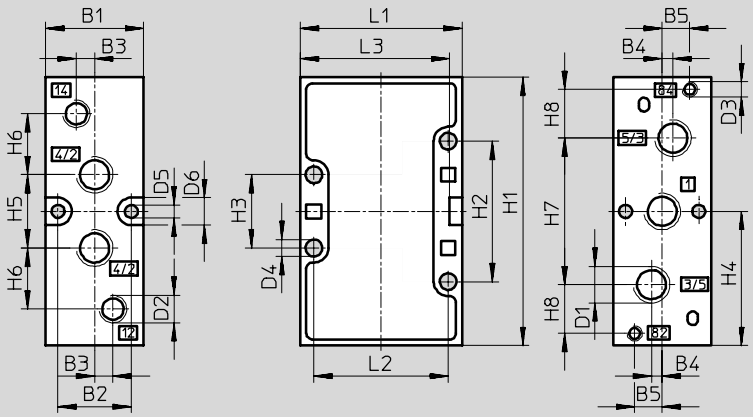
Solenoid valves MFH-B, Tiger 2000

Technical data – 5/3-way valves

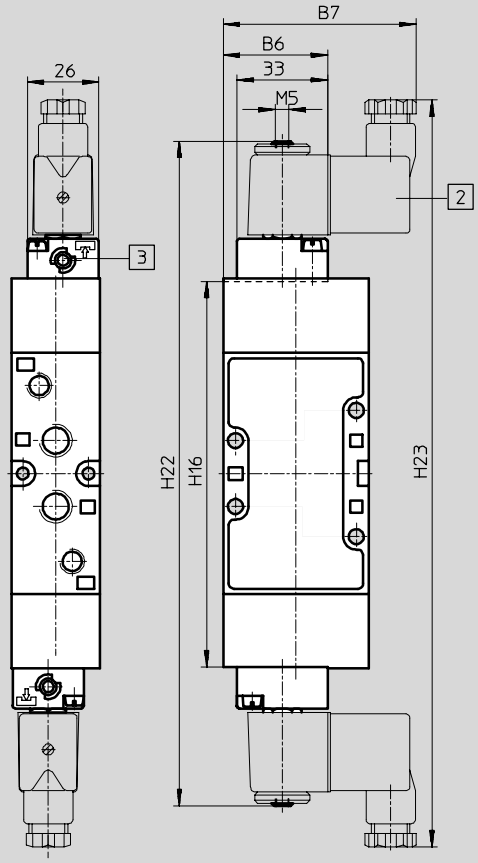
FESTO

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



2 Solenoid coil is 360° rotatable
3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	36.8	67	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	38	70	G¼	G⅛	M5	5.5	4.3	9	88

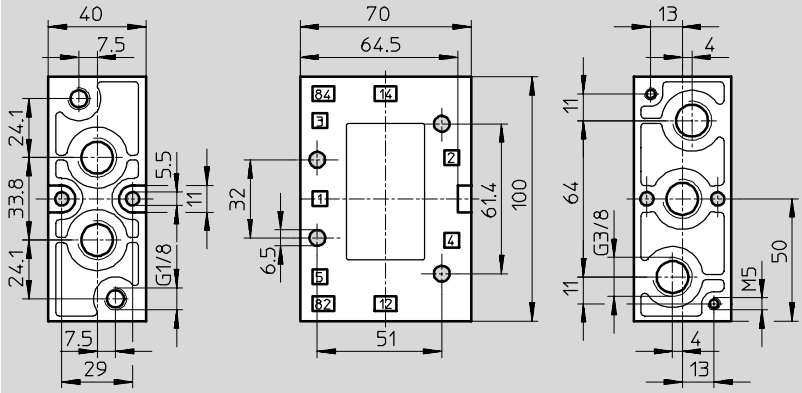
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H16	H22	H23	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	129	227	260	47	40	43
G¼	46	24	44	24	20	48	16	141.5	240	273	53	44	79

Solenoid valves MFH-B, Tiger 2000

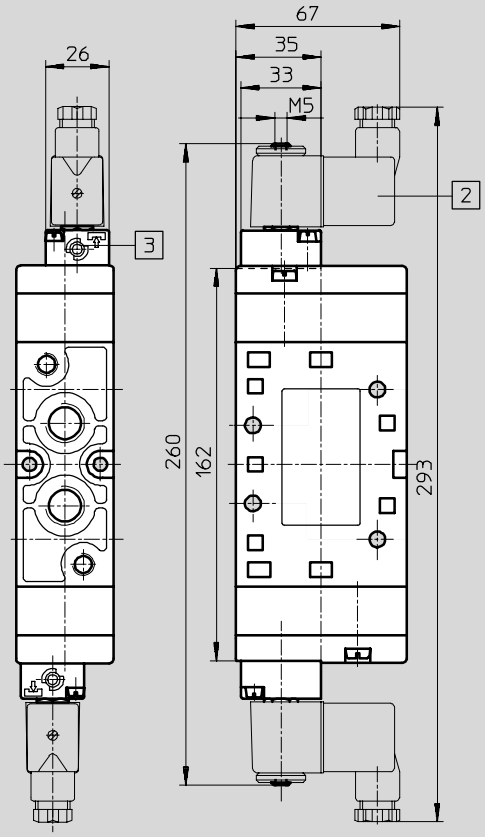
Technical data – 5/3-way valves

Dimensions – Pneumatic connection G3/8 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with F solenoid coil, mechanical or pneumatic reset



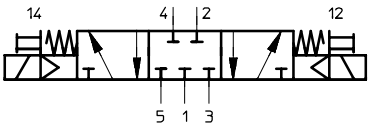
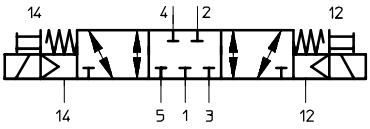
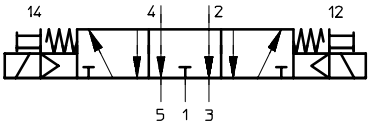
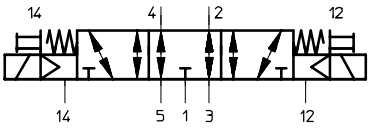
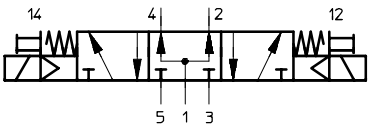
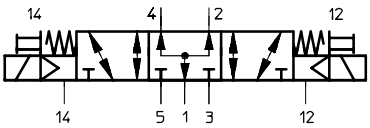
2 Solenoid coil is 360° rotatable
3 Manual override can be repositioned by 180°

Solenoid valves MFH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

Ordering data

Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Without F solenoid coil[1], normally closed, internal pilot air supply	G1/8	30 484	MFH-5/3G-1/8-B
		G1/4	19 787	MFH-5/3G-1/4-B
		G3/8	19 707	MFH-5/3G-3/8-B
	Without F solenoid coil[1], normally closed, external pilot air supply	G1/8	30 993	MFH-5/3G-1/8-S-B
		G1/4	31 001	MFH-5/3G-1/4-S-B
		G3/8	31 317	MFH-5/3G-3/8-S-B
	Without F solenoid coil[1], normally exhausted, internal pilot air supply	G1/8	30 483	MFH-5/3E-1/8-B
		G1/4	19 786	MFH-5/3E-1/4-B
		G3/8	19 708	MFH-5/3E-3/8-B
	Without F solenoid coil[1], normally exhausted, external pilot air supply	G1/8	30 994	MFH-5/3E-1/8-S-B
		G1/4	31 002	MFH-5/3E-1/4-S-B
		G3/8	31 318	MFH-5/3E-3/8-S-B
	Without F solenoid coil[1], normally pressurised, internal pilot air supply	G1/8	30 485	MFH-5/3B-1/8-B
		G1/4	19 788	MFH-5/3B-1/4-B
		G3/8	19 709	MFH-5/3B-3/8-B
	Without F solenoid coil[1], normally pressurised, external pilot air supply	G1/8	30 995	MFH-5/3B-1/8-S-B
		G1/4	31 003	MFH-5/3B-1/4-S-B
		G3/8	31 319	MFH-5/3B-3/8-S-B

1) F solenoid coils ➔ 2 / 2.2-66

Solenoid valves MVH-B, Tiger 2000

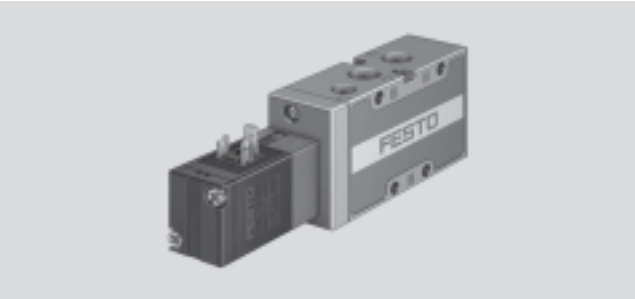
Technical data – 5/2-way valves

FESTO

- Flow rate
  750 ... 2000 l/min

- Voltage
  24 V DC

Wearing parts kits
➔ 2 / 2.2-34



General technical data								
Pneumatic connection			G⅛		G¼		G⅜	
Type of reset			Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic
Valve function			5/2-way, single solenoid					
Constructional design			Poppet	Piston spool	Poppet	Piston spool	Piston spool	
Sealing principle			Soft					
Actuation type			Electrical					
Type of pilot control			Piloted					
Pilot air supply			Internal or external					
Direction of flow			Non-reversible					
Exhaust function			With flow control					
Manual override			Resetting, detenting, covered					
Type of mounting			Via through-holes					
Mounting position			Any					
Nominal size		[mm]	5	8	7	10	12	
Standard nominal flow rate		[l/min]	750	1000	1300	1600	2000	
Grid dimension		[mm]	27		33		41	
Product weight		[g]	230	290	360	495	750	

Operating and environmental conditions								
Pneumatic connection			G⅛		G¼		G⅜	
Type of reset			Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum					
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	2 ... 10	3 ... 10	2 ... 10	2 ... 10	2 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	0 ... 10	–0.9 ... +10	0 ... 10	–0.9 ... +10	–0.9 ... +10
Pilot pressure		[bar]	3 ... 10	2 ... 10	3 ... 10	1.5 ... 10	2 ... 10	2 ... 10
Ambient temperature		[°C]	–5 ... +50					
Temperature of medium		[°C]	–5 ... +50					

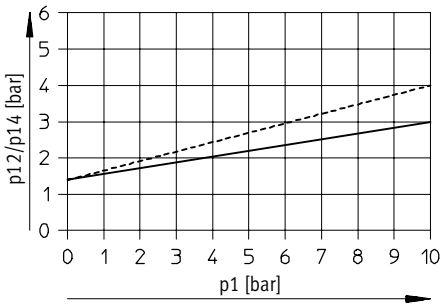
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

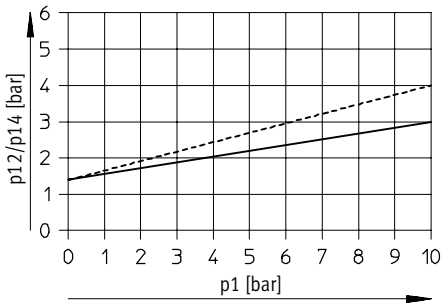
Minimum pilot pressure p12/p14 as a function of the operating pressure p1 (external pilot air supply)

MVH-5-1⁄8-S-B



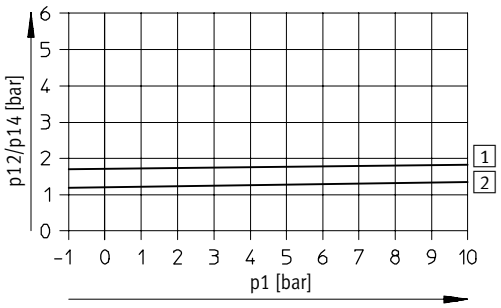
Exhaust throttled
Exhaust unthrottled

MVH-5-1⁄4-S-B



Exhaust throttled
Exhaust unthrottled

MVH-5-3⁄8-S-B



1 On
2 Off

Valve response times [ms]						
Pneumatic connection	G1⁄8		G1⁄4		G3⁄8	
Type of reset	Pneumatic	Mechanical	Pneumatic	Mechanical	Pneumatic	Mechanical
On	31	20	33	15	22	22
Off	18	36	40	36	60	60

Solenoid valves MVH-B, Tiger 2000

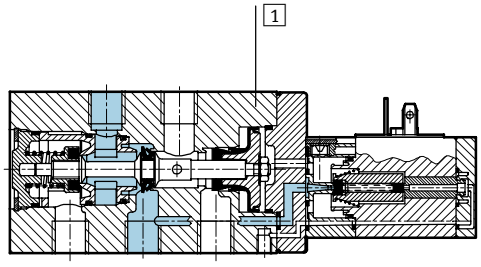
Technical data – 5/2-way valves

FESTO

Electrical data			
V solenoid			
Electrical connection			To DIN EN 175301-803 type B
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529			IP65 (in combination with plug socket)

Materials

Sectional view



1	Housing	Die-cast aluminium, plastic
–	Seals	Nitrile rubber

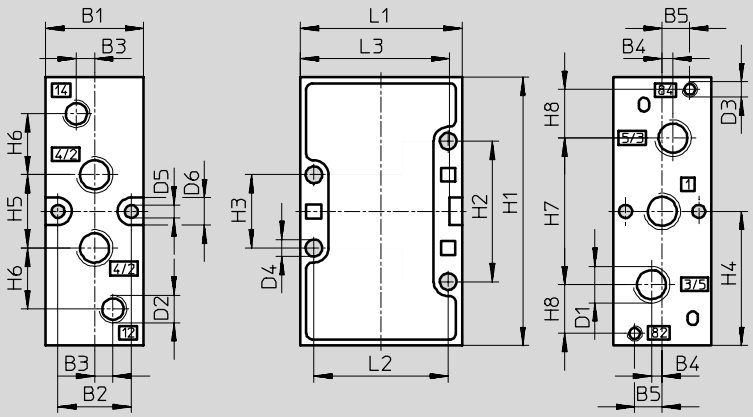
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

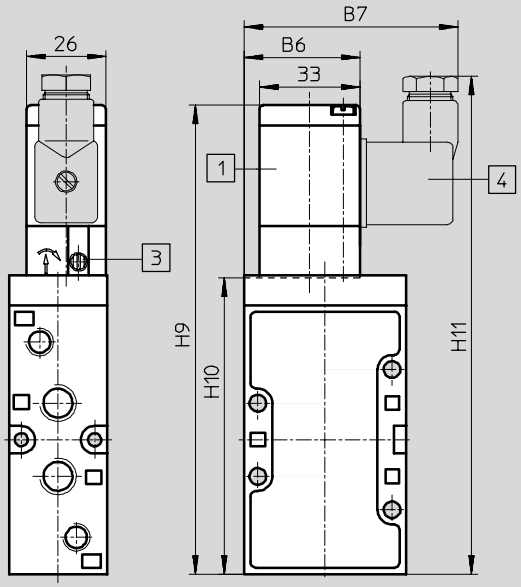
Dimensions – Pneumatic connection G1⁄8, G1⁄4 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve

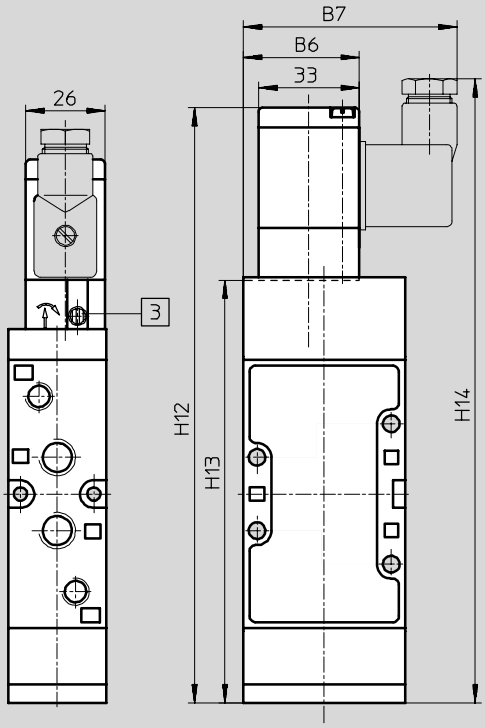


Installation dimensions with V solenoid coil

Mechanical reset



Pneumatic reset



1 Solenoid coil can be repositioned by 180°

3 Manual override can be repositioned by 180°

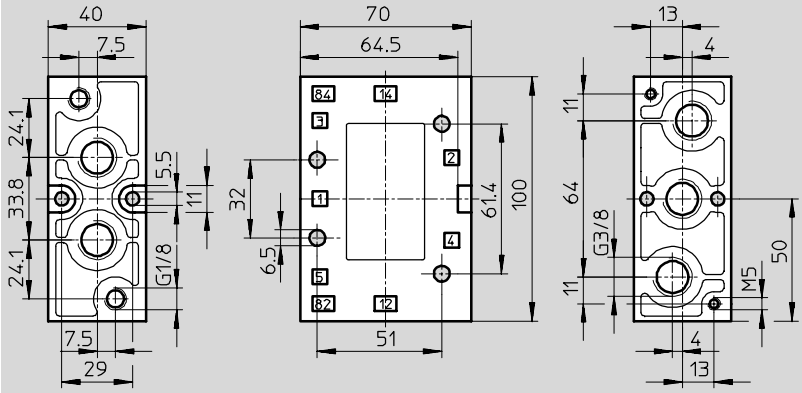
4 Plug socket connection to EN 175301-803 type B

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1	H2	H3	H4
G1⁄8	26	19.5	5	3.5	8	36.8	67	G1⁄8	G1⁄8	M5	4.5	4.3	9	77	41	21	38.5
G1⁄4	32	24	6	3.5	9	38	70	G1⁄4	G1⁄8	M5	5.5	4.3	9	88	46	24	44

Pneumatic connection	H5	H6	H7	H8	H9	H10	H11	H12	H13	H14	H18	H19	H20	H21	L1	L2	L3
G1⁄8	22	19	42	12	143	86.5	153	183	126.2	193	136	152	175	192	47	40	43
G1⁄4	24	20	48	16	154	97.5	163	196	139	206	147	163	188	205	53	44	79

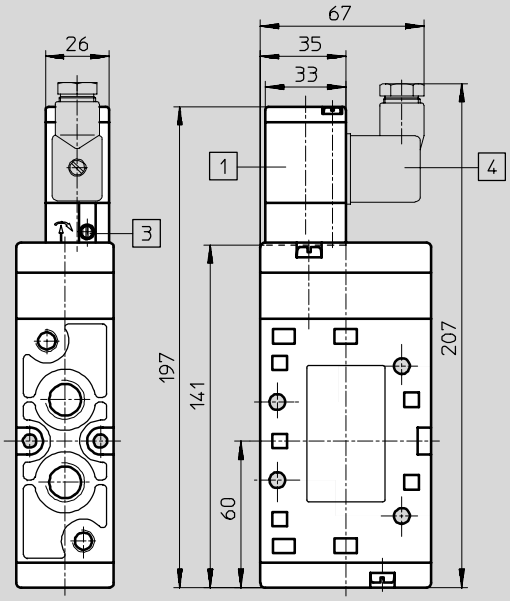
Dimensions – Pneumatic connection G3/8 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with V solenoid coil

Mechanical or pneumatic reset



1 Solenoid coil is 360° rotatable

3 Manual override can be repositioned by 180°

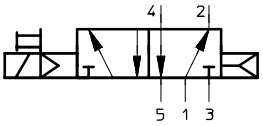
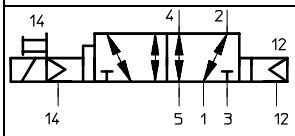
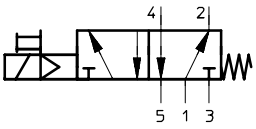
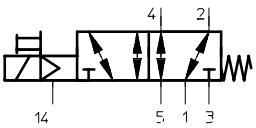
4 Plug socket connection to EN 175301-803 type B

Solenoid valves MVH-B, Tiger 2000

Technical data – 5/2-way valves

FESTO

Ordering data

Circuit symbol	Description	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, pneumatic reset, internal pilot air supply	24 V DC	G1/8	**19 749**	**MVH-5-1/8-L-B**
			G1/4	**31 009**	**MVH-5-1/4-L-B**
			G3/8	**14 947**	**MVH-5-3/8-L-B**
	With V solenoid coil, pneumatic reset, external pilot air supply	24 V DC	G1/8	**19 750**	**MVH-5-1/8-L-S-B**
			G1/4	**33 184**	**MVH-5-1/4-L-S-B**
			G3/8	**33 180**	**MVH-5-3/8-L-S-B**
	With V solenoid coil, mechanical reset, internal pilot air supply	24 V DC	G1/8	**19 779**	**MVH-5-1/8-B**
			G1/4	**15 701**	**MVH-5-1/4-B**
			G3/8	**14 945**	**MVH-5-3/8-B**
	With V solenoid coil, mechanical reset, external pilot air supply	24 V DC	G1/8	**30 996**	**MVH-5-1/8-S-B**
			G1/4	**15 903**	**MVH-5-1/4-S-B**
			G3/8	**15 342**	**MVH-5-3/8-S-B**

Ordering data – Wearing parts kits

Pneumatic connection	Part No.	Type
G1/8	**125 071**	**MVH-5-1/8-B**
G1/4	**115 588**	**MVH-5-1/4-B**
G3/8	**115 074**	**MVH-5-3/8-B**

Solenoid valves JMVH-B, Tiger 2000

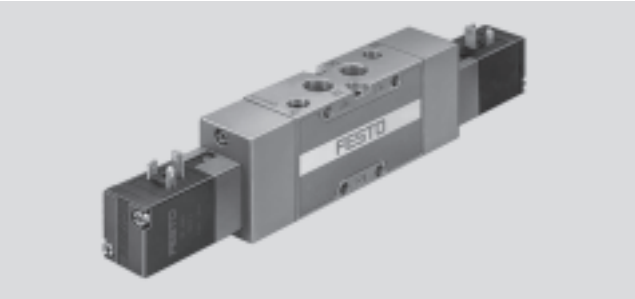
Technical data – 5/2-way valves, double solenoid

FESTO

- Flow rate
  1000 ... 2000 l/min

- Voltage
  24 V DC

Wearing parts kits
➔ 2 / 2.2-40



General technical data					
Pneumatic connection			G⅛	G¼	G⅜
Valve function			5/2-way, double solenoid		
Constructional design			Piston spool		
Sealing principle			Soft		
Actuation type			Electrical		
Type of pilot control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			With flow control		
Manual override			Resetting, detenting, covered		
Type of mounting			Via through-holes		
Mounting position			Any		
Nominal size		[mm]	5	7	12
Standard nominal flow rate		[l/min]	750	1300	2000
Grid dimension		[mm]	27	33	41
Product weight		[g]	560	615	900

Operating and environmental conditions					
Pneumatic connection			G⅛	G¼	G⅜
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	2 ... 10	2 ... 10	2 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure		[bar]	2 ... 10	2 ... 10	2 ... 10
Ambient temperature		[°C]	–5 ... +50		
Temperature of medium		[°C]	–5 ... +50		

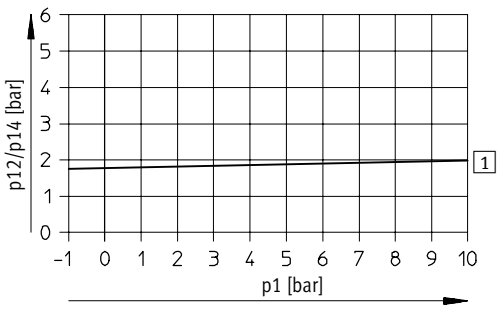
Solenoid valves JMVH-B, Tiger 2000

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

FESTO

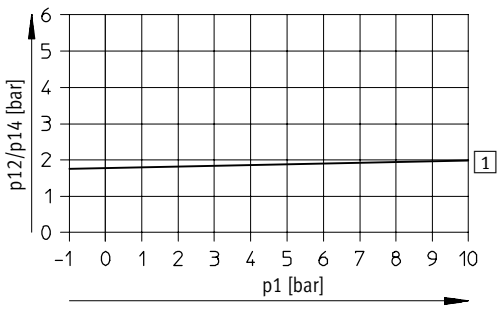
Minimum pilot pressure p12/p14 as a function of the operating pressure p1 (external pilot air supply)

JMVH-5-⅛-S-B



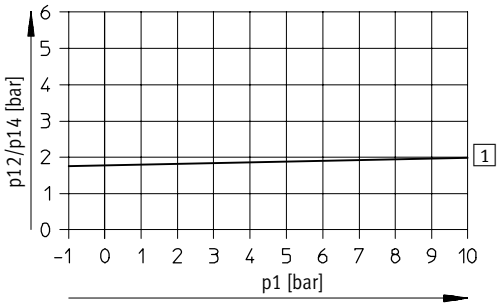
1 On

JMVH-5-¼-S-B



1 On

JMVH-5-⅜-S-B



1 On

Valve response times [ms]			
Pneumatic connection	G⅛	G¼	G⅜
Changeover	18	16	17

Solenoid valves JMVH-B, Tiger 2000

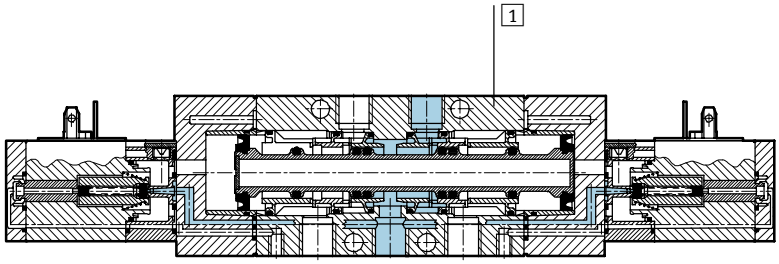
Technical data – 5/2-way valves, double solenoid

FESTO

Electrical data			
V solenoid			
Electrical connection			To DIN EN 175301-803 type B
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529			IP65 (in combination with plug socket)

Materials

Sectional view



1	Housing	Die-cast aluminium, plastic
–	Seals	Nitrile rubber

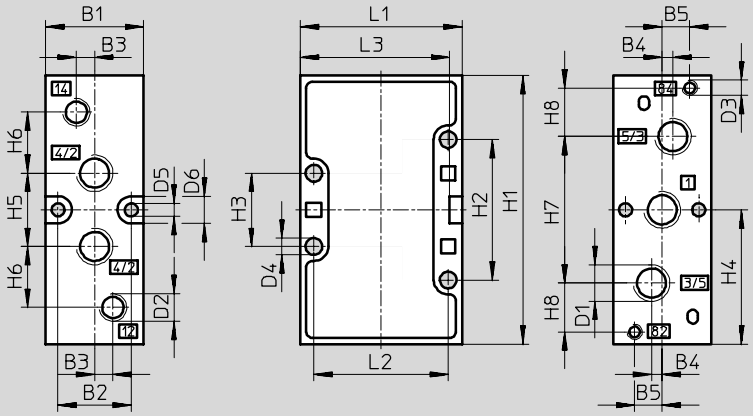
Solenoid valves JMVH-B, Tiger 2000

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

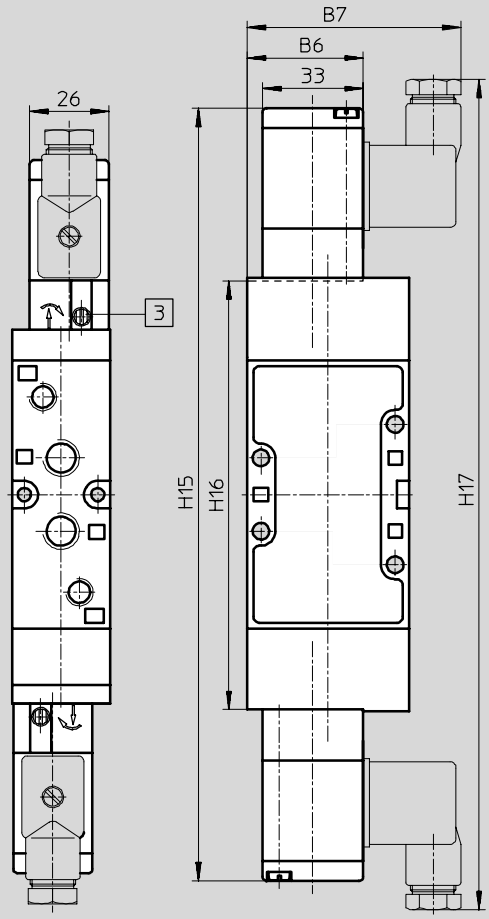
FESTO

Dimensions – Pneumatic connection G1⁄8, G1⁄4 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset



3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G1⁄8	26	19.5	5	3.5	8	36.8	67	G1⁄8	G1⁄8	M5	4.5	4.3	9	77
G1⁄4	32	24	6	3.5	9	38	70	G1⁄4	G1⁄8	M5	5.5	4.3	9	88

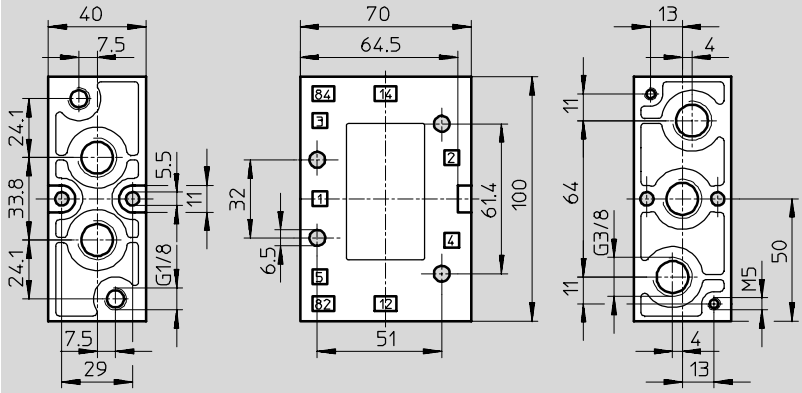
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H15	H16	H17	L1	L2	L3
G1⁄8	41	21	38.5	22	19	42	12	242	129	262	47	40	43
G1⁄4	46	24	44	24	20	48	16	255	141.5	275	53	44	79

Solenoid valves JMVH-B, Tiger 2000

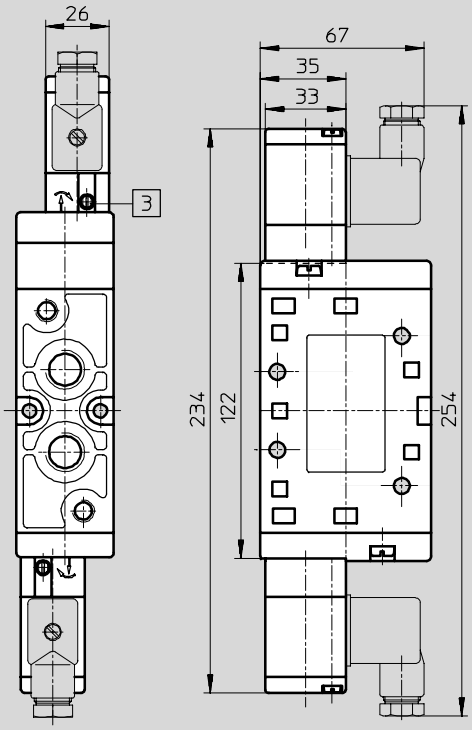
Technical data – 5/2-way valves, double solenoid

Dimensions – Pneumatic connection G3/8 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset

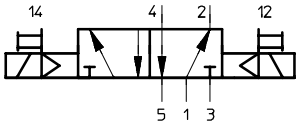
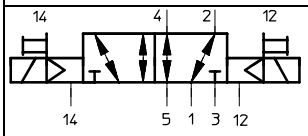


3 Manual override can be repositioned by 180°

Solenoid valves JMVH-B, Tiger 2000

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

FESTO

Ordering data					
Circuit symbol	Solenoid coil	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, internal pilot air supply	24 V DC	G1/8	**30 475**	**JMVH-5-1/8-B**
			G1/4	**19 136**	**JMVH-5-1/4-B**
			G3/8	**14 948**	**JMVH-5-3/8-B**
	With V solenoid coil, external pilot air supply	24 V DC	G1/8	**30 476**	**JMVH-5-1/8-S-B**
			G1/4	**19 137**	**JMVH-5-1/4-S-B**
			G3/8	**15 343**	**JMVH-5-3/8-S-B**

Ordering data – Wearing parts kits		
Pneumatic connection	Part No.	Type
G1/8	**115 590**	**JMVH-5-1/8-B-(SB)**
G1/4	**115 589**	**JMVH-5-1/4-B-(SB)**

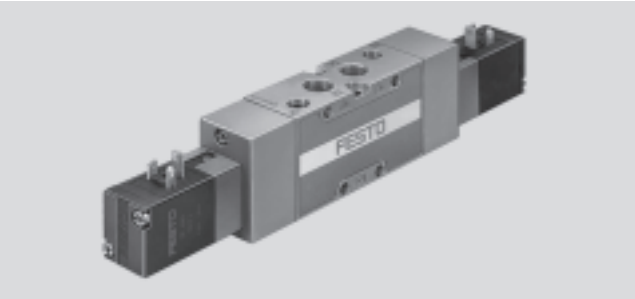
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

- Flow rate
  1000 ... 2600 l/min

- Voltage
  24 V DC



General technical data					
Pneumatic connection			G1⁄8	G1⁄4	G3⁄8
Valve function			5/3-way, single solenoid		
Constructional design			Piston spool		
Sealing principle			Soft		
Actuation type			Electrical		
Type of reset			Mechanical spring		
Type of pilot control			Piloted		
Pilot air supply			Internal or external		
Direction of flow			Non-reversible		
Exhaust function			With flow control		
Manual override			Resetting, detenting, covered		
Type of mounting			Via through-holes		
Mounting position			Any		
Nominal size		[mm]	5	7	12
Standard nominal flow rate	Closed	[l/min]	1000	1600	2000
	Exhausted	[l/min]			2200
	Pressurised	[l/min]			2600
Grid dimension		[mm]	27	33	41
Product weight		[g]	575	660	1000

Operating and environmental conditions					
Pneumatic connection			G1⁄8	G1⁄4	G3⁄8
Operating medium			Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	Internal pilot air supply	[bar]	3 ... 10	3 ... 10	3 ... 10
	External pilot air supply	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure		[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature		[°C]	–5 ... +50		
Temperature of medium		[°C]	–5 ... +50		

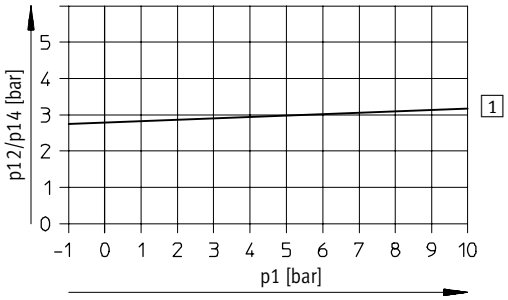
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

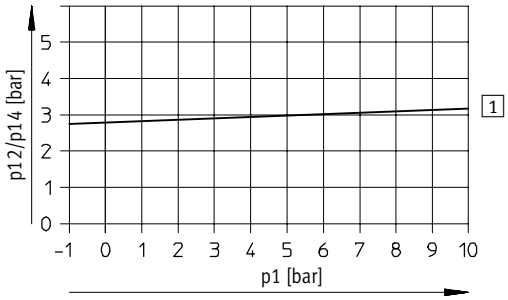
Minimum pilot pressure p12/p14 as a function of the operating pressure p1 (external pilot air supply)

MVH-5/3...-⅛-S-B



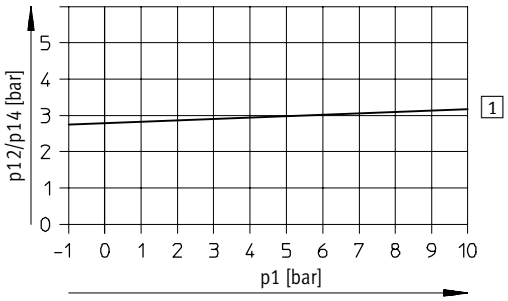
1 On

MVH-5/3...-¼-S-B



1 On

MVH-5/3...-⅜-S-B



1 On

Valve response times [ms]						
Pneumatic connection	G⅛		G¼		G⅜	
	On	Off	On	Off	On	Off
Closed	18	20	20	22	24	80
Exhausted	20	20	24	36	36	85
Pressurised	24	24	34	30	30	82

Solenoid valves MVH-B, Tiger 2000

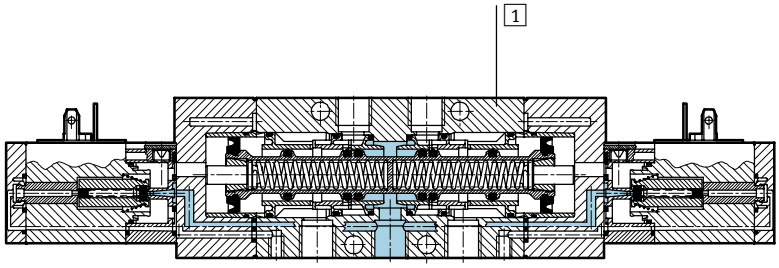
Technical data – 5/3-way valves

FESTO

Electrical data			
V solenoid			
Electrical connection			To DIN EN 175301-803 type B
Operating voltage	D.C. voltage	[V DC]	24
Coil characteristics	D.C. voltage	[W]	2.5
Protection class to EN 60 529			IP65 (in combination with plug socket)

Materials

Sectional view



1	Housing	Die-cast aluminium, plastic
–	Seals	Nitrile rubber

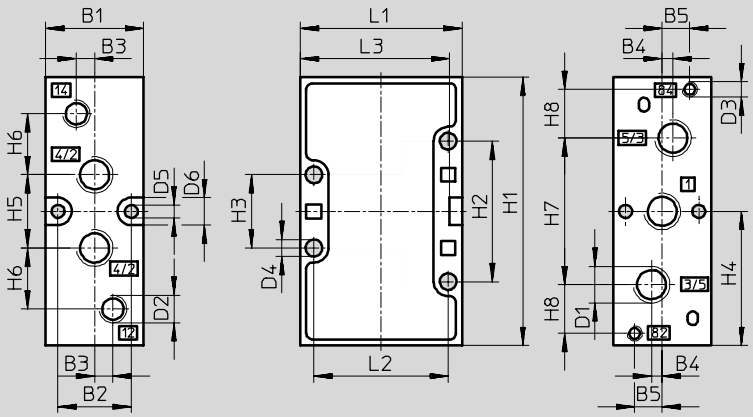
Solenoid valves MVH-B, Tiger 2000

Technical data – 5/3-way valves

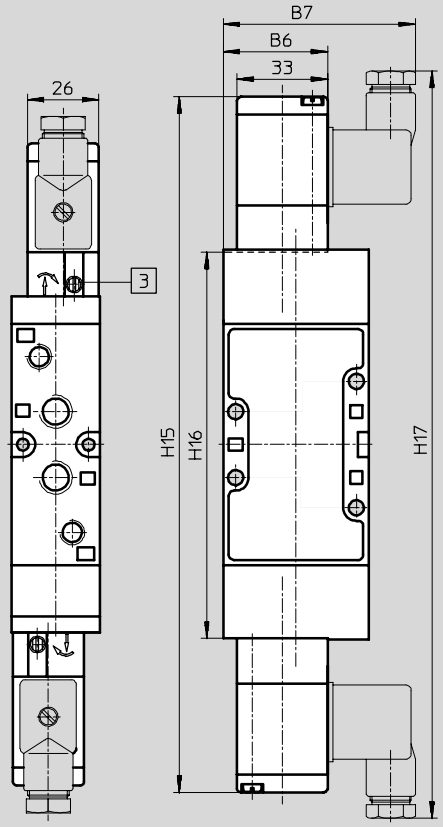
FESTO

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset



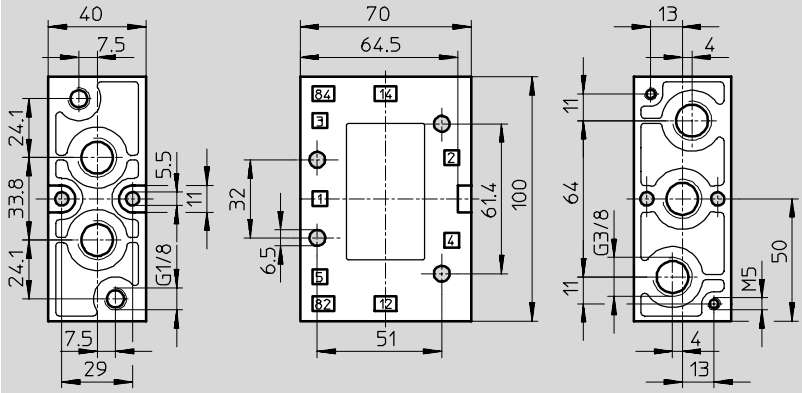
3 Manual override can be repositioned by 180°

Pneumatic connection	B1	B2	B3	B4	B5	B6	B7	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	36.8	67	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	38	70	G¼	G⅛	M5	5.5	4.3	9	88

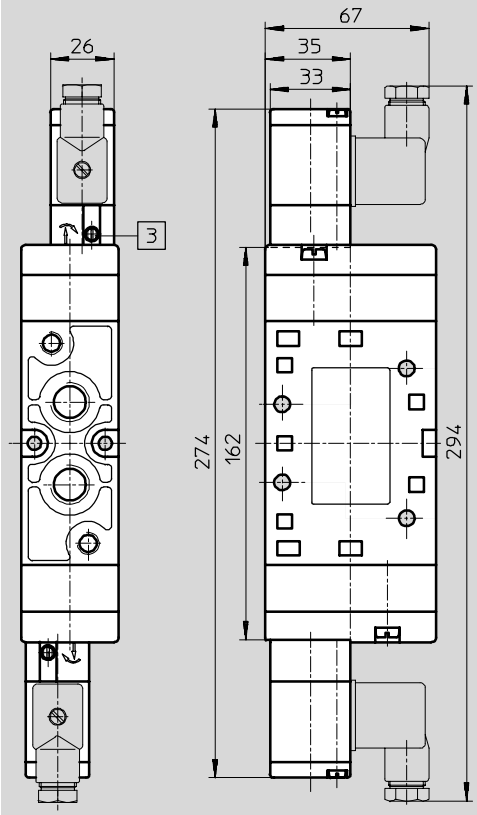
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H15	H16	H17	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	242	129	262	47	40	43
G¼	46	24	44	24	20	48	16	255	141.5	275	53	44	79

Dimensions – Pneumatic connection G3/8 Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve



Installation dimensions with V solenoid coil, mechanical or pneumatic reset



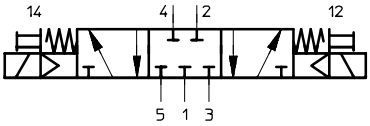
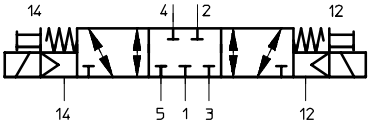
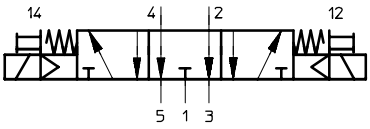
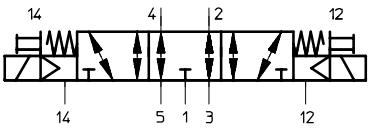
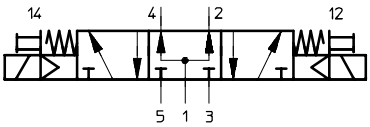
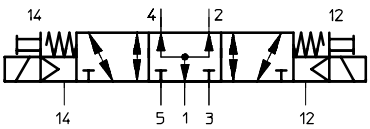
3 Manual override can be repositioned by 180°

Solenoid valves MVH-B, Tiger 2000

Technical data – 5/3-way valves

FESTO

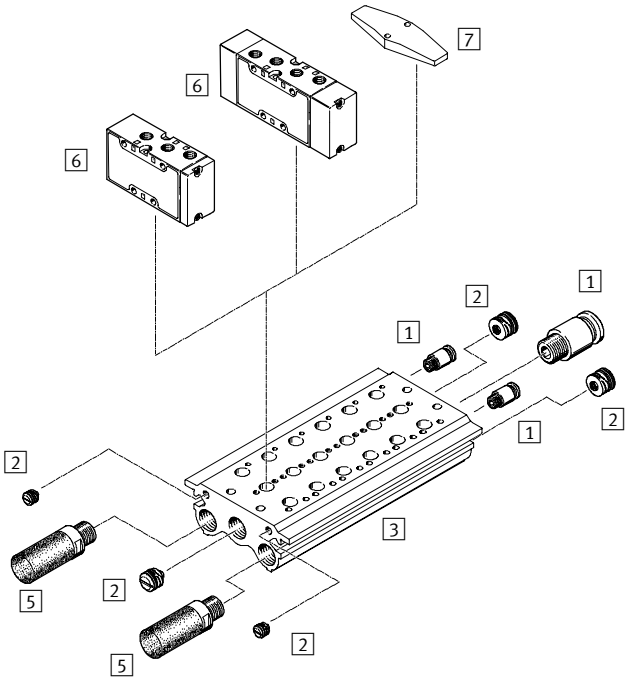
Ordering data

Circuit symbol	Description	Voltage	Pneumatic connection	Part No.	Type
	With V solenoid coil, normally closed, internal pilot air supply	24 V DC	G1/8	**30 477**	**MVH-5/3G-1/8-B**
			G1/4	**19 138**	**MVH-5/3G-1/4-B**
			G3/8	**14 944**	**MVH-5/3G-3/8-B**
	With V solenoid coil, normally closed, external pilot air supply	24 V DC	G1/8	**30 997**	**MVH-5/3G-1/8-S-B**
			G1/4	**31 004**	**MVH-5/3G-1/4-S-B**
			G3/8	**15 346**	**MVH-5/3G-3/8-S-B**
	With V solenoid coil, normally exhausted, internal pilot air supply	24 V DC	G1/8	**30 478**	**MVH-5/3E-1/8-B**
			G1/4	**19 139**	**MVH-5/3E-1/4-B**
			G3/8	**14 943**	**MVH-5/3E-3/8-B**
	With V solenoid coil, normally exhausted, external pilot air supply	24 V DC	G1/8	**30 998**	**MVH-5/3E-1/8-S-B**
			G1/4	**31 005**	**MVH-5/3E-1/4-S-B**
			G3/8	**15 344**	**MVH-5/3E-3/8-S-B**
	With V solenoid coil, normally pressurised, internal pilot air supply	24 V DC	G1/8	**30 480**	**MVH-5/3B-1/8-B**
			G1/4	**19 140**	**MVH-5/3B-1/4-B**
			G3/8	**19 699**	**MVH-5/3B-3/8-B**
	With V solenoid coil, normally pressurised, external pilot air supply	24 V DC	G1/8	**30 999**	**MVH-5/3B-1/8-S-B**
			G1/4	**31 006**	**MVH-5/3B-1/4-S-B**
			G3/8	**15 348**	**MVH-5/3B-3/8-S-B**

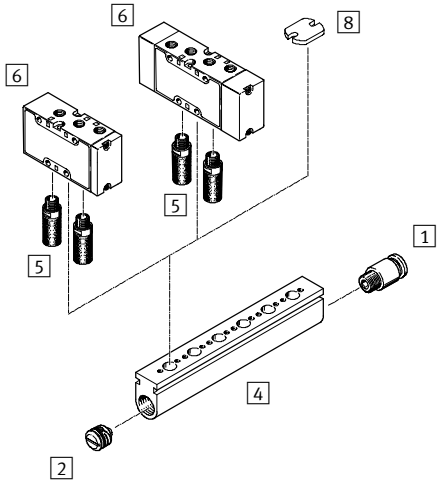
Pneumatic valves, Tiger 2000

Peripherals overview

Mounting on manifold



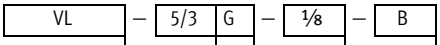
Mounting on manifold strip



Accessories			
		Brief description	**➔ Page**
1	Push-in fitting QS	For connecting compressed air tubing with standard O.D.	Volume 3
2	Sealing plug PRSV		2 / 2.2-64
3	Manifold PRS		2 / 2.2-62
4	Manifold strip PAL		2 / 2.2-60
5	Silencer	For fitting in exhaust ports	Volume 3
6	Pneumatic valve VL, J		2 / 2.2-5
7	Blanking plate PRSB	For covering vacant positions	2 / 2.2-64
8	Blanking plate PALB	For covering vacant positions	2 / 2.2-64

Pneumatic valves, Tiger 2000

Type code



Type	
VL	Single pilot
J	Double pilot

Valve function	
5	5/2-way valve
5/3	5/3-way valve

Normal position	
G	Closed
E	Exhausted
B	Pressurised

Pneumatic connection	
⅛	G⅛
¼	G¼
⅜	G⅜

Generation	
B	Series B

Pneumatic valves VL, Tiger 2000

Technical data – 5/2-way valves

FESTO

- Flow rate
  750 ... 2000 l/min

Wearing parts kits
➔ 2 / 2.2-52

General technical data				
Pneumatic connection		G⅛	G¼	G⅜
Valve function		5/2-way, single pilot		
Constructional design		Poppet		Piston spool
Sealing principle		Soft		
Actuation type		Pneumatic		
Type of reset		Mechanical spring		
Type of pilot control		Direct		
Direction of flow		Non-reversible		Reversible
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	5	7	12
Standard nominal flow rate	[l/min]	750	1300	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	170	240	570

Operating and environmental conditions				
Pneumatic connection		G⅛	G¼	G¼
Operating medium		Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	[bar]	0 ... 10	0 ... 10	–0.9 ... +10
Pilot pressure	[bar]	1.5 ... 10	1.5 ... 10	2 ... 10
Ambient temperature	[°C]	–10 ... +60		
Temperature of medium	[°C]	–10 ... +60		

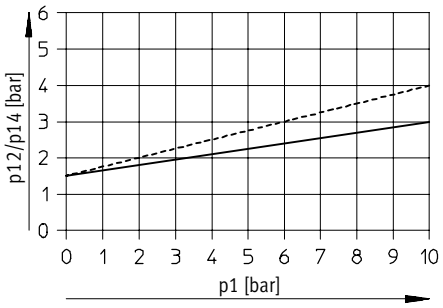
Pneumatic valves VL, Tiger 2000

Technical data – 5/2-way valves

FESTO

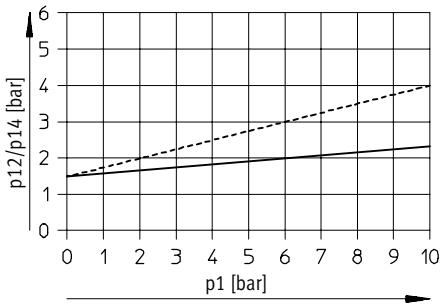
Minimum pilot pressure p12, p14 as a function of the operating pressure p1

VL-5-⅛-B



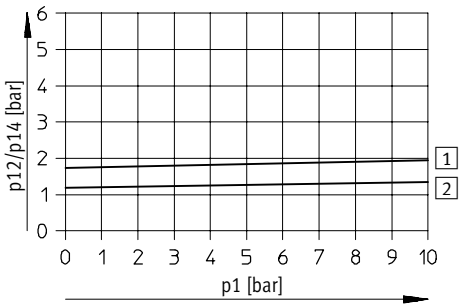
Exhaust throttled
Exhaust unthrottled

VL-5-¼-B



Exhaust throttled
Exhaust unthrottled

VL-5-⅜-B

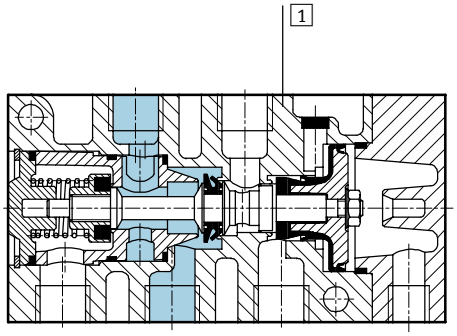


1 On
2 Off

Valve response times [ms]			
Pneumatic connection	G⅛	G¼	G⅜
On	2	2	4
Off	10	12	16

Materials

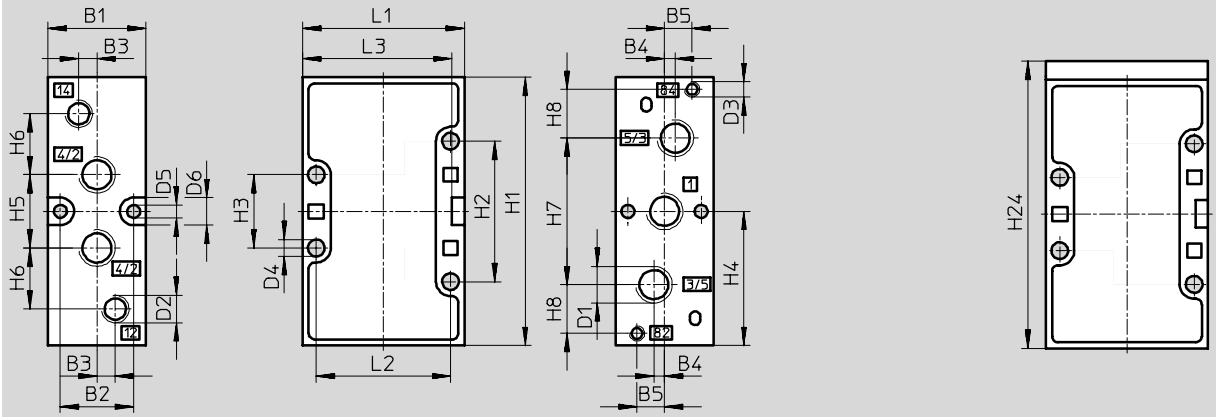
Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve VL-5-...-B

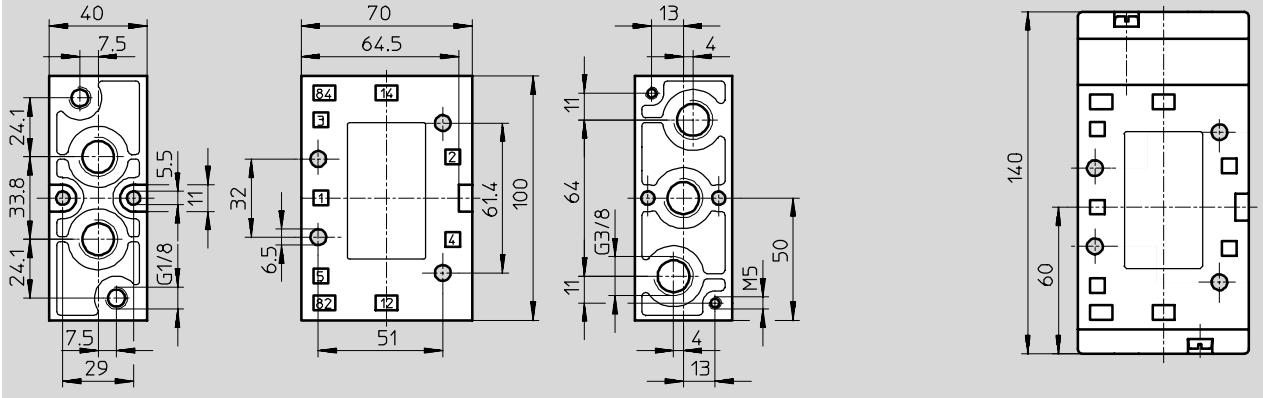


Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	G¼	G⅛	M5	5.5	4.3	9	88

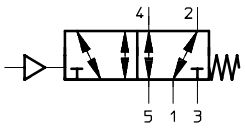
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H24	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	83	47	40	43
G¼	46	24	44	24	20	48	16	94	53	44	79

Dimensions – Pneumatic connection G⅜ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve VL-5- ⅜-B



Ordering data

Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Mechanical reset	G1/8	**31 000**	**VL-5-1/8-B**
		G1/4	**14 294**	**VL-5-1/4-B**
		G3/8	**14 952**	**VL-5-3/8-B**

Ordering data – Wearing parts kits

Pneumatic connection	Part No.	Type
G1/8	**125 710**	**VL-5-1/8-B**
G1/4	**115 580**	**VL-5-1/4-B**

Pneumatic valves J, Tiger 2000

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

- Flow rate
  800 ... 2000 l/min

General technical data				
Pneumatic connection		G⅛	G¼	G⅜
Valve function		5/2-way, double pilot		
Constructional design		Piston spool		
Sealing principle		Soft		
Actuation type		Pneumatic		
Type of pilot control		Direct		
Direction of flow		Reversible		
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	8	10	12
Standard nominal flow rate	[l/min]	800	1600	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	320	375	550

Operating and environmental conditions				
Pneumatic connection		G⅛	G¼	G¼
Operating medium		Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure	[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature	[°C]	–10 ... +60		
Temperature of medium	[°C]	–10 ... +60		

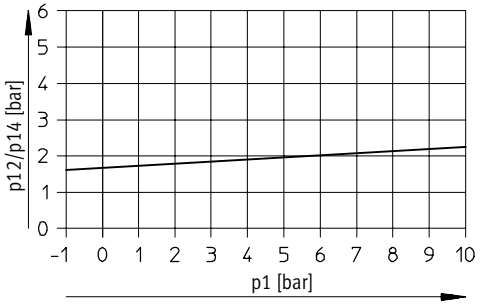
Pneumatic valves J, Tiger 2000

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

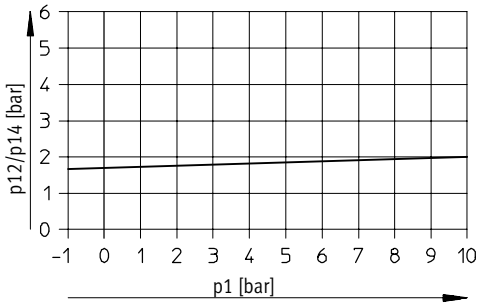
FESTO

Minimum pilot pressure p12/p14 as a function of the operating pressure p1

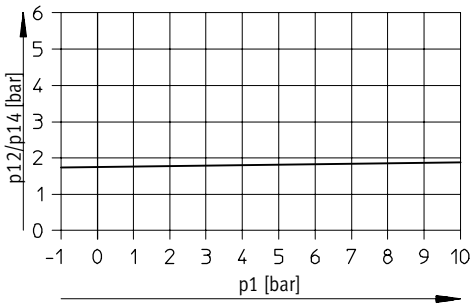
J-5-⅛-B



J-5--¼-B



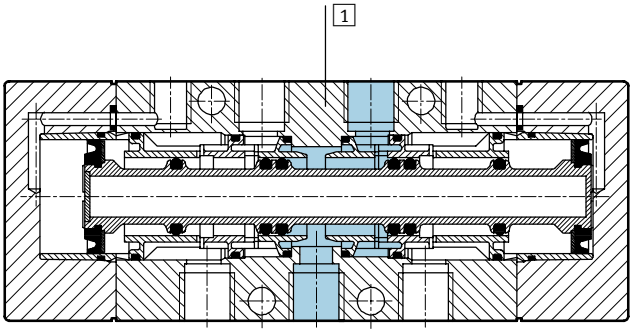
J-5-⅜-B



Valve response times [ms]			
Pneumatic connection	G⅛	G¼	G⅜
Changeover	3	3	3

Materials

Sectional view



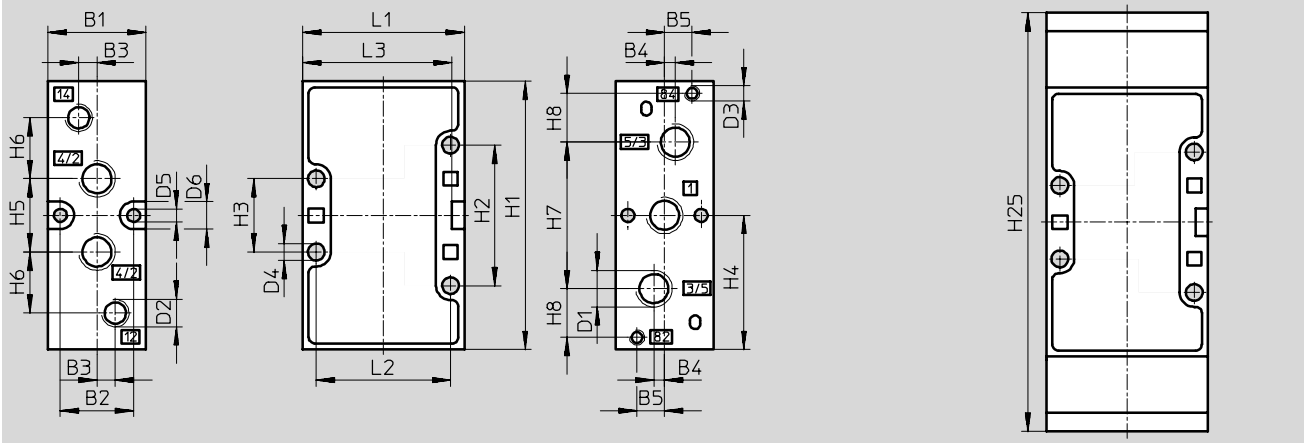
1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Pneumatic valves J, Tiger 2000

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

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve J-5- ... -B

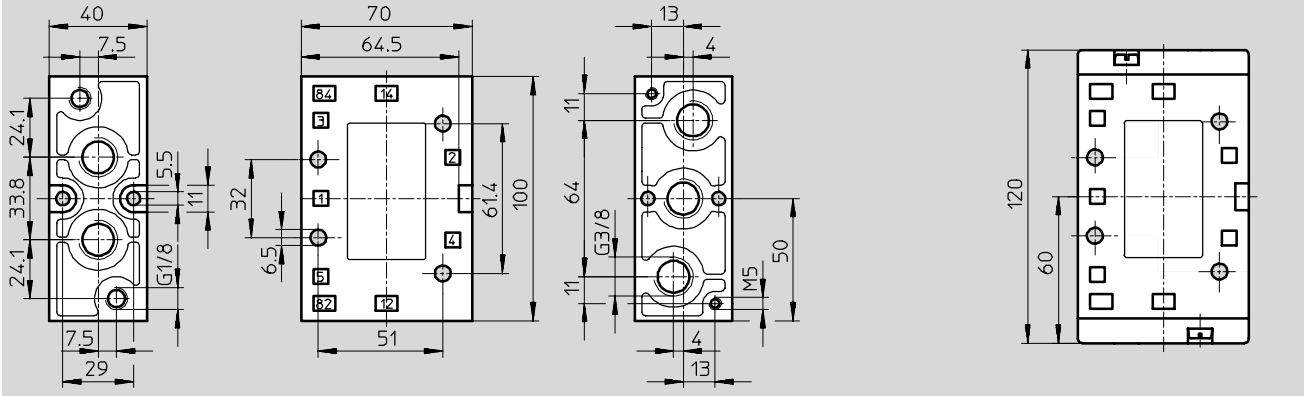


Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	G¼	G⅛	M5	5.5	4.3	9	88

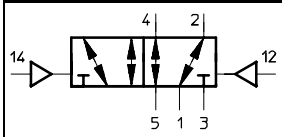
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H25	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	124	47	40	43
G¼	46	24	44	24	20	48	16	137	53	44	79

Dimensions – Pneumatic connection G⅜ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve J-5- ⅜-B



Ordering data

Circuit symbol	Pneumatic connection	Part No.	Type
	G⅛	**30 988**	**J-5-⅛-B**
	G¼	**14 295**	**J-5-¼-B**
	G⅜	**14 953**	**J-5-⅜-B**

Pneumatic valves VL, Tiger 2000

Technical data – 5/3-way valves

FESTO

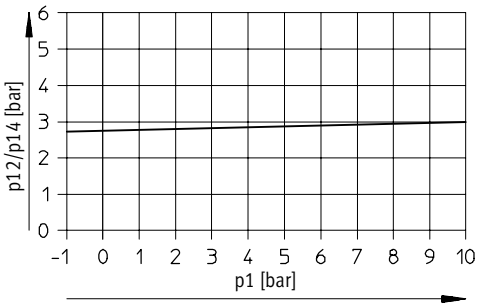
Flow rate
800 ... 2000 l/min

General technical data				
Pneumatic connection		G1/8	G1/4	G3/8
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		
Direction of flow		Reversible		
Exhaust function		With flow control		
Manual override		None		
Type of mounting		Via through-holes		
Mounting position		Any		
Nominal size	[mm]	8	10	12
Standard nominal flow rate	[l/min]	800	1600	2000
Grid dimension	[mm]	27	33	41
Product weight	[g]	320	375	680

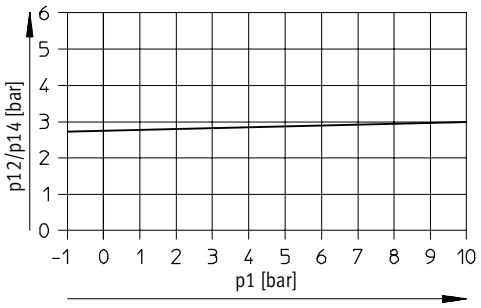
Operating and environmental conditions				
Pneumatic connection		G1/8	G1/4	G3/8
Operating medium		Filtered compressed air, lubricated or unlubricated Vacuum		
Operating pressure	[bar]	–0.9 ... +10	–0.9 ... +10	–0.9 ... +10
Pilot pressure	[bar]	3 ... 10	3 ... 10	3 ... 10
Ambient temperature	[°C]	–10 ... +60		
Temperature of medium	[°C]	–10 ... +60		

Minimum pilot pressure p12/p14 as a function of the operating pressure p1

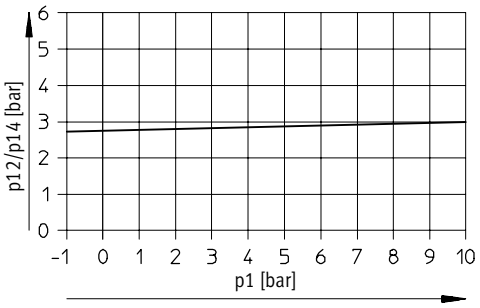
VL-5/3...-⅛-B



VL-5/3...-¼-B



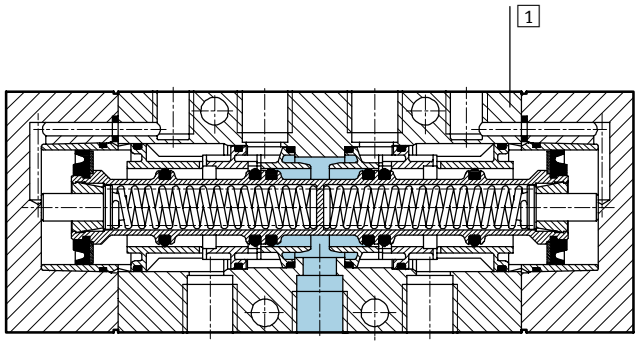
VL-5/3...-⅜-B



Valve response times [ms]			
Pneumatic connection	G⅛	G¼	G⅜
On	5	6	7
Off	14	26	28

Materials

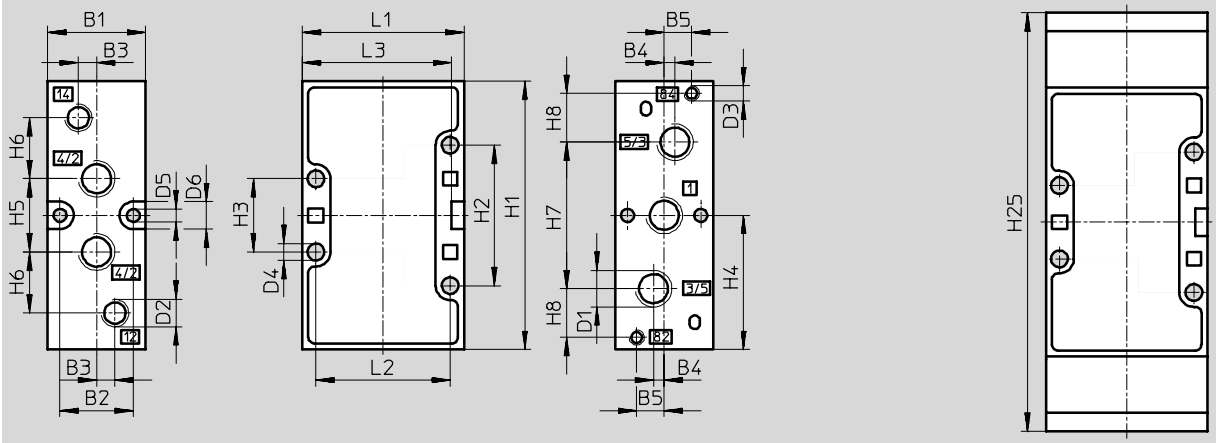
Sectional view



1	Housing	Die-cast aluminium
–	Seals	Nitrile rubber

Dimensions – Pneumatic connection G⅛, G¼ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve J-5- ... -B

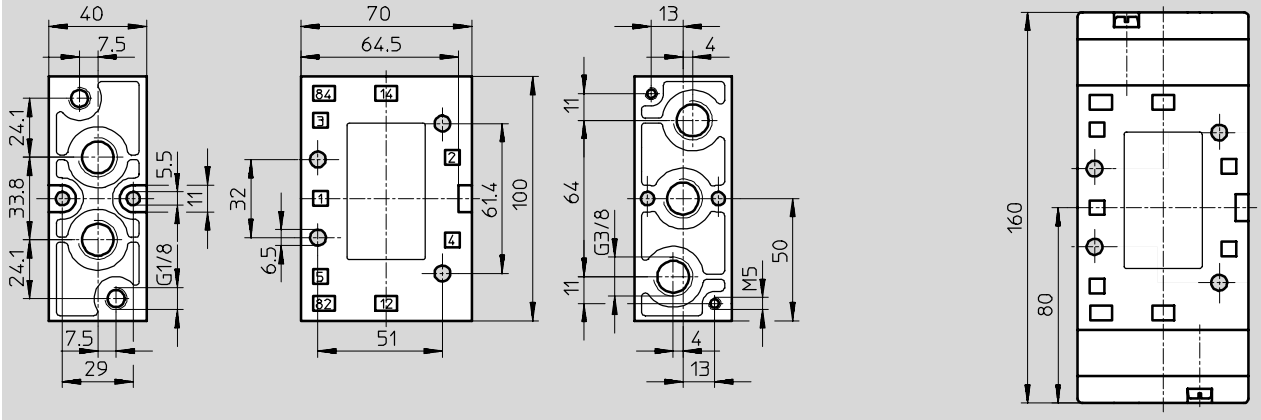


Pneumatic connection	B1	B2	B3	B4	B5	D1	D2	D3	D4 ∅	D5 ∅	D6	H1
G⅛	26	19.5	5	3.5	8	G⅛	G⅛	M5	4.5	4.3	9	77
G¼	32	24	6	3.5	9	G¼	G⅛	M5	5.5	4.3	9	88

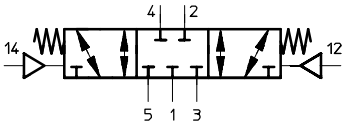
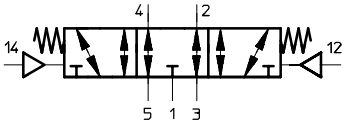
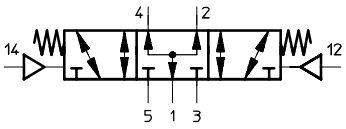
Pneumatic connection	H2	H3	H4	H5	H6	H7	H8	H25	L1	L2	L3
G⅛	41	21	38.5	22	19	42	12	124	47	40	43
G¼	46	24	44	24	20	48	16	137	53	44	79

Dimensions – Pneumatic connection G⅜ Download CAD data ➔ **www.festo.com/en/engineering**

Basic valve VL-5/3...- ⅜-B



Ordering data

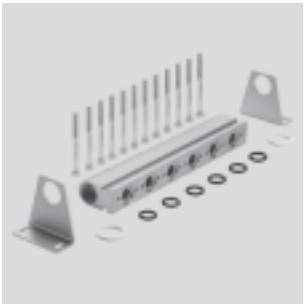
Circuit symbol	Description	Pneumatic connection	Part No.	Type
	Normally closed	G1/8	**30 990**	**VL-5/3G-1/8-B**
		G1/4	**14 298**	**VL-5/3G-1/4-B**
		G3/8	**14 950**	**VL-5/3G-3/8-B**
	Normally exhausted	G1/8	**31 309**	**VL-5/3E-1/8-B**
		G1/4	**14 297**	**VL-5/3E-1/4-B**
		G3/8	**14 949**	**VL-5/3E-3/8-B**
	Normally pressurised	G1/8	**31 310**	**VL-5/3B-1/8-B**
		G1/4	**14 298**	**VL-5/3B-1/4-B**
		G3/8	**14 951**	**VL-5/3B-3/8-B**

Solenoid/pneumatic valves, Tiger 2000

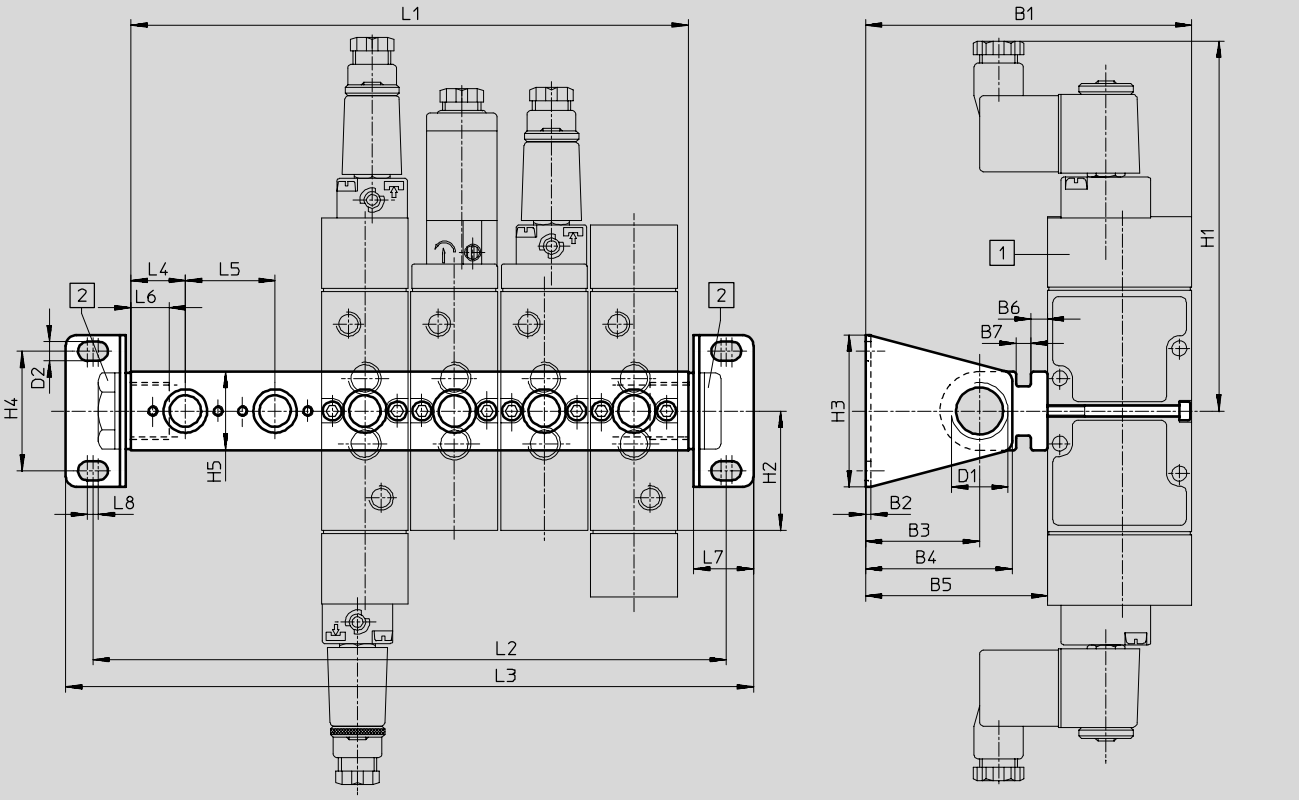
Accessories

Manifold strip
PAL-...-B

Material:
Anodised aluminium



Dimensions Download CAD data ➔ **www.festo.com/en/engineering**



1 The caps on all valves can be repositioned by 180°

2 Blanking plugs and reducing nipples are not included in the scope of delivery
➔ Volume 3

Type	B1	B2	B3	B4	B5	B6	B7	D1	D2	H1	H2	H3	H4	L4	L5	L6	L7	L8
PAL-⅛-...	104	2	33.5	44.5	57	5	5.5	G⅜	5.2	130	38.5	44	32	18	27	12	20	4
PAL-¼-...	120	2	42	54	67	6.1	5.5	G½	7	136	44	56	44	20	33	14	22	4
PAL-⅜-...	176	3	75	93	106	4	14	G¾	9	147	50	80	60	25	41	17	30	5

Solenoid/pneumatic valves, Tiger 2000

Accessories

Dimensions and ordering data						
Number of valve ports	L1	L2	L3	Weight [g]	Part No.	Type
Pneumatic connection G1/8						
2	63	89	107	150	**30 552**	**PAL-1/8-2-B**
3	90	116	134	190	**30 553**	**PAL-1/8-3-B**
4	117	143	161	230	**30 554**	**PAL-1/8-4-B**
5	144	170	188	260	**30 555**	**PAL-1/8-5-B**
6	171	197	215	290	**30 556**	**PAL-1/8-6-B**
7	198	224	242	340	**30 557**	**PAL-1/8-7-B**
8	225	251	269	370	**30 558**	**PAL-1/8-8-B**
9	252	278	296	410	**30 559**	**PAL-1/8-9-B**
10	279	305	323	450	**30 560**	**PAL-1/8-10-B**
Pneumatic connection G1/4						
2	73	101	121	230	**30 280**	**PAL-1/4-2-B**
3	106	134	154	290	**30 281**	**PAL-1/4-3-B**
4	139	167	187	350	**30 282**	**PAL-1/4-4-B**
5	172	200	220	420	**30 283**	**PAL-1/4-5-B**
6	205	233	253	480	**30 284**	**PAL-1/4-6-B**
7	238	266	286	540	**30 285**	**PAL-1/4-7-B**
8	271	299	319	600	**30 286**	**PAL-1/4-8-B**
9	304	322	352	660	**30 287**	**PAL-1/4-9-B**
10	337	365	385	730	**30 288**	**PAL-1/4-10-B**
Pneumatic connection G3/8						
2	91	127	155	510	**30 692**	**PAL-3/8-2-B**
3	132	168	196	610	**30 693**	**PAL-3/8-3-B**
4	173	209	237	720	**30 694**	**PAL-3/8-4-B**
5	214	250	278	830	**30 695**	**PAL-3/8-5-B**
6	255	291	319	960	**30 696**	**PAL-3/8-6-B**
7	296	332	360	1060	**30 697**	**PAL-3/8-7-B**
8	337	373	401	1160	**30 698**	**PAL-3/8-8-B**
9	378	414	442	1260	**30 699**	**PAL-3/8-9-B**
10	419	455	483	1360	**30 680**	**PAL-3/8-10-B**

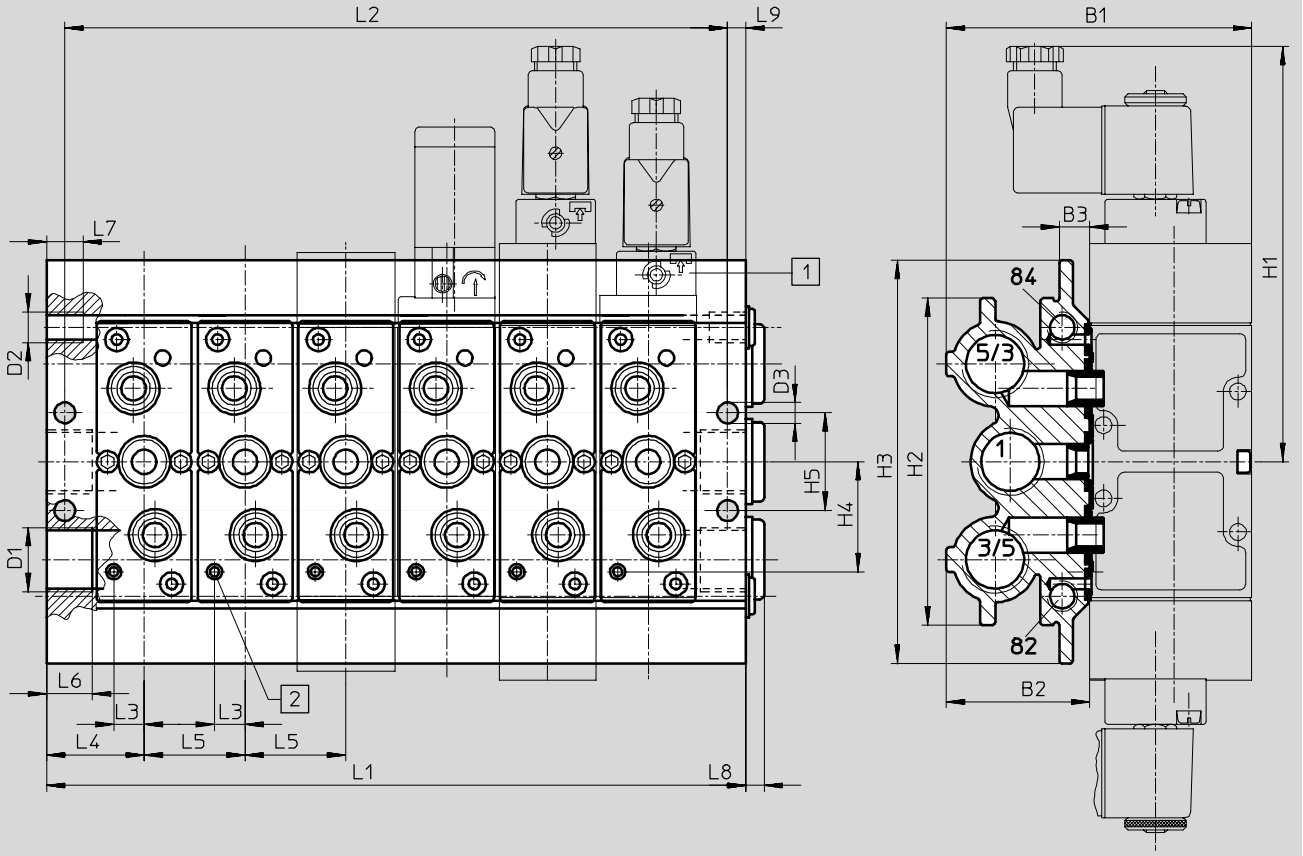
Solenoid/pneumatic valves, Tiger 2000

Accessories

Manifold
PRS

Material:
Anodised aluminium

Dimensions Download CAD data ➔ **www.festo.com/en/engineering**



1 The caps on all valves can be repositioned by 180°

2 Hole for dowel pin to DIN 7346 ∅ 3 mm

Type	B1	B2	B3	D1	D2	D3	H1	H2	H3	H4	H5	L3	L4	L5	L6	L7	L8	L9
PRS-1/8-...	93	45.5	11.2	G3/8	G1/8	6.8	130	95	120	27	27.5	9.4	25.5	27	14	8	5	6
PRS-1/4-...	100	47	10	G1/2	G1/8	6.8	136	107	132	36	32	10	32	33	15	12	6	9
PRS-3/8-...	131	60.5	12.5	G3/4	G1/8	9	147	128	153	44	44	15.2	36.5	41	16	12	6	7.5

Solenoid/pneumatic valves, Tiger 2000

Accessories

Dimensions and ordering data					
Number of valve ports	L1	L2	Weight [g]	Part No.	Type
Pneumatic connection G1/8					
2	78	66	700	**30 542**	**PRS-1/8-2-BB**
3	105	93	920	**30 543**	**PRS-1/8-3-BB**
4	132	120	1150	**30 544**	**PRS-1/8-4-BB**
5	159	147	1320	**30 545**	**PRS-1/8-5-BB**
6	186	174	1520	**30 546**	**PRS-1/8-6-BB**
7	213	201	1750	**30 547**	**PRS-1/8-7-BB**
8	240	228	2010	**30 548**	**PRS-1/8-8-BB**
9	267	255	2200	**30 549**	**PRS-1/8-9-BB**
10	294	282	2400	**30 550**	**PRS-1/8-10-BB**
Pneumatic connection G1/4					
2	97	85	1050	**15 861**	**PRS-1/4-2-B**
3	130	118	1310	**15 862**	**PRS-1/4-3-B**
4	163	151	1610	**15 863**	**PRS-1/4-4-B**
5	196	184	1900	**15 864**	**PRS-1/4-5-B**
6	229	217	2200	**15 865**	**PRS-1/4-6-B**
7	262	250	2500	**15 866**	**PRS-1/4-7-B**
8	259	283	2800	**15 867**	**PRS-1/4-8-B**
9	328	316	3100	**15 868**	**PRS-1/4-9-B**
10	361	349	3360	**30 289**	**PRS-1/4-10-B**
Pneumatic connection G3/8					
2	114	99	1600	**30 682**	**PRS-3/8-2-B**
3	155	140	2100	**30 683**	**PRS-3/8-3-B**
4	196	181	2630	**30 684**	**PRS-3/8-4-B**
5	237	222	3100	**30 685**	**PRS-3/8-5-B**
6	278	263	3500	**30 686**	**PRS-3/8-6-B**
8	360	345	4620	**30 688**	**PRS-3/8-8-B**
10	442	427	5600	**30 680**	**PRS-3/8-10-B**

Solenoid/pneumatic valves, Tiger 2000

Accessories

FESTO

Blanking plate for vacant positions
PRSB

Material:
Die-cast aluminium

Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	33	**15 909**	**PRBS-1/8-B**
G1/4	40	**30 666**	**PRSB-1/4-B**
G3/8	72	**30 681**	**PRSB-3/8-B**

Blanking plate for vacant positions
PALB

Material:
Steel

Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	14	**30 903**	**PALB-1/8-B**
G1/4	22	**30 904**	**PALB-1/4-B**
G3/8	32	**30 905**	**PALB-3/8-B**

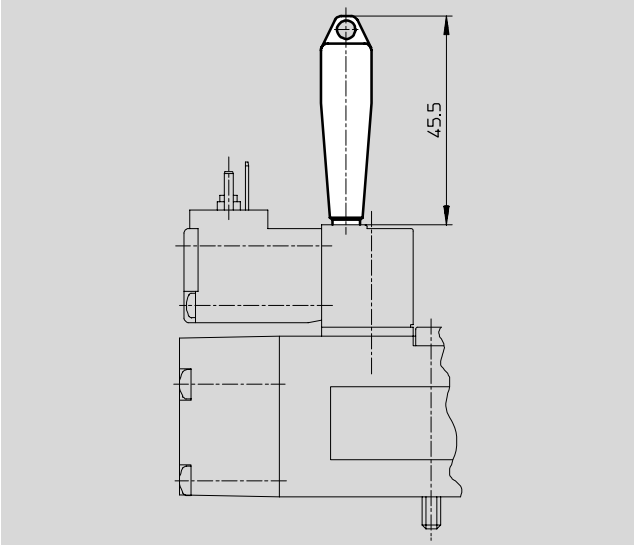
Sealing plug
PRSV

Material:
Steel

Ordering data			
Pneumatic connection	Weight [g]	Part No.	Type
G1/8	18	**160 997**	**PRSV-1/8-B**
G1/4	27	**160 996**	**PRSV-1/4-B**

Manual override tool
AHB

Material:
Polymer



Ordering data				
For valve	Weight [g]	CRC[1]	Part No.	Type
MFH/JMFH	10	2	**157 651**	**AHB-MD/MF/MV**

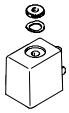
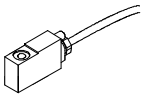
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating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

Inscription labels
KMC/F/V-BZ-35X

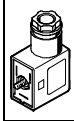
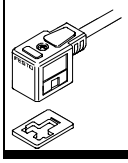
Material:
Polymer

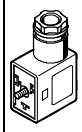
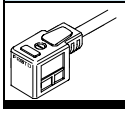
Ordering data			
	Weight [g]	Part No.	Type
Inscription labels for valves (35 in frames included in scope of delivery)	20	**33 362**	**KMC/F/V-BZ-35x**

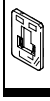
Ordering data			
		Part No.	Type
Push-in fittings QS			
			➔ Volume 3
Silencers			
			➔ Volume 3
Blanking plugs			
			➔ Volume 3
Reducing nipples			
			➔ Volume 3

Ordering data – Solenoid coils				Technical data ➔ 2 / 7.1-0
	Voltage	Cable length [m]	Part No.	Type
F solenoid coils for valves MFH, JMFH				
	12 V DC	–	**34 410**	**MSFG-12DC-OD**
	24 V DC and 42 V AC, 50 … 60 Hz	–	**34 411**	**MSFG-24DC/42AC-OD**
	42 V DC	–	**34 413**	**MSFG-42DC-OD**
	24 V AC	–	**34 415**	**MSFG-24AC-OD**
	48 V AC, 50 … 60 Hz	–	**34 418**	**MSFW-48AC-OD**
	110 V AC, 50 … 60 Hz and 120 V AC, 60 Hz	–	**34 420**	**MSFW-110AC-OD**
	230 V AC, 50 … 60 Hz and 240 V AC, 60 Hz	–	**34 422**	**MSFW-230AC-OD**
	240 V AC, 50 … 60 Hz	–	**34 424**	**MSFW-240AC-OD**
F solenoid coils for valves MFH, JMFH – Explosion-proof to EN 50 028				
	24 V DC	1	**535 619**	**MSFG-24DC-EX**
		5	**535 621**	**MSFG-24DC-EX-K5**
	24 V AC, 50 … 60 Hz	1	**535 623**	**MSFW-24AC-EX**
	110 V AC, 50 … 60 Hz	1	**535 622**	**MSFW-110AC-EX**
	230 V AC, 50 … 60 Hz	1	**535 620**	**MSFW-110AC-EX**
	230 V AC, 50 … 60 Hz	5	**535 625**	**MSFW-110AC-EX-K5**

Core Range

Ordering data – Plug sockets, plug sockets with cable for F solenoid coils					
	Voltage	Cable length [m]	Switching status display with LED	Part No.	Type
Plug socket without cable					Technical data → 2 / 7.2-10
	–	–	–	**34 431**	**MSSD-F**
	–	–	–	**539 710**	**MSSD_F-M16**
Plug socket without cable with insulation displacement technology					Technical data → 2 / 7.2-10
	–	–	–	**192 746**	**MSSD-F-S-M16**
Plug socket with cable					Technical data → 2 / 7.3-21
	24 V DC	2.5	■	**30 935**	**KMF-1-24DC-2,5-LED**
		5	■	**30 937**	**KMF-1-24DC-5-LED**
		10	■	**193 458**	**KMF-1-24DC-10-LED**
	Up to 240 V	2.5	–	**30 936**	**KMF-1-230AC-2,5**
		5	–	**30 938**	**KMF-1-230AC-5**

Ordering data – Plug sockets, plug sockets with cable for V solenoid coils					
	Voltage	Cable length [m]	Switching status display with LED	Part No.	Type
Plug socket without cable					Technical data → 2 / 7.2-10
	–	–	–	**33 295**	**MSSD-V**
	–	–	–	**539 713**	**MSSD-V-M16**
Plug socket with cable					Technical data → 2 / 7.3-21
	24 V DC	2.5	■	**30 939**	**KMV-1-24DC-2,5-LED**
		5	■	**30 941**	**KMV-1-24DC-5-LED**
		10	■	**193 456**	**KMV-1-24-10-LED**

Ordering data – Illuminating seal			
	Voltage	Part No.	Type
			Technical data → 2 / 7.4-1
For F solenoid coils			
	12 ... 24 V DC	**19 143**	**MF-LD-12-24DC**
	230 V DC/V AC	**19 144**	**MF-LD-230AC**
For V solenoid coils			
	12 ... 24 V DC	**35 558**	**MV-LD-12-24DC**

Core Range