

- 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 5599-1

Product range overview

FESTO

| Function | Version | Type | ISO size | Nominal flow rate [l/min] | Pneumatic working port on sub-base | Operating voltage | |
|---|--|--------------|----------|------------------------------|------------------------------------|-------------------|------------------------------|
| | | | | | | [V DC] | [V AC] |
| 5/2-way valves, single solenoid | Solenoid valve | | | | | | |
| |  | MN1H | 1 | 1,200 | G $\frac{1}{4}$ | 24 | 110, 230 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| |  | MFH | 1 | 1,200 | G $\frac{1}{4}$ | 12, 24, 42 | 24, 42, 48, 110, 230, 240 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| |  | MDH | 4 | 6,000 | G $\frac{3}{4}$ | 24 | 42, 110, 230 |
| | Solenoid valve with central plug M12x1 | | | | | | |
| |  | MEBH-...-ZSR | 1 | 1,200 | G $\frac{1}{4}$ | 24 | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | | |
| |  | MDH | 1 | 1,200 | G $\frac{1}{4}$ | 24 | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| 3 | | | 4,500 | G $\frac{1}{2}$ | | | |
| 5/2-way valves, double solenoid | Double solenoid valve | | | | | | |
| |  | JMN1H | 1 | 1,200 | G $\frac{1}{4}$ | 24 | 110, 230 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve with dominant signal at 14 | | | | | | |
| |  | JMN1DH | 1 | 1,200 | G $\frac{1}{4}$ | 24 | 110, 230 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve | | | | | | |
| |  | JMFH | 1 | 1,200 | G $\frac{1}{4}$ | 12, 24, 42 | 24, 42, 48, 110, 230, 240 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve with dominant signal | | | | | | |
| |  | JMFH | 1 | 1,200 | G $\frac{1}{4}$ | 12, 24, 42 | 24, 42, 48, 110, 230, 240 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| 3 | | | 4,500 | G $\frac{1}{2}$ | | | |
| Double solenoid valve | | | | | | | |
|  | JMDH | 4 | 6,000 | G $\frac{3}{4}$ | 24 | 42, 110, 230 | |

Solenoid valves, ISO 5599-1

Product range overview





FESTO






| Type | Pilot air supply | | Type of reset | | → Page/Internet |
|--|------------------|----------|------------------|-------------------|-----------------|
| | internal | external | pneumatic spring | mechanical spring | |
| Solenoid valve | | | | | |
| MN1H | ■ | ■ | ■ | ■ | 18 |
| | ■ | ■ | ■ | ■ | |
| | ■ | ■ | ■ | ■ | |
| MFH | ■ | ■ | ■ | ■ | 30 |
| | ■ | ■ | ■ | ■ | |
| | ■ | ■ | ■ | ■ | |
| MDH | ■ | - | ■ | - | 65 |
| Solenoid valve with central plug M12x1 | | | | | |
| MEBH...-ZSR | ■ | - | ■ | ■ | 41 |
| | ■ | - | ■ | ■ | |
| | ■ | - | ■ | ■ | |
| Solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | |
| MDH | ■ | ■ | ■ | ■ | 30 |
| | ■ | - | ■ | ■ | |
| | ■ | - | ■ | ■ | |
| Double solenoid valve | | | | | |
| JMN1H | ■ | ■ | - | - | 22 |
| | ■ | ■ | - | - | |
| | ■ | ■ | - | - | |
| Double solenoid valve with dominant signal at 14 | | | | | |
| JMN1DH | ■ | ■ | - | - | 22 |
| | ■ | ■ | - | - | |
| | ■ | ■ | - | - | |
| Double solenoid valve | | | | | |
| JMFH | ■ | ■ | - | - | 34 |
| | ■ | ■ | - | - | |
| | ■ | ■ | - | - | |
| Double solenoid valve with dominant signal at 14 | | | | | |
| JMGDH | ■ | - | - | - | 34 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |
| Double solenoid valve | | | | | |
| JMDH | ■ | - | - | - | 68 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |

Solenoid valves, ISO 5599-1

Product range overview

FESTO

| Function | Version | Type | ISO size | Nominal flow rate [l/min] | Pneumatic working port on sub-base | Operating voltage | |
|------------------------------------|--|--------|----------|------------------------------|------------------------------------|-------------------|--------|
| | | | | | | [V DC] | [V AC] |
| 5/2-way valves, double solenoid | Double solenoid valve with central plug M12x1 | | | | | | |
| |  | JMEBH | 1 | 1,200 | G $\frac{1}{4}$ | 24 V DC | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve with central plug M12x1, dominant signal at 14 | | | | | | |
| |  | JMEBDH | 1 | 1,200 | G $\frac{1}{4}$ | 24 V DC | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | | |
| |  | JMDH | 1 | 1,200 | G $\frac{1}{4}$ | 24 V DC | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | | |
| | Double solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina, dominant signal at 14 | | | | | | |
| |  | JMDDH | 1 | 1,200 | G $\frac{1}{4}$ | 24 V DC | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,000 | G $\frac{1}{2}$ | | |

| Function | Version | Type | ISO size | Nominal flow rate [l/min] | Pneumatic working port on sub-base | Operating voltage | |
|----------------|--|------------------|-----------------|------------------------------|------------------------------------|-------------------|------------------------------|
| | | | | | | [V DC] | [V AC] |
| 5/3-way valves | Solenoid valve | | | | | | |
| |  | MN1H-5/3... | 1 | 1,200 | G $\frac{1}{4}$ | 24 | 110, 230 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,100 | G $\frac{1}{2}$ | | |
| |  | MFH-5/3... | 1 | 1,200 | G $\frac{1}{4}$ | 12, 24, 42 | 24, 42, 48, 110, 230, 240 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,100 | G $\frac{1}{2}$ | | |
| |  | MDH-5/3... | 4 | 6,000 | G $\frac{3}{4}$ | 24 | 110, 230 |
| | | | | | | | |
| | Solenoid valve with central plug M12x1 | | | | | | |
| |  | MEBH-5/3-...-ZSR | 1 | 1,200 | G $\frac{1}{4}$ | 24 | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| | | | 3 | 4,100 | G $\frac{1}{2}$ | | |
| | Solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | | |
| |  | MDH-5/3... | 1 | 1,200 | G $\frac{1}{4}$ | 24 | - |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | | |
| 3 | | | 4,000 ... 4,600 | G $\frac{1}{2}$ | | | |

Solenoid valves, ISO 5599-1

Product range overview




FESTO


| Type | Pilot air supply | | Type of reset | | → Page/Internet |
|--|------------------|----------|------------------|-------------------|-----------------|
| | internal | external | pneumatic spring | mechanical spring | |
| Double solenoid valve with central plug M12x1 | | | | | |
| JMEBH | ■ | - | - | - | 45 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |
| Double solenoid valve with central plug M12x1, with dominant signal | | | | | |
| JMEBDH | ■ | - | - | - | 45 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |
| Double solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | |
| JMDH | ■ | - | - | - | 34 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |
| Double solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina, dominant signal at 14 | | | | | |
| JMDDH | ■ | - | - | - | 34 |
| | ■ | - | - | - | |
| | ■ | - | - | - | |

| Type | Pilot air supply | | Mid position | | | → Page/Internet |
|--|------------------|----------|--------------|------------|-------------|-----------------|
| | internal | external | closed | exhausting | pressurised | |
| Solenoid valve | | | | | | |
| MN1H-5/3... | ■ | ■ | ■ | ■ | ■ | 26 |
| | ■ | ■ | ■ | ■ | ■ | |
| | ■ | ■ | ■ | ■ | ■ | |
| MFH-5/3... | ■ | ■ | ■ | ■ | ■ | 37 |
| | ■ | ■ | ■ | ■ | ■ | |
| | ■ | ■ | ■ | ■ | ■ | |
| MDH-5/3... | ■ | - | ■ | ■ | - | 71 |
| Solenoid valve with central plug M12x1 | | | | | | |
| MEBH-5/3-...-ZSR | ■ | - | ■ | ■ | ■ | 49 |
| | ■ | - | ■ | ■ | ■ | |
| | ■ | - | ■ | ■ | ■ | |
| Solenoid valve with single plug M12x1, connector pin allocation to VDMA or Desina | | | | | | |
| MDH-5/3... | ■ | - | ■ | ■ | ■ | 37 |
| | ■ | - | ■ | ■ | ■ | |
| | ■ | - | ■ | ■ | ■ | |

Pneumatic valves, ISO 5599-1

Product range overview

| Function | Version | Type | ISO size | Nominal flow rate [l/min] | Pneumatic working port on sub-base | Type of reset | | → Page/Internet |
|----------------|---|------|----------|---------------------------|------------------------------------|------------------|-------------------|-----------------|
| | | | | | | pneumatic spring | mechanical spring | |
| 5/2-way valves | Pneumatic valve, single pilot | | | | | | | |
| |  | VL | 1 | 1,200 | G $\frac{1}{4}$ | ■ | ■ | 78 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | ■ | ■ | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | ■ | ■ | |
| | | | 4 | 6,000 | G $\frac{3}{4}$ | ■ | ■ | |
| | Pneumatic double pilot valve | | | | | | | |
| |  | J | 1 | 1,200 | G $\frac{1}{4}$ | - | - | 82 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | - | - | |
| | | | 3 | 4,500 | G $\frac{1}{2}$ | - | - | |
| | | | 4 | 6,000 | G $\frac{3}{4}$ | - | - | |
| | Pneumatic double pilot valve with dominant signal at 14 | | | | | | | |
| |  | JD | 1 | 1,200 | G $\frac{1}{4}$ | - | - | 82 |
| 2 | | | 2,300 | G $\frac{3}{8}$ | - | - | | |
| 3 | | | 4,500 | G $\frac{1}{2}$ | - | - | | |

| Function | Version | Type | ISO size | Nominal flow rate [l/min] | Pneumatic working port on sub-base | Mid position | | | → Page/Internet |
|----------------|---|----------|----------|---------------------------|------------------------------------|--------------|-----------|-------------|-----------------|
| | | | | | | closed | exhausted | pressurised | |
| 5/3-way valves | Pneumatic valve | | | | | | | | |
| |  | VL5/3... | 1 | 1,200 | G $\frac{1}{4}$ | ■ | ■ | ■ | 85 |
| | | | 2 | 2,300 | G $\frac{3}{8}$ | ■ | ■ | ■ | |
| | | | 3 | 4,100 | G $\frac{1}{2}$ | ■ | ■ | ■ | |
| | | | 4 | 4,800 | G $\frac{3}{4}$ | ■ | ■ | ■ | |

Solenoid valves, ISO 5599-1

Type codes for valves with square plug

MN1H - 5/3 G - D-1 - - - - C -

| Type | |
|--------|---|
| MN1H | Single pilot, for N1 solenoid coil |
| MFH | Single solenoid, for F solenoid coil |
| MDH | Single solenoid, with D solenoid coil |
| MEBH | Single solenoid, with EB solenoid coil |
| JMN1H | Double solenoid, for N1 solenoid coil |
| JMN1DH | Double solenoid, for N1 solenoid coil, with dominant signal at 14 |
| JMFH | Double solenoid, for F solenoid coil |
| JMFDH | Double solenoid, for F solenoid coil, with dominant signal at 14 |
| JMDH | Double solenoid, with D solenoid coil |

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

| Mid position | |
|--------------|-------------|
| G | closed |
| E | exhausted |
| B | pressurised |

| Size | |
|---------|------------|
| D-1 | ISO size 1 |
| D-2 | ISO size 2 |
| D-3 | ISO size 3 |
| 3/4-D-4 | ISO size 4 |

| Electrical connection, operating voltage | |
|--|---------|
| Plug, square design to DIN EN 175301-803, type A | |
| 24DC | 24 V DC |

| Pilot air supply | |
|------------------|----------|
| | internal |
| S | external |

| Type of reset | |
|---------------|-------------------|
| FR | Mechanical spring |
| | Pneumatic spring |

| Generation | |
|------------|----------|
| C | Series C |

| | |
|----|-------------------------|
| CT | Free of copper and PTFE |
|----|-------------------------|

Solenoid valves, ISO 5599-1

Type codes for valves with round plug

MDH - 5/3 G - D-1 - - - - C -

| Type | |
|--------|--|
| MDH | Single solenoid, with D solenoid coil |
| MEBH | Single solenoid, with EB solenoid coil |
| JMDH | Double solenoid, for D solenoid coil |
| JMDDH | Double solenoid, for D solenoid coil, with dominant signal at 14 |
| JMEBH | Double solenoid, with EB solenoid coil |
| JMEBDH | Double solenoid, with EB solenoid coil, with dominant signal at 14 |

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

| Mid position | |
|--------------|-------------|
| G | closed |
| E | exhausted |
| B | pressurised |

| Size | |
|------|------------|
| D-1 | ISO size 1 |
| D-2 | ISO size 2 |
| D-3 | ISO size 3 |

| Electrical connection, operating voltage | |
|--|---------|
| Central plug, round design, M12x1 | |
| ZSR | 24 V DC |
| Individual plug, round design, M12x1 | |
| M12 | 24 V DC |

| Pin allocation | |
|----------------|-----------------|
| | 2-pin to VDMA |
| D | 4-pin to Desina |

| Pilot air supply | |
|------------------|----------|
| | internal |
| S | external |

| Type of reset | |
|---------------|---------------------------------------|
| FR | Mechanical spring Pneumatic spring |

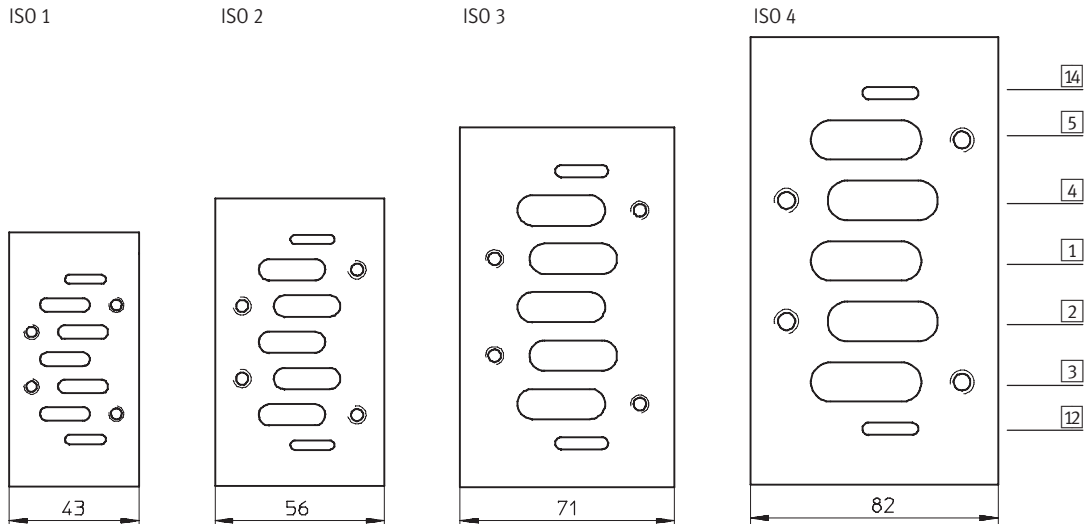
| Generation | |
|------------|----------|
| C | Series C |

Solenoid valves, ISO 5599-1

Peripherals overview

Port pattern on sub-base to ISO 5599-1

Defined interfaces between valve and sub-base



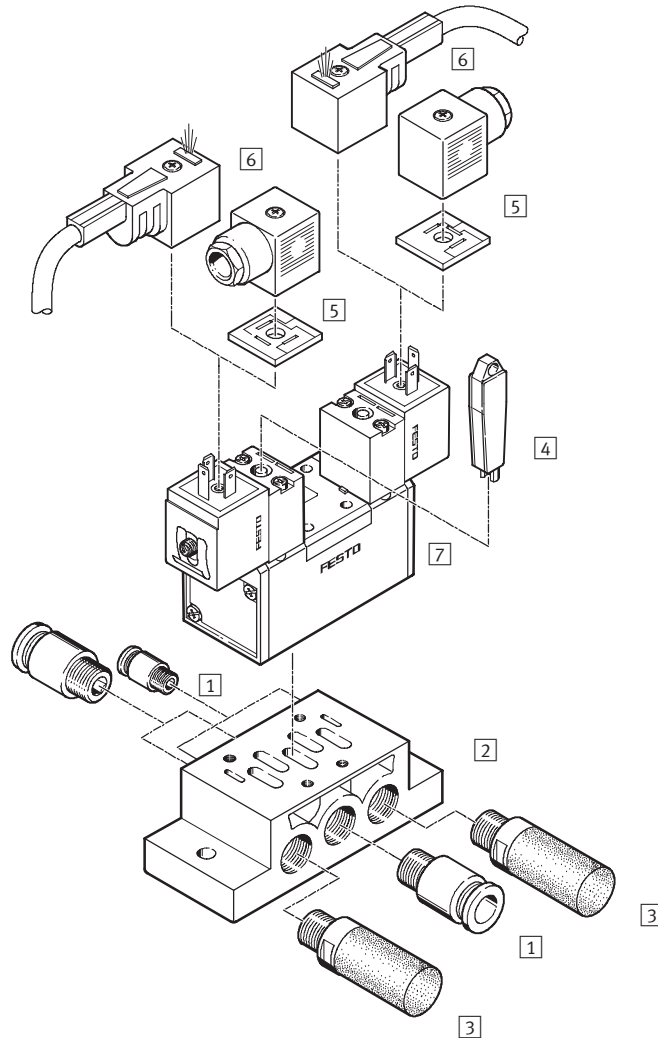
| Sub-base port designations | | |
|----------------------------|-----------------|--|
| | Solenoid valves | Pneumatic valves |
| 14 | Control section | External pilot air supply for pilot valve 14 |
| 5 | Power section | Valve exhaust port 5 |
| 4 | Power section | Working port 4 www.festo.com |
| 1 | Power section | Working air supply port 1 |
| 2 | Power section | Working port 2 |
| 3 | Power section | Valve exhaust port 3 |
| 12 | Control section | External pilot air supply for pilot valve 12 |
| | | Signal input 12 |

Solenoid valves, ISO 5599-1

Peripherals overview

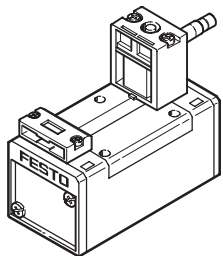
FESTO

Individual mounting with square plug

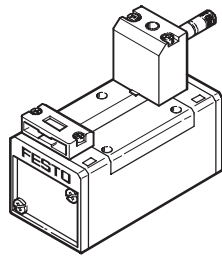


Variants

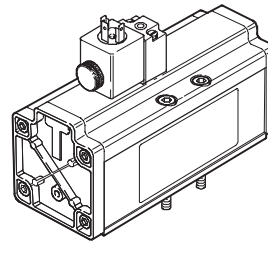
MN1H-5/2



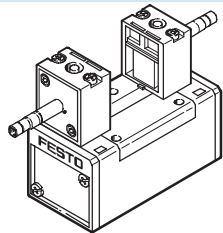
MFH-5/2



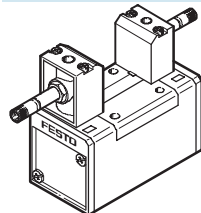
MDH-5/2-D-4



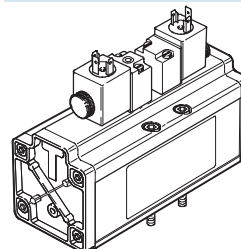
JMN1H-5/2, MN1H-5/3



JMFH-5/2, MFH-5/3



JMDH-5/2-D-4, MDH-5/3-D-4



Solenoid valves, ISO 5599-1

Peripherals overview

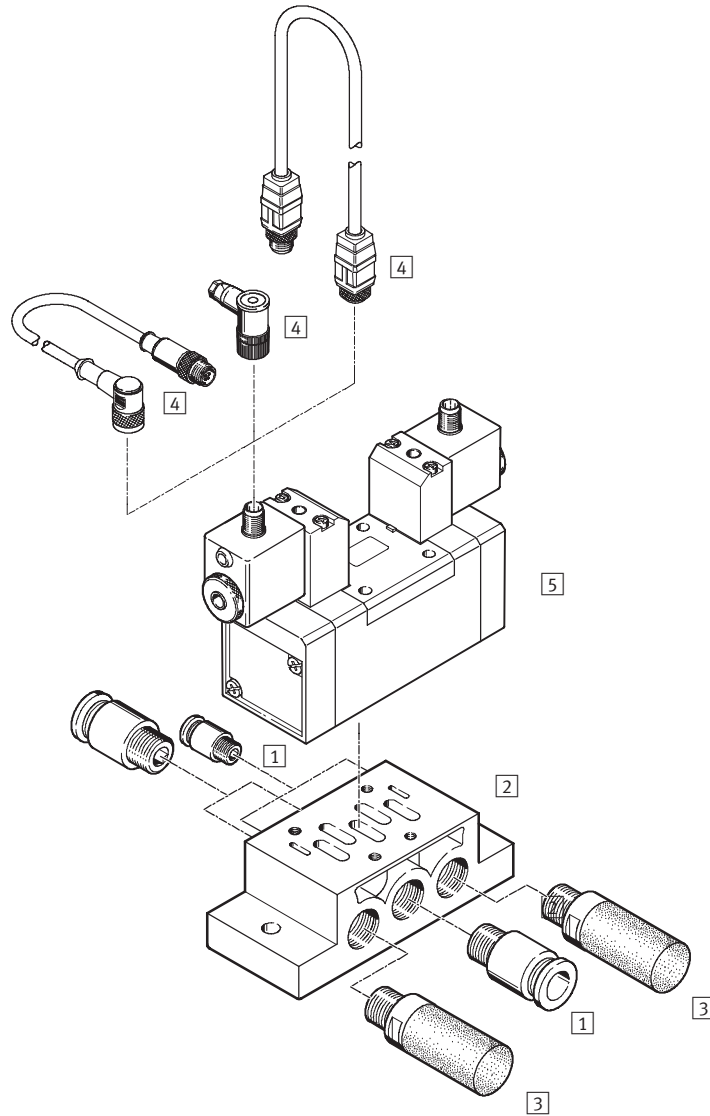
| Accessories | | |
|-------------|--|--|
| | Brief description | → Page/Internet |
| 1 | Push-in fitting QS | quick star |
| 2 | Individual sub-base NAS | 88 |
| 3 | Silencers | u |
| 4 | Manual override tool AHB | 99 |
| 5 | Illuminating seal M...-LD | 102 |
| 6 | Plug sockets with/without cables MSSD, KMF, KMC | 101 |
| 7 | Solenoid valve | Port pattern to ISO 5599-1, corresponding solenoid coils → 100 |

Solenoid valves, ISO 5599-1

Peripherals overview

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Individual mounting with round plug



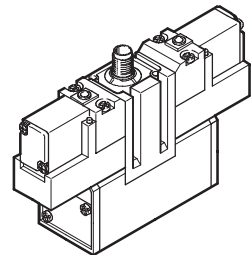
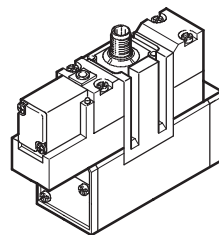
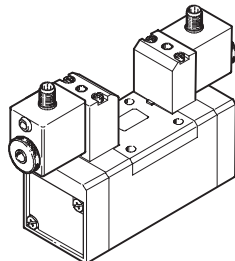
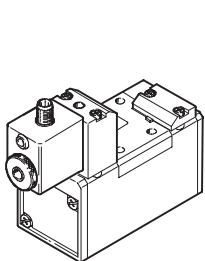
Variants

MDH-5/2

JMDH-5/2, MDH-5/3

MEBH-5/2

JMEBH-5/2, MEBH-5/3



Solenoid valves, ISO 5599-1

Peripherals overview

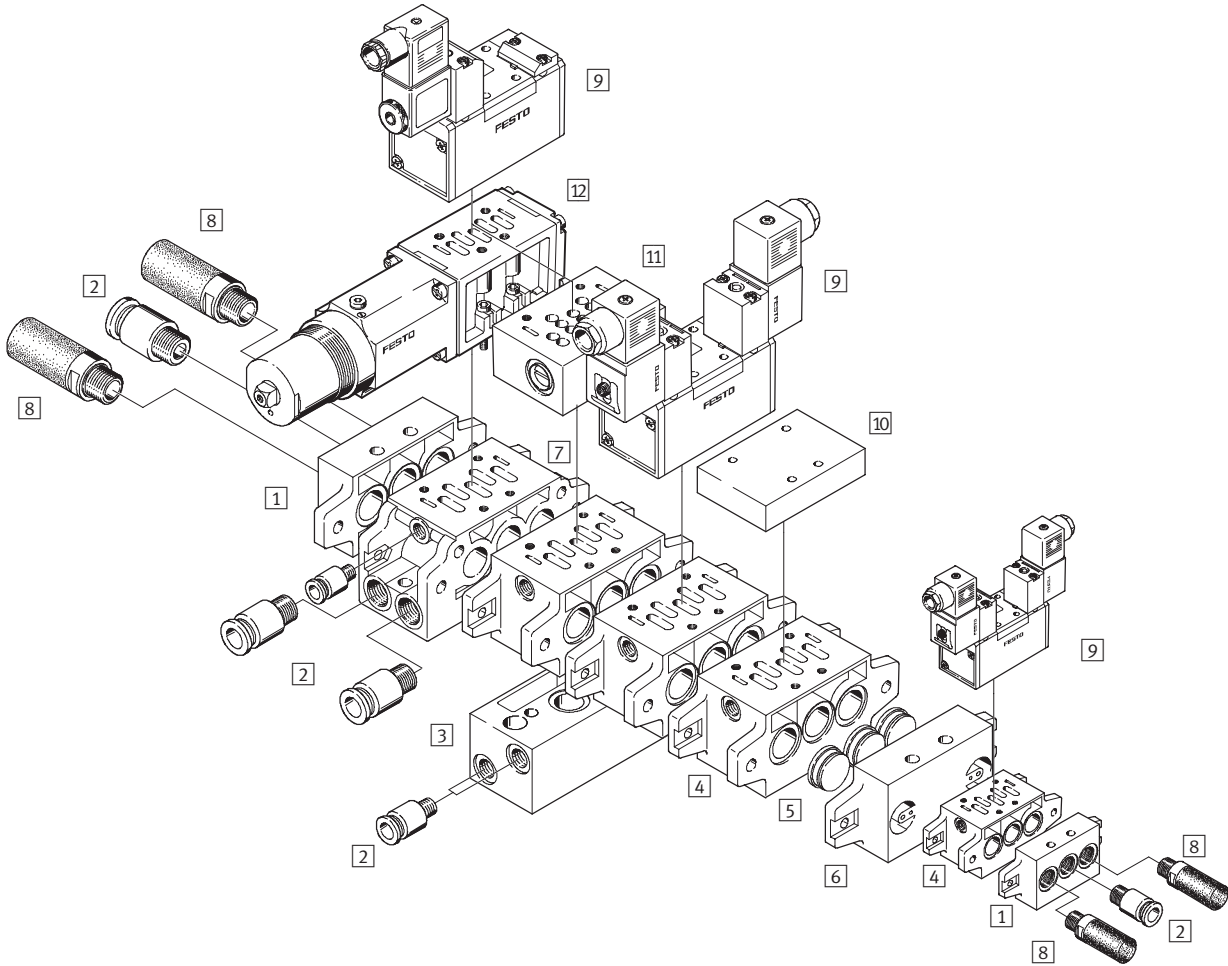
| Accessories | | |
|-------------|---|-----------------|
| | Brief description | → Page/Internet |
| 1 | Push-in fitting QS | quick star |
| 2 | Individual sub-base NAS | 88 |
| 3 | Silencers | u |
| 4 | Plug sockets with/without cables SAE, KM | 102 |
| 5 | Solenoid valve | 41 |

Solenoid valves, ISO 5599-1

Peripherals overview

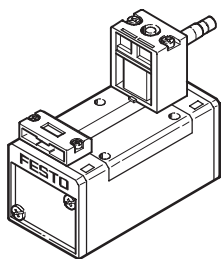
FESTO

Manifold mounting with square plug

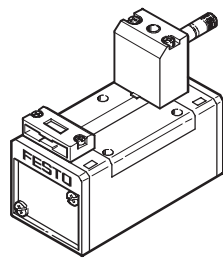


Variants

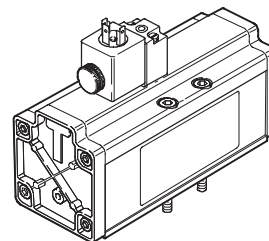
MN1H-5/2



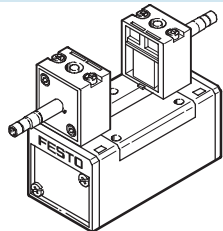
MFH-5/2



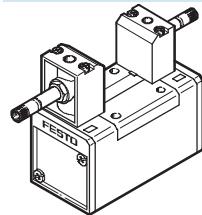
MDH-5/2-D-4



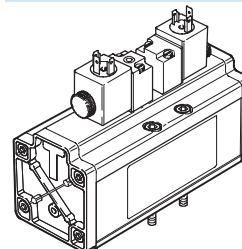
JMN1H-5/2, MN1H-5/3



JMFH-5/2, MFH-5/3



JMDH-5/2-D-4, MDH-5/3-D-4



Solenoid valves, ISO 5599-1

Peripherals overview

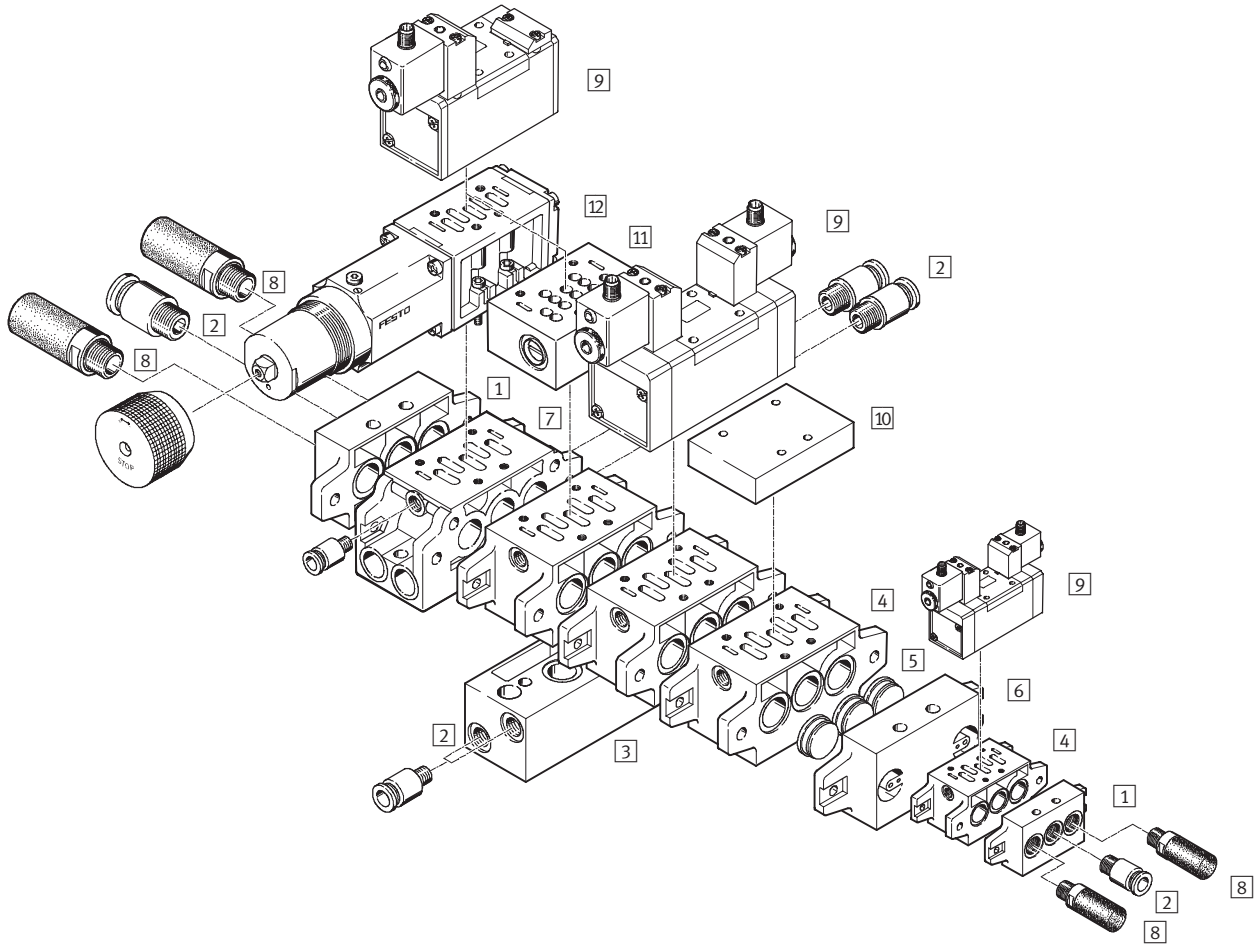
| Accessories | | |
|---|---|-----------------|
| | Remarks | → Page/Internet |
| 1 End plate kit NEV | For sealing the manifold sub-bases | 91 |
| 2 Push-in fitting QS | For connecting compressed air tubing with standard O.D. | quick star |
| 3 Angle connection block NAW | For routing ports 2 and 4 to the front | 90 |
| 4 Manifold sub-base NAV | With ports 2 and 4 underneath | 90 |
| 5 Isolating disc NSC | For sealing the common lines 1, 3, 5 between end plates and manifold sub-bases or between 2 manifold sub-bases, e.g. for different working pressures | 92 |
| 6 Intermediate plate NZV | For connecting manifold sub-bases of different sizes | 94 |
| 7 Manifold sub-base for angle connection NAWV | With ports 2 and 4 either underneath or to the front | 91 |
| 8 Silencers | For fitting in exhaust ports | u |
| 9 Solenoid valve | Port pattern to ISO 5599-1, corresponding solenoid coils → 100 | 2 |
| 10 Blanking plate NDV | For sealing unused manifold sub-bases | 92 |
| 11 Throttle plate GRO | For ISO size 1, 2 and 3 with integrated exhaust air restrictors at ports 3 and 5. The throttle plate is mounted between the valve and the individual sub-base/manifold sub-base | 95 |
| 12 Intermediate pressure regulator plate LR-ZP | For ISO size 1, 2 and 3 for regulating the pressure from 0 to 10 bar according to the supply pressure. The intermediate pressure regulator plate is mounted between the valve and the individual sub-base/manifold sub-base | 96 |

Solenoid valves, ISO 5599-1

Peripherals overview

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Manifold mounting with round plugs



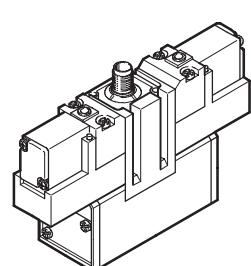
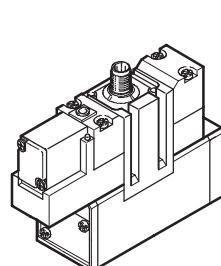
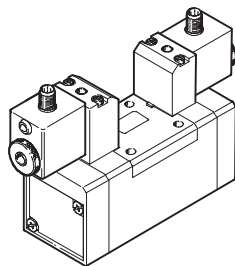
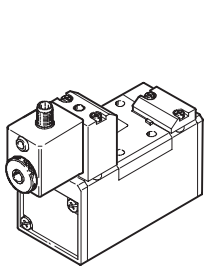
Variants

MDH-5/2

JMDH-5/2, MDH-5/3

MEBH-5/2

JMEBH-5/2, MEBH-5/3



Solenoid valves, ISO 5599-1


Peripherals overview


FESTO

| Accessories | | |
|---|---|-----------------|
| | Remarks | → Page/Internet |
| 1 End plate kit NEV | For sealing the manifold sub-bases | nev |
| 2 Push-in fitting QS | For connecting compressed air tubing with standard O.D. | quick star |
| 3 Angle connection block NAW | For routing ports 2 and 4 to the front | 90 |
| 4 Manifold sub-base NAV | With ports 2 and 4 underneath | 90 |
| 5 Isolating disc NSC | For sealing the common lines 1, 3, 5 between end plates and manifold sub-bases or between 2 manifold sub-bases, e.g. for different working pressures | 92 |
| 6 Intermediate plate NZV | For connecting manifold sub-bases of different sizes | 94 |
| 7 Manifold sub-base for angle connection NAWV | With ports 2 and 4 either underneath or to the front | 91 |
| 8 Silencers | For fitting in exhaust ports | u |
| 9 Solenoid valve | Port pattern to ISO 5599-1 | 2 |
| 10 Blanking plate NDV | For sealing unused manifold sub-bases | 92 |
| 11 Throttle plate GRO | For ISO size 1, 2 and 3 with integrated exhaust air restrictors at ports 3 and 5. The throttle plate is mounted between the valve and the individual sub-base/manifold sub-base | 95 |
| 12 Intermediate pressure regulator plate LR-ZP | For ISO size 1, 2 and 3 for regulating the pressure from 0 to 10 bar according to the supply pressure. The intermediate pressure regulator plate is mounted between the valve and the individual sub-base/manifold sub-base | 96 |

Solenoid valves MN1H, ISO 5599-1

Technical data – 5/2-way valves

-  - Flow rate
1200 ... 4500 l/min

-  - Voltage
24 V DC
110, 230 V AC



| General technical data | | | | |
|----------------------------------|--------------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| 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 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 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 450 | 710 | 1000 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | | |
|--|---------------------------|---|--------------|--------------|
| 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 |
| | External pilot air supply | [bar] | -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | | [°C] | -10 ... +50 | |
| Temperature of medium | | [°C] | -10 ... +50 | |

| Valve response times [ms] | | | | | | |
|---------------------------|-----------|------------|-----------|------------|-----------|------------|
| ISO size | 1 | | 2 | | 3 | |
| | Pneumatic | Mechanical | Pneumatic | Mechanical | Pneumatic | Mechanical |
| On | 23 | 17 | 46 | 24 | 49 | 33 |
| Off | 32 | 39 | 69 | 62 | 71 | 74 |

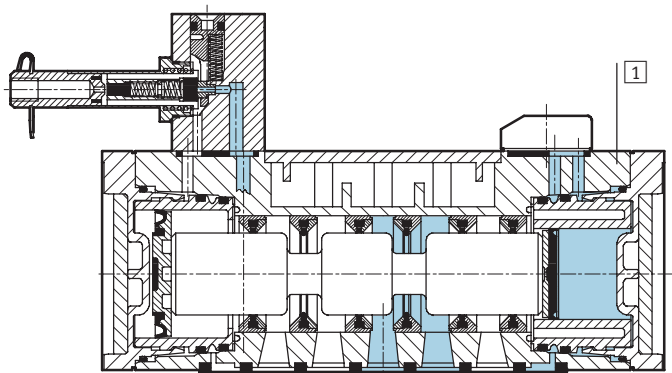
Solenoid valves MN1H, ISO 5599-1

Technical data – 5/2-way valves

| Electrical data | | | |
|-------------------------------|--------------|--|------------------------|
| N1 solenoid coil | | | |
| Electrical connection | | Plug, square design to EN 175301-803, type A | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 110/230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| | A.C. voltage | [VA] | Pull: 7.5 Hold: 5 |
| Protection class to EN 60 529 | | IP65 | |

Materials

Sectional view



| | | |
|------------------|---------|--|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |
| Note on material | | Versions free of copper, PTFE and silicone → Ordering data |

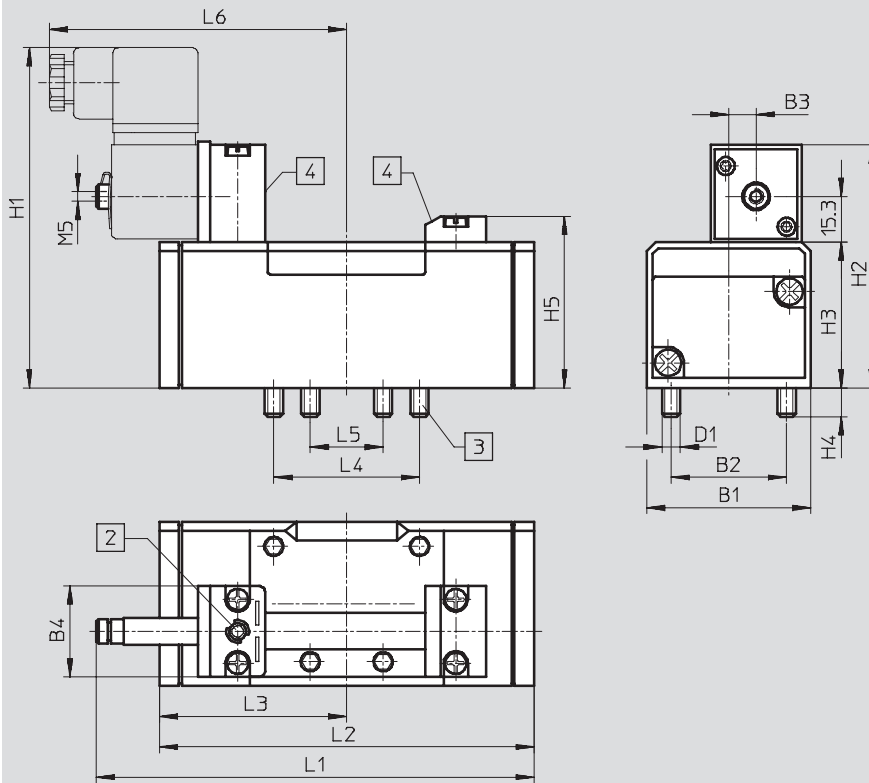
Solenoid valves MN1H, ISO 5599-1

Technical data – 5/2-way valves



Dimensions

Download CAD data → www.festo.com



- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|----|----|----|----|-----|----|----|-----|------|-------|-------|------|----|----|-----|
| ISO size 1 | | | | | | | | | | | | | | | | |
| MN1H-5/2-... | 42 | 28 | 6 | 30 | M5 | 106 | 74 | 38 | 9 | 46.5 | 117.5 | 87.6 | 43.8 | 36 | 18 | 89 |
| MN1H-5/2-...-FR | | | | | | | | | | | 128 | 98 | | | | |
| ISO size 2 | | | | | | | | | | | | | | | | |
| MN1H-5/2-... | 54 | 38 | 9 | 30 | M6 | 116 | 84 | 48 | 9.5 | 56.5 | 147.6 | 123.4 | 61.7 | 48 | 24 | 98 |
| MN1H-5/2-...-FR | | | | | | | | | | | 161.5 | 140.7 | | | | |
| ISO size 3 | | | | | | | | | | | | | | | | |
| MN1H-5/2-... | 65 | 48 | 12 | 30 | M8 | 123 | 91 | 55 | 12 | 63.5 | 169 | 145.4 | 72.7 | 64 | 32 | 109 |
| MN1H-5/2-...-FR | | | | | | | | | | | 184.8 | 164.7 | | | | |

Solenoid valves MN1H, ISO 5599-1

Technical data – 5/2-way valves

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| Ordering data | | | | |
|----------------|--|----------|----------------|--|
| Circuit symbol | Description | ISO size | Part No. | Type |
| | Without N1 solenoid coil ¹⁾ , internal pilot air supply, pneumatic reset | 1 | 159 688 | MN1H-5/2-D-1-C |
| | | | 184 637 | MN1H-5/2-D-1-C-CT²⁾ |
| | | 2 | 159 700 | MN1H-5/2-D-2-C |
| | | | 184 640 | MN1H-5/2-D-2-C-CT²⁾ |
| | | 3 | 159 712 | MN1H-5/2-D-3-C |
| | | | 184 643 | MN1H-5/2-D-3-C-CT²⁾ |
| | Without N1 solenoid coil ¹⁾ , external pilot air supply, pneumatic reset | 1 | 159 686 | MN1H-5/2-D-1-S-C |
| | | 2 | 159 698 | MN1H-5/2-D-2-S-C |
| | | 3 | 159 710 | MN1H-5/2-D-3-S-C |
| | Without N1 solenoid coil ¹⁾ , internal pilot air supply, mechanical reset | 1 | 159 687 | MN1H-5/2-D-1-FR-C |
| | | | 184 638 | MN1H-5/2-D-1-FR-C-CT²⁾ |
| | | 2 | 159 699 | MN1H-5/2-D-2-FR-C |
| | | | 184 641 | MN1H-5/2-D-2-FR-C-CT²⁾ |
| | | 3 | 159 711 | MN1H-5/2-D-3-FR-C |
| | | | 184 644 | MN1H-5/2-D-3-FR-C-CT²⁾ |
| | Without N1 solenoid coil ¹⁾ , external pilot air supply, mechanical reset | 1 | 159 716 | MN1H-5/2-D-1-FR-S-C |
| | | 2 | 159 718 | MN1H-5/2-D-2-FR-S-C |
| | | 3 | 160 896 | MN1H-5/2-D-3-FR-S-C |

1) N1 solenoid coils → 100


2) Free of copper, PTFE and silicone

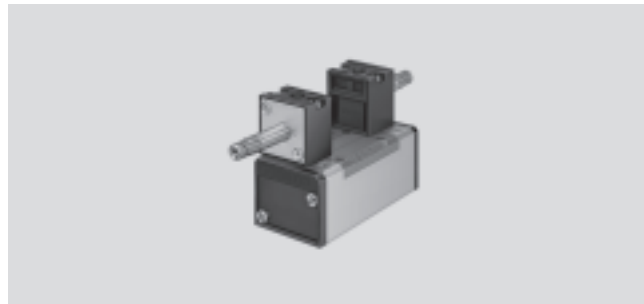
Solenoid valves JMN1H, ISO 5599-1

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

-  - Flow rate
1200 ... 4500 l/min

-  - Voltage
24 V DC
110, 230, 240 V AC



| General technical data | | | | |
|----------------------------------|--------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| Valve function | 5/2-way, double 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] | 8 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 610 | 880 | 1090 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | |
|--|---|-------|--------------|
| 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 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -10 ... +50 |
| Temperature of medium | | [°C] | -10 ... +50 |

| Valve response times | | | | | | |
|----------------------|----|-------------------------|----|-------------------------|----|-------------------------|
| ISO size | 1 | | 2 | | 3 | |
| | | Dominant signal at 14 | | Dominant signal at 14 | | Dominant signal at 14 |
| | 18 | 12: 18 ms; 14: 15 ms | 21 | 12: 24 ms; 14: 21 ms | 21 | 12: 24 ms; 14: 21 ms |

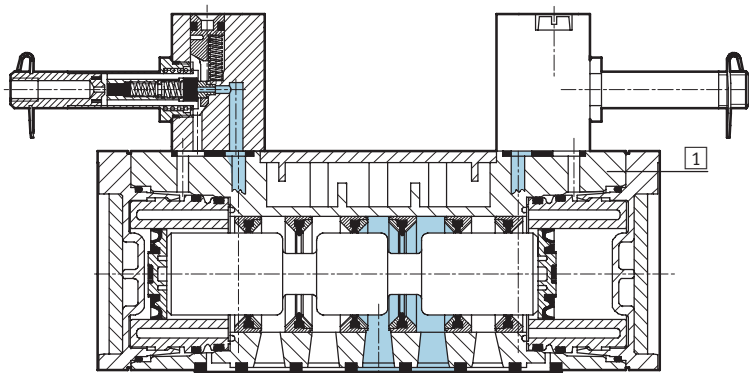
Solenoid valves JMN1H, ISO 5599-1

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

| Electrical data | | | |
|-------------------------------|--------------|--|------------------------|
| N1 solenoid coil | | | |
| Electrical connection | | Plug, square design to EN 175301-803, type A | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 110/230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| | A.C. voltage | [VA] | Pull: 7.5 Hold: 5 |
| Protection class to EN 60 529 | | IP65 | |

Materials

Sectional view



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

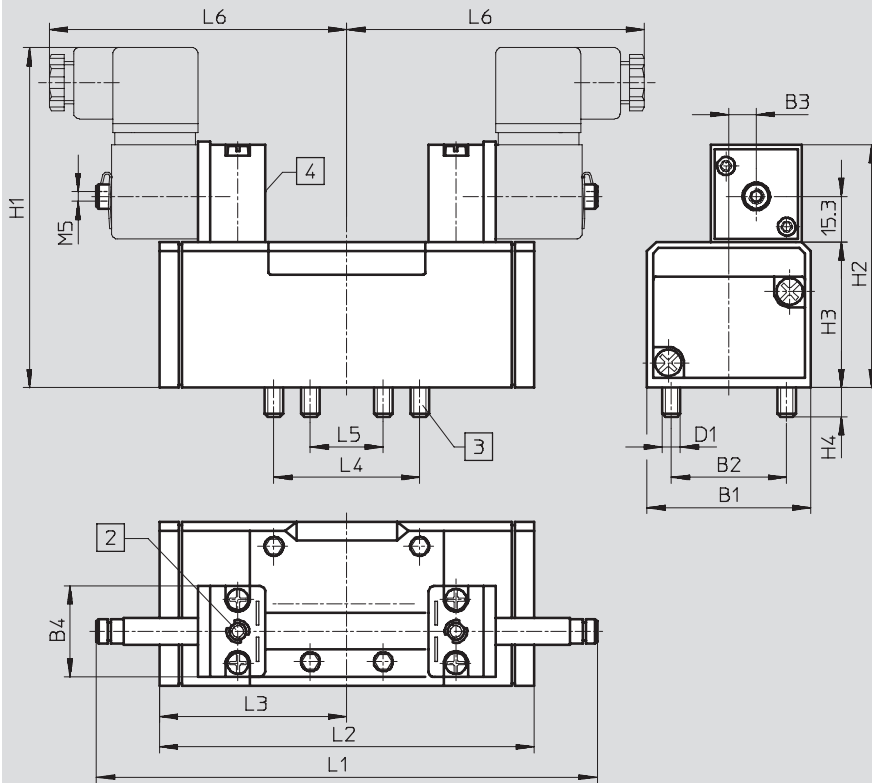
Solenoid valves JMN1H, ISO 5599-1

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



Dimensions

Download CAD data → www.festo.com



- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label

| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-----|----|----|-----|-------|-------|------|----|----|-----|
| 1 | 42 | 28 | 6 | 30 | M5 | 106 | 74 | 38 | 9 | 147.3 | 87.6 | 43.8 | 36 | 18 | 89 |
| 2 | 54 | 38 | 9 | 30 | M6 | 116 | 84 | 48 | 9.5 | 165 | 123.4 | 61.7 | 48 | 24 | 98 |
| 3 | 65 | 48 | 12 | 30 | M8 | 123 | 91 | 55 | 12 | 185.7 | 145.4 | 72.7 | 64 | 32 | 109 |

Solenoid valves JMN1H, ISO 5599-1

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



| Ordering data – Double solenoid valve | | | | |
|---------------------------------------|--|----------|----------|--------------------|
| Circuit symbol | Description | ISO size | Part No. | Type |
| | Without N1 solenoid coil ¹⁾ , internal pilot air supply | 1 | 159 690 | JMN1H-5/2-D-1-C |
| | | 2 | 159 702 | JMN1H-5/2-D-2-C |
| | | 3 | 159 714 | JMN1H-5/2-D-3-C |
| | Without N1 solenoid coil ¹⁾ , external pilot air supply | 1 | 159 689 | JMN1H-5/2-D-1-S-C |
| | | 2 | 159 701 | JMN1H-5/2-D-2-S-C |
| | | 3 | 159 713 | JMN1H-5/2-D-3-S-C |
| | Without N1 solenoid coil ¹⁾ , internal pilot air supply, with dominant signal at 14 | 1 | 159 691 | JMN1DH-5/2-D-1-C |
| | | 2 | 159 703 | JMN1DH-5/2-D-2-C |
| | | 3 | 159 715 | JMN1DH-5/2-D-3-C |
| | Without N1 solenoid coil ¹⁾ , external pilot air supply, with dominant signal at 14 | 1 | 159 717 | JMN1DH-5/2-D-1-S-C |
| | | 2 | 159 719 | JMN1DH-5/2-D-2-S-C |
| | | 3 | 160 897 | JMN1DH-5/2-D-3-S-C |

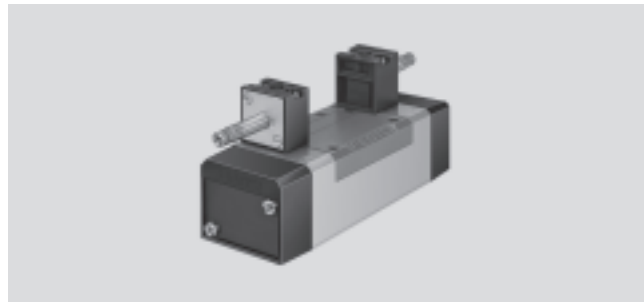
1) N1 solenoid coils → 100

Solenoid valves MN1H, ISO 5599-1

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Technical data – 5/3-way valves

-  Flow rate
1200 ... 4600 l/min
-  Voltage
24 V DC
110, 230 V AC



| General technical data | | | | |
|----------------------------------|---------------------|--------------------------|-----------------|-----------------|
| ISO size | | 1 | 2 | 3 |
| 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 | | |
| 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 | 11 | 14.5 |
| Standard nominal flow rate | Closed [l/min] | 1200 | 2300 | 4100 |
| | Exhausted [l/min] | | | 4600 |
| | Pressurised [l/min] | | | 4000 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 650 | 940 | 1170 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | |
|--|---------------------------------|---|--|
| 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 ... +16 | |
| Pilot pressure | [bar] | 3 ... 10 | |
| Ambient temperature | [°C] | -10 ... +50 | |
| Temperature of medium | [°C] | -10 ... +50 | |

| Valve response times [ms] | | | | | | | |
|---------------------------|----|-----|----|-----|----|-----|--|
| ISO size | 1 | | 2 | | 3 | | |
| | On | Off | On | Off | On | Off | |
| With N1 solenoid coil | | | | | | | |
| Closed | 20 | 44 | 33 | 82 | 33 | 82 | |
| Exhausted | 20 | 46 | 36 | 84 | 36 | 84 | |
| Pressurised | 20 | 46 | 35 | 78 | 35 | 78 | |

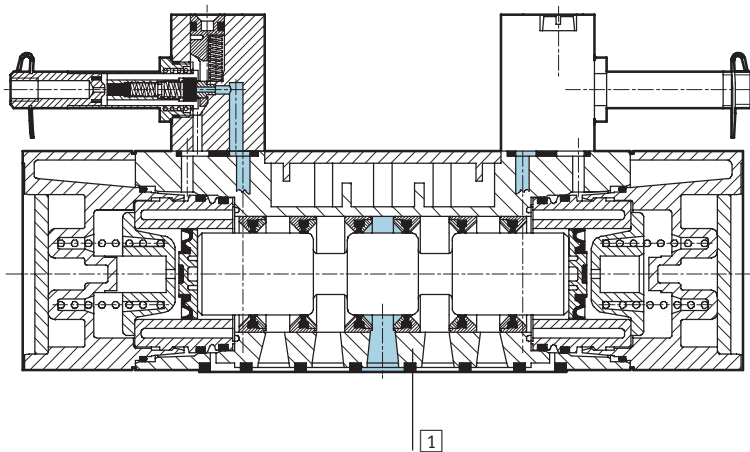
Solenoid valves MN1H, ISO 5599-1

Technical data – 5/3-way valves

| Electrical data | | | |
|-------------------------------|--------------|--|------------------------|
| N1 solenoid coil | | | |
| Electrical connection | | Plug, square design to EN 175301-803, type A | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 110/230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| | A.C. voltage | [VA] | Pull: 7.5 Hold: 5 |
| Protection class to EN 60 529 | | IP65 | |

Materials

Sectional view



| | | |
|---|------------------|--|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |
| | Note on material | Versions free of copper, PTFE and silicone → Ordering data |

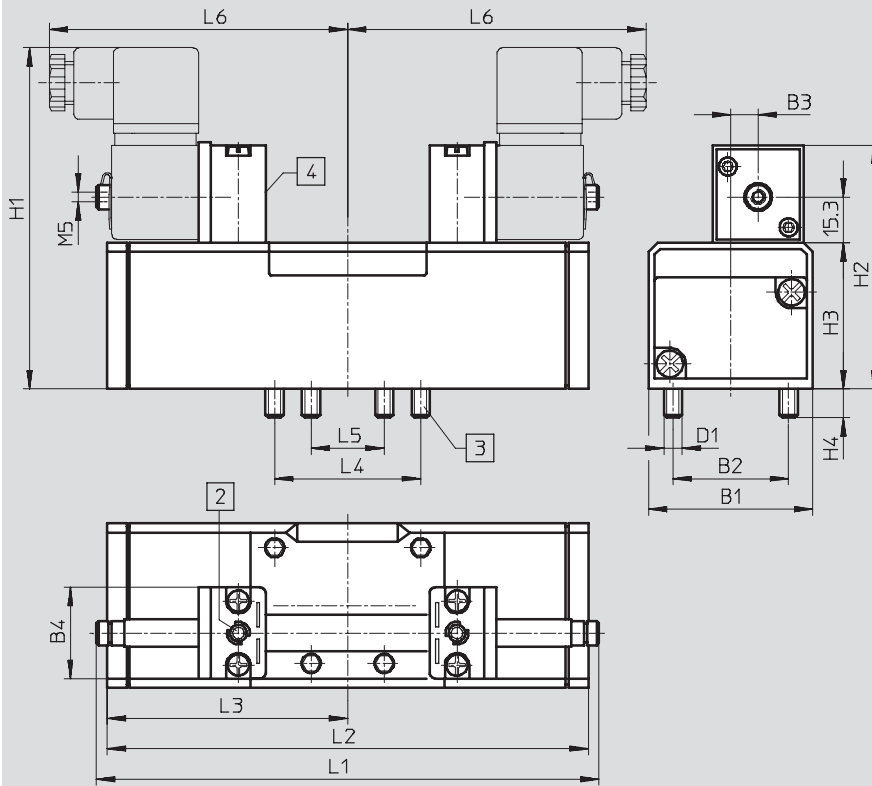
Solenoid valves MN1H, ISO 5599-1

Technical data – 5/3-way valves

FESTO

Dimensions

Download CAD data → www.festo.com

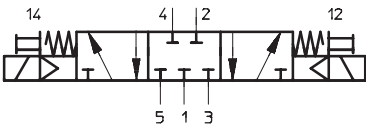
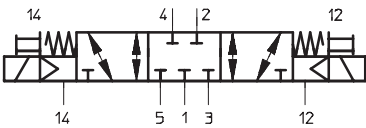
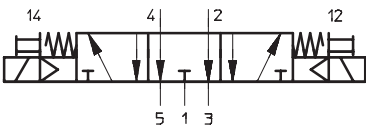
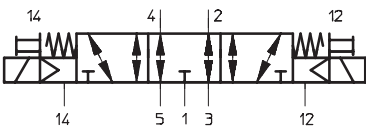
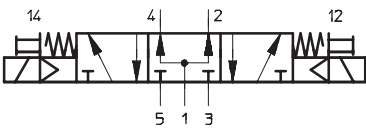
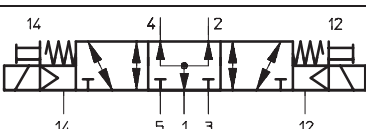


- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label

| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-----|----|----|-----|-------|-------|------|----|----|-----|
| 1 | 42 | 28 | 6 | 30 | M5 | 106 | 74 | 38 | 9 | 147.3 | 108.4 | 54.2 | 36 | 18 | 89 |
| 2 | 54 | 38 | 9 | 30 | M6 | 116 | 84 | 48 | 9.5 | 165 | 158 | 79 | 48 | 24 | 98 |
| 3 | 65 | 48 | 12 | 30 | M8 | 123 | 91 | 55 | 12 | 185.7 | 184 | 92 | 64 | 32 | 109 |

Solenoid valves MN1H, ISO 5599-1

Technical data – 5/3-way valves

| Ordering data | | | | |
|---|--|----------|----------|----------------------------------|
| Circuit symbol | Description | ISO size | Part No. | Type |
|  | Without N1 solenoid coil ¹⁾ , normally closed, internal pilot air supply | 1 | 159 681 | MN1H-5/3G-D-1-C |
| | | | 184 658 | MN1H-5/3G-D-1-C-CT ²⁾ |
| | | 2 | 159 693 | MN1H-5/3G-D-2-C |
| | | | 184 660 | MN1H-5/3G-D-2-C-CT ²⁾ |
| | | 3 | 159 705 | MN1H-5/3G-D-3-C |
| | | | 184 662 | MN1H-5/3G-D-3-C-CT ²⁾ |
|  | Without N1 solenoid coil ¹⁾ , normally closed, external pilot air supply | 1 | 159 680 | MN1H-5/3G-D-1-S-C |
| | | 2 | 159 692 | MN1H-5/3G-D-2-S-C |
| | | 3 | 159 704 | MN1H-5/3G-D-3-S-C |
|  | Without N1 solenoid coil ¹⁾ , normally exhausted, internal pilot air supply | 1 | 159 683 | MN1H-5/3E-D-1-C |
| | | | 184 652 | MN1H-5/3E-D-1-C-CT ²⁾ |
| | | 2 | 159 695 | MN1H-5/3E-D-2-C |
| | | | 184 654 | MN1H-5/3E-D-2-C-CT ²⁾ |
| | | 3 | 159 707 | MN1H-5/3E-D-3-C |
| | | | 184 656 | MN1H-5/3E-D-3-C-CT ²⁾ |
|  | Without N1 solenoid coil ¹⁾ , normally exhausted, external pilot air supply | 1 | 159 682 | MN1H-5/3E-D-1-S-C |
| | | 2 | 159 694 | MN1H-5/3E-D-2-S-C |
| | | 3 | 159 706 | MN1H-5/3E-D-3-S-C |
|  | Without N1 solenoid coil ¹⁾ , normally pressurised, internal pilot air supply | 1 | 159 685 | MN1H-5/3B-D-1-C |
| | | | 184 646 | MN1H-5/3B-D-1-C-CT ²⁾ |
| | | 2 | 159 697 | MN1H-5/3B-D-2-C |
| | | | 184 648 | MN1H-5/3B-D-2-C-CT ²⁾ |
| | | 3 | 159 709 | MN1H-5/3B-D-3-C |
| | | | 184 650 | MN1H-5/3B-D-3-C-CT ²⁾ |
|  | Without N1 solenoid coil ¹⁾ , normally pressurised, external pilot air supply | 1 | 159 684 | MN1H-5/3B-D-1-S-C |
| | | 2 | 159 696 | MN1H-5/3B-D-2-S-C |
| | | 3 | 159 708 | MN1H-5/3B-D-3-S-C |


1) N1 solenoid coils → 100
 2) Free of copper, PTFE and silicone

Solenoid valves MFH, ISO 5599-1

FESTO

Technical data – 5/2-way valves

-  - Flow rate
1200 ... 4500 l/min

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



| General technical data | | | | |
|----------------------------------|--------------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| 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 pilot control | Piloted | | | |
| Pilot air supply | Internal | | | |
| 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 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 390 | 650 | 960 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | | |
|--|---------------------------|---|--------------|--------------|
| 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 |
| | External pilot air supply | [bar] | -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | | [°C] | -5 ... +40 | |
| Temperature of medium | | [°C] | -10 ... +60 | |

| Valve response times [ms] | | | | | | |
|---------------------------|-----------|------------|-----------|------------|-----------|------------|
| ISO size | 1 | | 2 | | 3 | |
| | Pneumatic | Mechanical | Pneumatic | Mechanical | Pneumatic | Mechanical |
| With F solenoid coil | | | | | | |
| On | 23 | 16 | 48 | 27 | 60 | 30 |
| Off | 35 | 45 | 71 | 73 | 66 | 82 |

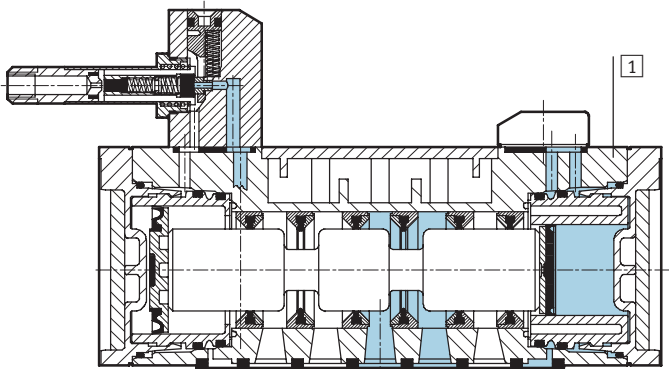
Solenoid valves MFH, ISO 5599-1

Technical data – 5/2-way valves

| Electrical data | | | |
|-------------------------------|--------------|--------|--|
| F solenoid coil | | | |
| Electrical connection | Design | | 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 |

Materials

Sectional view



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

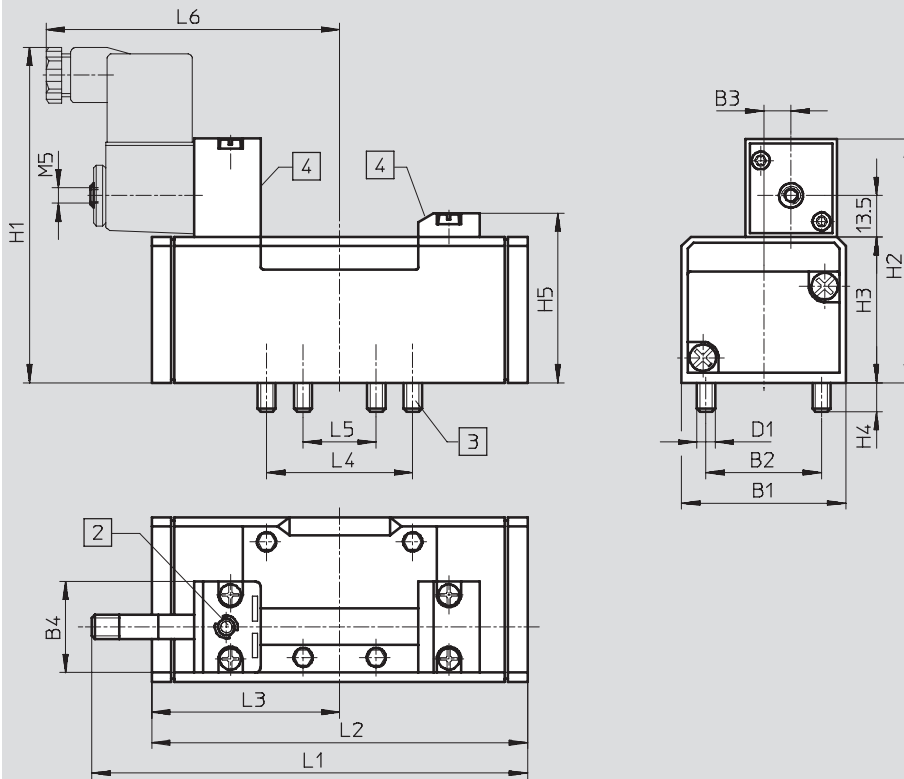
Solenoid valves MFH, ISO 5599-1

Technical data – 5/2-way valves

FESTO

Dimensions

Download CAD data → www.festo.com



- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label

| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------------|----|----|----|----|----|-----|------|----|-----|------|-------|-------|------|----|----|-----|
| ISO size 1 | | | | | | | | | | | | | | | | |
| MFH-5/2-... | 42 | 28 | 6 | 30 | M5 | 100 | 70.3 | 38 | 9 | 46.5 | 115 | 87.6 | 43.8 | 36 | 18 | 89 |
| MFH-5/2-...-FR | | | | | | | | | | | 125.6 | 98 | | | | |
| ISO size 2 | | | | | | | | | | | | | | | | |
| MFH-5/2-... | 54 | 38 | 9 | 30 | M6 | 110 | 80.3 | 48 | 9.5 | 56.5 | 142 | 123.4 | 61.7 | 48 | 24 | 98 |
| MFH-5/2-...-FR | | | | | | | | | | | 159.4 | 140.7 | | | | |
| ISO size 3 | | | | | | | | | | | | | | | | |
| MFH-5/2-... | 65 | 48 | 12 | 30 | M8 | 117 | 87.3 | 55 | 12 | 63.5 | 163 | 145.4 | 72.7 | 64 | 32 | 109 |
| MFH-5/2-...-FR | | | | | | | | | | | 182 | 164.7 | | | | |

Solenoid valves MFH, ISO 5599-1

Technical data – 5/2-way valves

| Ordering data | | | | |
|----------------|---|----------|----------------|-------------------------|
| Circuit symbol | Description | ISO size | Part No. | Type |
| | Without F solenoid coil ¹⁾ , pneumatic reset, internal pilot air supply | 1 | 150 981 | MFH-5/2-D-1-C |
| | | 2 | 151 851 | MFH-5/2-D-2-C |
| | | 3 | 151 870 | MFH-5/2-D-3-C |
| | Without F solenoid coil ¹⁾ , pneumatic reset, external pilot air supply | 1 | 152 562 | MFH-5/2-D-1-S-C |
| | | 2 | 151 022 | MFH-5/2-D-2-S-C |
| | | 3 | 151 032 | MFH-5/2-D-3-S-C |
| | Without F solenoid coil ¹⁾ , mechanical reset, internal pilot air supply | 1 | 151 016 | MFH-5/2-D-1-FR-C |
| | | 2 | 151 709 | MFH-5/2-D-2-FR-C |
| | | 3 | 151 711 | MFH-5/2-D-3-FR-C |


1) F solenoid coils → 100

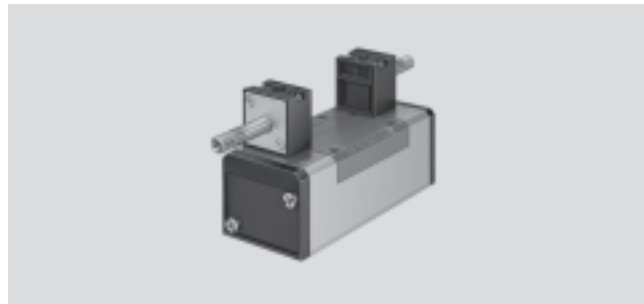
Solenoid valves JMFH, ISO 5599-1

FESTO

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

-  - Flow rate
1200 ... 4500 l/min

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



| General technical data | | | | |
|----------------------------------|--------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| 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 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 490 | 750 | 1060 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | |
|--|---|-------|--------------|
| 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 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -5 ... +40 |
| Temperature of medium | | [°C] | -10 ... +60 |

| Valve response times [ms] | | | | | | |
|---------------------------|----|-----------------------|----|-----------------------|----|-----------------------|
| ISO size | 1 | | 2 | | 3 | |
| | | Dominant signal at 14 | | Dominant signal at 14 | | Dominant signal at 14 |
| With F solenoid coil | | | | | | |
| | 16 | 16 | 18 | 18 | 18 | 18 |

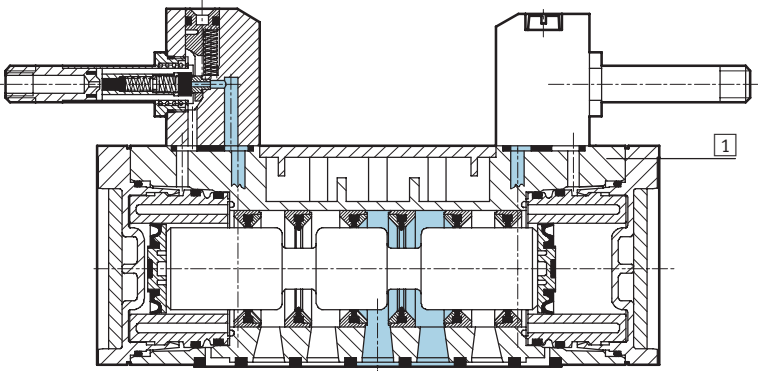
Solenoid valves JMFH, ISO 5599-1

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

| Electrical data | | | |
|-------------------------------|--------------|---|--|
| ISO size | 1, 2, 3 | | |
| F solenoid coil | | | |
| Electrical connection | Design | 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 |

Materials

Sectional view



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

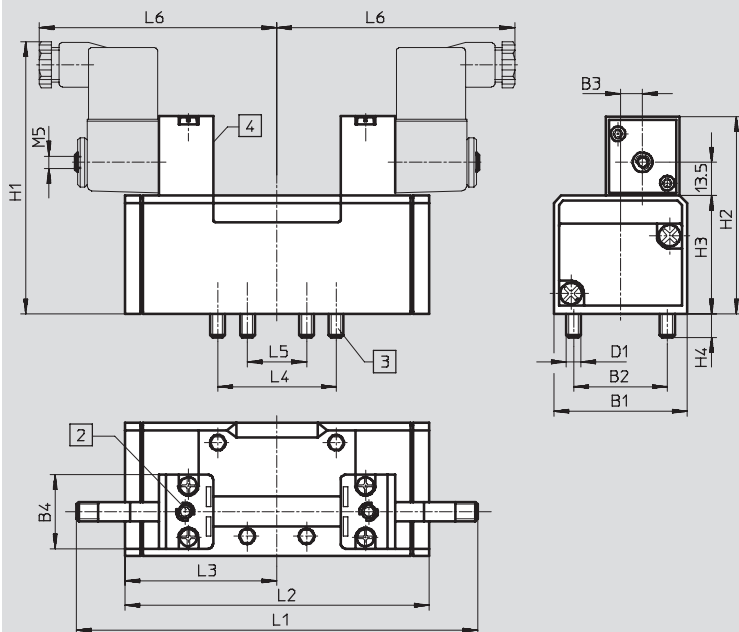
Solenoid valves JMFH, ISO 5599-1

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



Dimensions

Download CAD data → www.festo.com



- 2 Manual override
- 3 Captive mounting screws
- 4 Slot for inscription label

| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-----|------|----|-----|-------|-------|------|----|----|-----|
| 1 | 42 | 28 | 6 | 30 | M5 | 100 | 70.3 | 38 | 9 | 142.6 | 87.6 | 43.8 | 36 | 18 | 88 |
| 2 | 54 | 38 | 9 | 30 | M6 | 110 | 80.3 | 48 | 9.5 | 160.4 | 123.4 | 61.7 | 48 | 24 | 97 |
| 3 | 65 | 48 | 12 | 30 | M8 | 117 | 87.3 | 55 | 12 | 181 | 145.4 | 72.7 | 64 | 32 | 109 |

Ordering data



| Circuit symbol | Description | ISO size | Part No. | Type |
|----------------|---|----------|----------|------------------|
| | Without F solenoid coil ¹⁾ , internal pilot air supply | 1 | 150 980 | JMFH-5/2-D-1-C |
| | | 2 | 151 852 | JMFH-5/2-D-2-C |
| | | 3 | 151 871 | JMFH-5/2-D-3-C |
| | Without F solenoid coil ¹⁾ , external pilot air supply | 1 | 152 563 | JMFH-5/2-D-1-S-C |
| | | 2 | 151 023 | JMFH-5/2-D-2-S-C |
| | | 3 | 151 033 | JMFH-5/2-D-3-S-C |
| | Without F solenoid coil ¹⁾ , internal pilot air supply, with dominant signal at 14 | 1 | 151 019 | JMFDH-5/2-D-1-C |
| | | 2 | 151 853 | JMFDH-5/2-D-2-C |
| | | 3 | 151 872 | JMFDH-5/2-D-3-C |

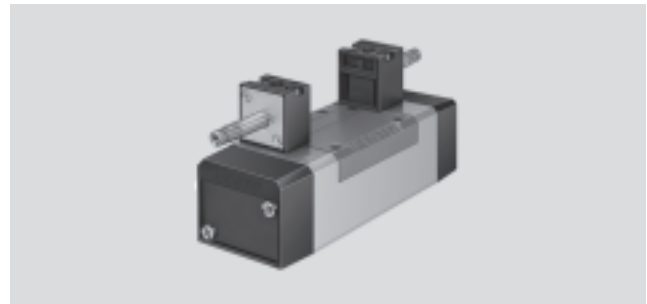
1) F solenoid coils → 100

Solenoid valves MFH, ISO 5599-1

Technical data – 5/3-way valves

FESTO

-  - Flow rate
1200 ... 4600 l/min
-  - Voltage
12, 24, 42, 48 V DC
24, 42, 48, 110, 230,
240 V AC



| General technical data | | | | | |
|----------------------------------|-------------|--------------------------|-----------------|-----------------|-----------------|
| ISO size | | 1 | 2 | 3 | |
| 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] | 8 | 11 | 14.5 |
| Standard nominal flow rate | Closed | [l/min] | 1200 | 2300 | 4100 |
| | Exhausted | [l/min] | | | 4600 |
| | Pressurised | [l/min] | | | 4000 |
| Grid dimension | | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | | [g] | 520 | 820 | 1040 |
| Noise level | | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | |
|--|---------------------------|---|--------------|
| 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 ... +16 |
| Pilot pressure | | [bar] | 3 ... 10 |
| Ambient temperature | | [°C] | -5 ... +40 |
| Temperature of medium | | [°C] | -10 ... +60 |

| Valve response times [ms] | | | | | | |
|---------------------------|----|-----|----|-----|----|-----|
| ISO size | 1 | | 2 | | 3 | |
| | On | Off | On | Off | On | Off |
| With F solenoid coil | | | | | | |
| Closed | 18 | 36 | 33 | 63 | 36 | 77 |
| Exhausted | 18 | 36 | 35 | 67 | 37 | 78 |
| Pressurised | 18 | 36 | 35 | 69 | 36 | 75 |

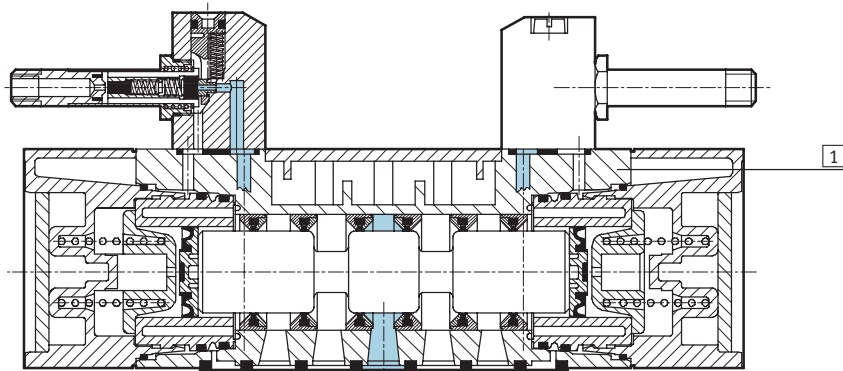
Solenoid valves MFH, ISO 5599-1

Technical data – 5/3-way valves

| Electrical data | | | |
|-------------------------------|--------------|--------|--|
| F solenoid coil | | | |
| Electrical connection | Design | | 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 |

Materials

Sectional view



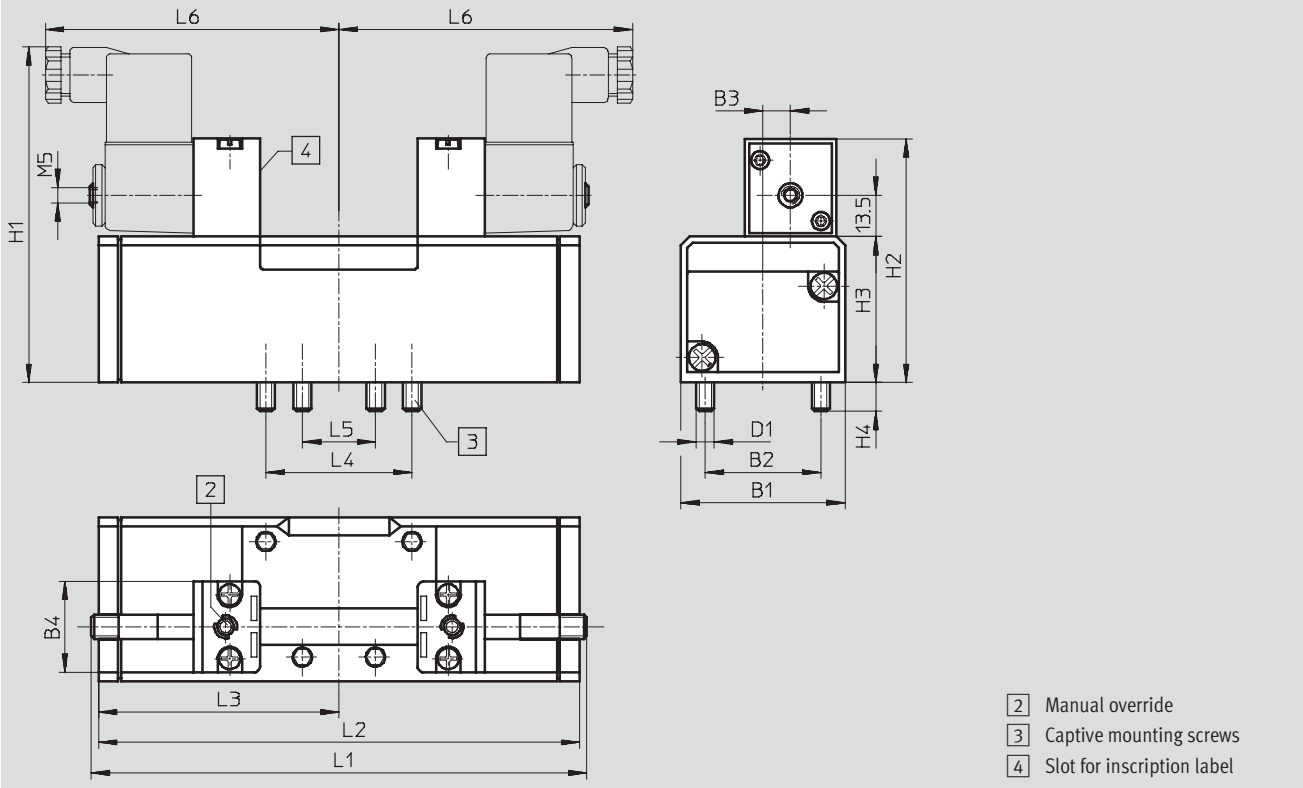
| | | |
|---|---------|---------------------------------|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves MFH, ISO 5599-1

Technical data – 5/3-way valves

Dimensions

Download CAD data → www.festo.com



| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-----|------|----|-----|-------|-------|------|----|----|-----|
| 1 | 42 | 28 | 6 | 30 | M5 | 100 | 70.3 | 38 | 9 | 142.6 | 108.4 | 54.2 | 36 | 18 | 89 |
| 2 | 54 | 38 | 9 | 30 | M6 | 110 | 80.3 | 48 | 9.5 | 160 | 158 | 79 | 48 | 24 | 98 |
| 3 | 65 | 48 | 12 | 30 | M8 | 117 | 87.3 | 55 | 12 | 181 | 184 | 92 | 64 | 32 | 109 |

Solenoid valves MFH, ISO 5599-1

Technical data – 5/3-way valves

| Ordering data | | | | |
|----------------|---|----------|----------|------------------|
| Circuit symbol | Description | ISO size | Part No. | Type |
| | Without F solenoid coil ¹⁾ , normally closed, internal pilot air supply | 1 | 150 982 | MFH-5/3G-D-1-C |
| | | 2 | 151 854 | MFH-5/3G-D-2-C |
| | | 3 | 151 873 | MFH-5/3G-D-3-C |
| | Without F solenoid coil ¹⁾ , normally closed, external pilot air supply | 1 | 152 564 | MFH-5/3G-D-1-S-C |
| | | 2 | 151 024 | MFH-5/3G-D-2-S-C |
| | | 3 | 151 034 | MFH-5/3G-D-3-S-C |
| | Without F solenoid coil ¹⁾ , normally exhausted, internal pilot air supply | 1 | 150 983 | MFH-5/3E-D-1-C |
| | | 2 | 151 855 | MFH-5/3E-D-2-C |
| | | 3 | 151 874 | MFH-5/3E-D-3-C |
| | Without F solenoid coil ¹⁾ , normally exhausted, external pilot air supply | 1 | 152 565 | MFH-5/3E-D-1-S-C |
| | | 2 | 151 025 | MFH-5/3E-D-2-S-C |
| | | 3 | 151 035 | MFH-5/3E-D-3-S-C |
| | Without F solenoid coil ¹⁾ , normally pressurised, internal pilot air supply | 1 | 150 984 | MFH-5/3B-D-1-C |
| | | 2 | 151 856 | MFH-5/3B-D-2-C |
| | | 3 | 151 875 | MFH-5/3B-D-3-C |
| | Without F solenoid coil ¹⁾ , normally pressurised, external pilot air supply | 1 | 152 566 | MFH-5/3B-D-1-S-C |
| | | 2 | 151 026 | MFH-5/3B-D-2-S-C |
| | | 3 | 151 036 | MFH-5/3B-D-3-S-C |

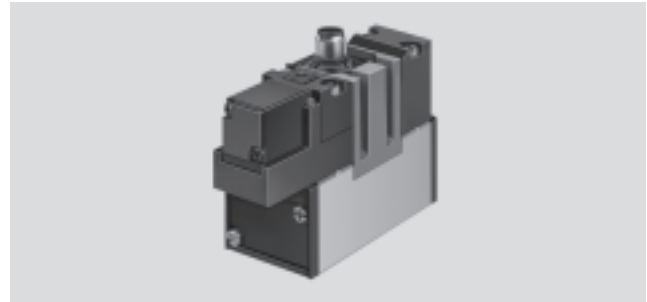
1) F solenoid coils → 100

Solenoid valves MEBH, ISO 5599-1

Technical data – 5/2-way valves

-  - Flow rate
1200 ... 4500 l/min

-  - Voltage
24 V DC



| General technical data | | | |
|----------------------------------|--------------------------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 |
| 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 pilot control | Piloted | | |
| Pilot air supply | Internal | | |
| 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 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] 1200 | 2300 | 4500 |
| Grid dimension | [mm] 43 | 56 | 71 |
| Pneumatic connection on sub-base | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] 550 | 700 | 1000 |
| Noise level | [dB (A)] 85 | | |

| Operating and environmental conditions | | | |
|--|---------------------------|---|--------------|
| 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 |
| | External pilot air supply | [bar] -0.9 ... +16 | -0.9 ... +16 |
| Pilot pressure | [bar] | 2 ... 10 | 3 ... 10 |
| Ambient temperature | [°C] | -5 ... +50 | |
| Temperature of medium | [°C] | -5 ... +50 | |

| Valve response times [ms] | | | | | | |
|---------------------------|-----------|------------|-----------|------------|-----------|------------|
| ISO size | 1 | | 2 | | 3 | |
| Type of reset | Pneumatic | Mechanical | Pneumatic | Mechanical | Pneumatic | Mechanical |
| With EB solenoid coil | | | | | | |
| On | 20 | 15 | 50 | 33 | 59 | 28 |
| Off | 33 | 50 | 85 | 103 | 87 | 109 |

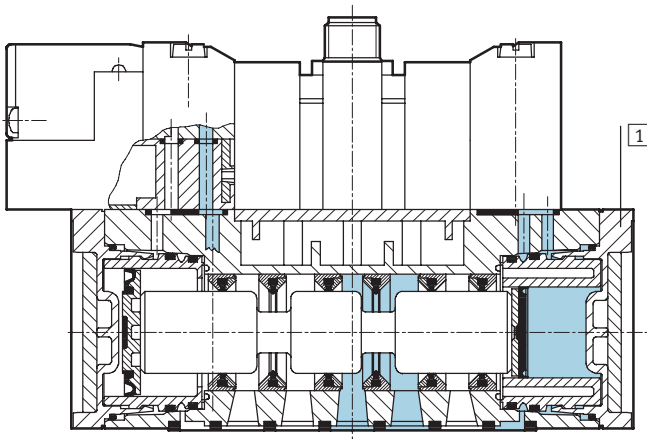
Solenoid valves MEBH, ISO 5599-1

Technical data – 5/2-way valves

| Electrical data | | | |
|-------------------------------|--------------|--------|------------------------------------|
| EB solenoid coil | | | |
| Electrical connection | | | Central plug, round design, M1 2x1 |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



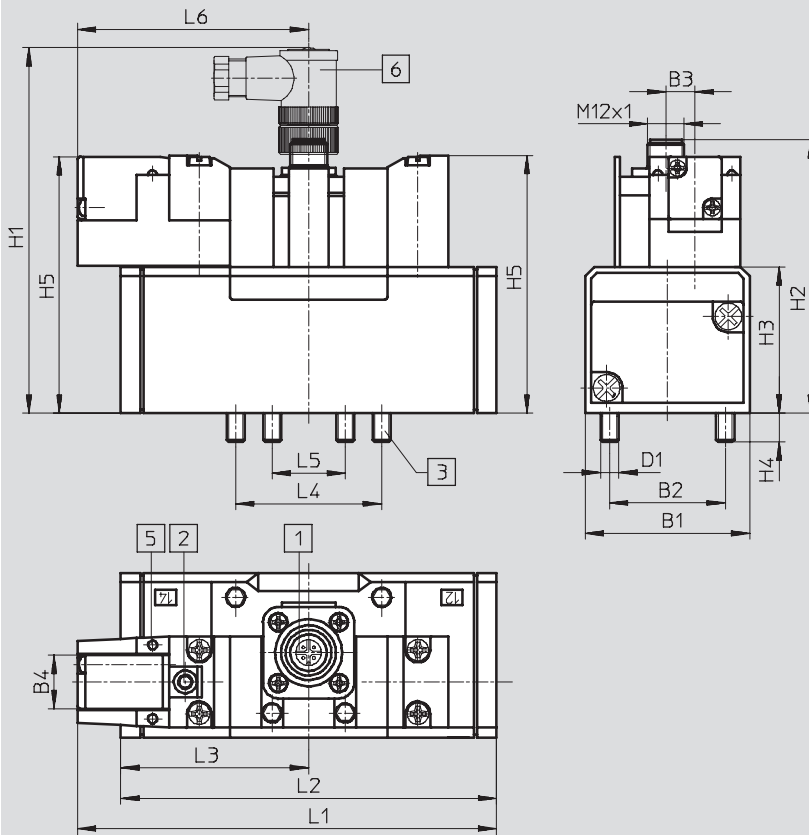
| | | |
|---|---------|---------------------------------|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves MEBH, ISO 5599-1

Technical data – 5/2-way valves

Dimensions

Download CAD data → www.festo.com

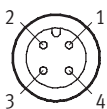


- 1 Attachment of plug socket adjustable by 3x 30°
- 2 Manual override
- 3 Captive mounting screws
- 5 LED display
- 6 Angled socket SEA-M12-4WD-PG7 → 102

| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|-------------------|----|----|----|------|----|-----|------|----|-----|------|-------|-------|------|----|----|------|
| ISO size 1 | | | | | | | | | | | | | | | | |
| MEBH-5/2-... | 42 | 28 | 6 | 17.5 | M5 | 110 | 80.3 | 38 | 9 | 74.7 | 110.8 | 87.6 | 43.8 | 36 | 18 | 67 |
| MEBH-5/2-...-FR | | | | | | | | | | | 121.3 | 98 | | | | |
| ISO size 2 | | | | | | | | | | | | | | | | |
| MEBH-5/2-... | 54 | 38 | 9 | 17.5 | M6 | 120 | 90.1 | 48 | 9.5 | 84.2 | 137.6 | 123.4 | 61.7 | 48 | 24 | 75.9 |
| MEBH-5/2-...-FR | | | | | | | | | | | 154.9 | 140.7 | | | | |
| ISO size 3 | | | | | | | | | | | | | | | | |
| MEBH-5/2-... | 65 | 48 | 12 | 17.5 | M8 | 130 | 97.8 | 55 | 12 | 93.1 | 158.7 | 145.4 | 72.7 | 64 | 32 | 86 |
| MEBH-5/2-...-FR | | | | | | | | | | | 178 | 164.7 | | | | |

M12 central plug – Terminal allocation

Mono connection



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

Solenoid valves MEBH, ISO 5599-1

Technical data – 5/2-way valves

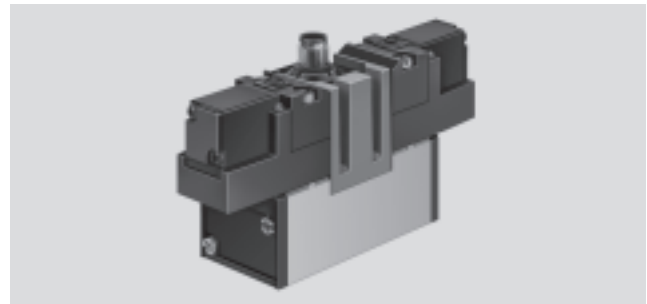
| Ordering data | | | | | |
|----------------|--|---------|----------|----------------|------------------------------|
| Circuit symbol | Description | Voltage | ISO size | Part No. | Type |
| | With EB solenoid coil, with central plug, pneumatic reset, internal pilot air supply | 24 V DC | 1 | 184 493 | MEBH-5/2-D-1-ZSR-C |
| | | | 2 | 184 500 | MEBH-5/2-D-2-ZSR-C |
| | | | 3 | 184 507 | MEBH-5/2-D-3-ZSR-C |
| | With EB solenoid coil, with central plug, mechanical reset, internal pilot air supply | 24 V DC | 1 | 184 494 | MEBH-5/2-D-1-ZSR-FR-C |
| | | | 2 | 184 501 | MEBH-5/2-D-2-ZSR-FR-C |
| | | | 3 | 184 508 | MEBH-5/2-D-3-ZSR-FR-C |

Solenoid valves JMEBH, ISO 5599-1

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

-  - Flow rate
1200 ... 4500 l/min

-  - Voltage
24 V DC



| General technical data | | | | |
|----------------------------------|--------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| 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 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{3}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 600 | 770 | 1080 |
| Noise level | [dB (A)] | 85 | | |

| Operating and environmental conditions | | | |
|--|---|-------|--------------|
| 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 ... +16 |
| Pilot pressure | | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -5 ... +50 |
| Temperature of medium | | [°C] | -5 ... +50 |

| Valve response times [ms] | | | | | | |
|---------------------------|----|-----------------------|----|-----------------------|----|-----------------------|
| ISO size | 1 | | 2 | | 3 | |
| | | Dominant signal at 14 | | Dominant signal at 14 | | Dominant signal at 14 |
| With EB solenoid coil | | | | | | |
| Changeover | 12 | 13 | 15 | 23 | 16 | 20 |

Solenoid valves JMEBH, ISO 5599-1

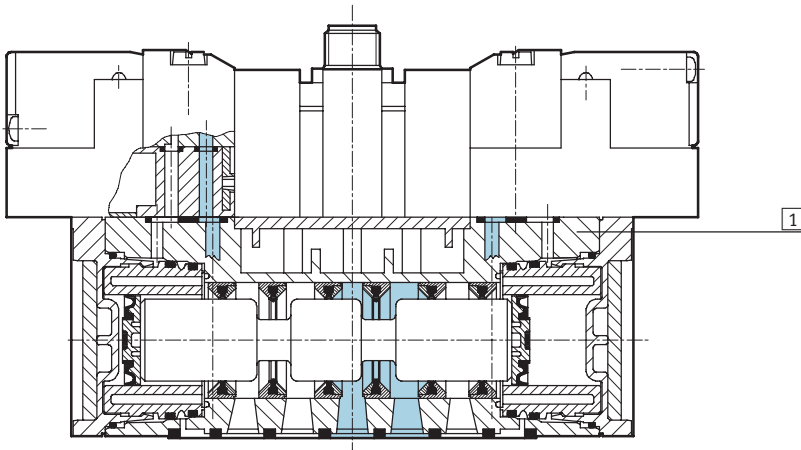
FESTO

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

| Electrical data | | | |
|-------------------------------|--------------|------------------------------------|------|
| EB solenoid coil | | | |
| Electrical connection | Design | Central plug, round design, M1 2x1 | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



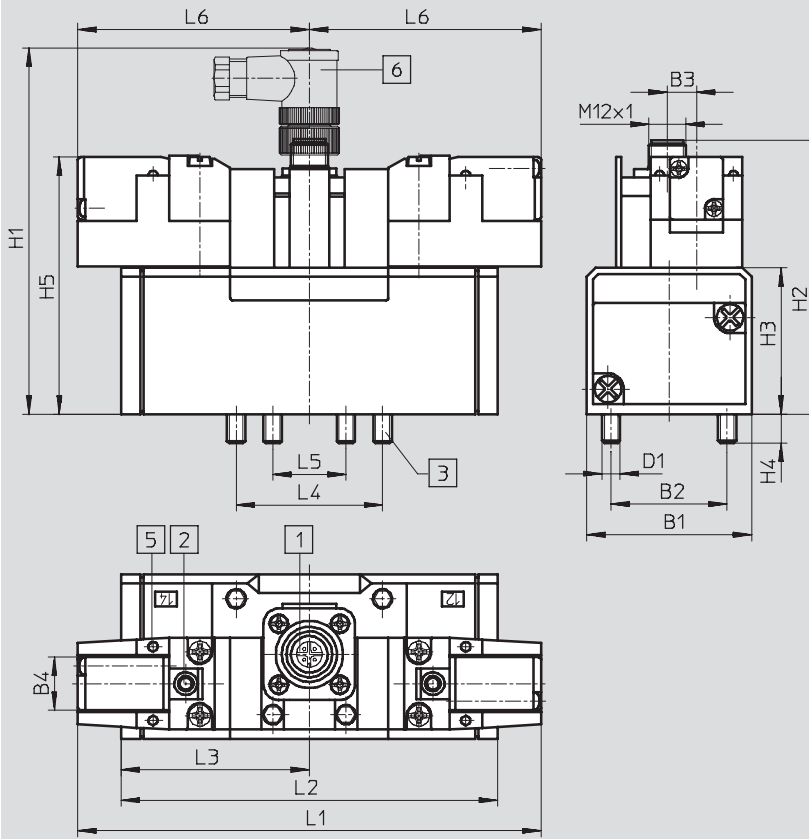
| | | |
|---|---------|---------------------------------|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves JMEBH, ISO 5599-1

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

Dimensions

Download CAD data → www.festo.com

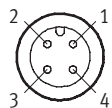


- 1 Attachment of plug socket adjustable by 3x 30°
- 2 Manual override
- 3 Captive mounting screws
- 5 LED display
- 6 Angled socket SEA-M12-4WD-PG7 → 102

| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|------|----|-----|------|----|-----|------|-------|-------|------|----|----|------|
| 1 | 42 | 28 | 6 | 17.5 | M5 | 110 | 80.3 | 38 | 9 | 74.7 | 134 | 87.6 | 43.8 | 36 | 18 | 67 |
| 2 | 54 | 38 | 9 | 17.5 | M6 | 120 | 90.1 | 48 | 9.5 | 84.2 | 151.8 | 123.4 | 61.7 | 48 | 24 | 75.9 |
| 3 | 65 | 48 | 12 | 17.5 | M8 | 130 | 97.8 | 55 | 12 | 93.1 | 171.9 | 145.4 | 72.7 | 64 | 32 | 86 |

M12 central plug – Terminal allocation

Duo connection



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

Solenoid valves JMEBH, ISO 5599-1



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

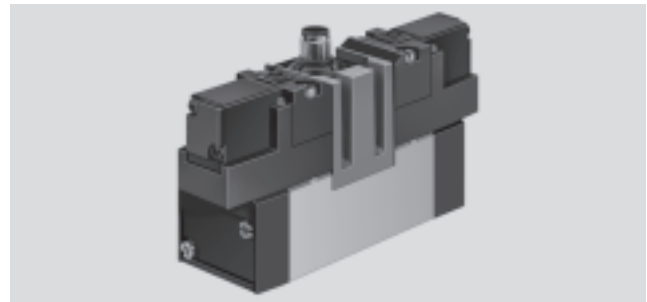
| Ordering data | | | | | |
|----------------|--|---------|----------|----------------|-----------------------------|
| Circuit symbol | Solenoid coil | Voltage | ISO size | Part No. | Type |
| | With EB solenoid coil, with central plug, internal pilot air supply | 24 V DC | 1 | 184 495 | JMEBH-5/2-D-1-ZSR-C |
| | | | 2 | 184 502 | JMEBH-5/2-D-2-ZSR-C |
| | | | 3 | 184 509 | JMEBH-5/2-D-3-ZSR-C |
| | With EB solenoid coil, with central plug, internal pilot air supply, with dominant signal at 14 | 24 V DC | 1 | 184 496 | JMEBDH-5/2-D-1-ZSR-C |
| | | | 2 | 184 503 | JMEBDH-5/2-D-2-ZSR-C |
| | | | 3 | 184 510 | JMEBDH-5/2-D-3-ZSR-C |

Solenoid valves MEBH, ISO 5599-1

Technical data – 5/3-way valves

FESTO

-  - Flow rate
1200 ... 4600 l/min
-  - Voltage
24 V DC



| General technical data | | | | | |
|----------------------------------|-------------|--------------------------|-----------------|-----------------|------|
| ISO size | | 1 | 2 | 3 | |
| 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 | | | |
| 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 | 11 | 14.5 | |
| Standard nominal flow rate | Closed | [l/min] | 1200 | 2300 | 4100 |
| | Exhausted | [l/min] | | | 4600 |
| | Pressurised | [l/min] | | | 4000 |
| Grid dimension | [mm] | 43 | 56 | 71 | |
| Pneumatic connection on sub-base | | G $\frac{3}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | |
| Product weight | [g] | 630 | 800 | 1120 | |
| Noise level | [dB (A)] | 85 | | | |

| Operating and environmental conditions | | | |
|--|---------------------------|---|--------------|
| 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 ... +16 |
| Pilot pressure | | [bar] | 3 ... 10 |
| Ambient temperature | | [°C] | -5 ... +50 |
| Temperature of medium | | [°C] | -5 ... +50 |

| Valve response times [ms] | | | | | | |
|---------------------------|----|-----|----|-----|----|-----|
| ISO size | 1 | | 2 | | 3 | |
| | On | Off | On | Off | On | Off |
| With EB solenoid coil | | | | | | |
| | 19 | 68 | 30 | 106 | 38 | 130 |

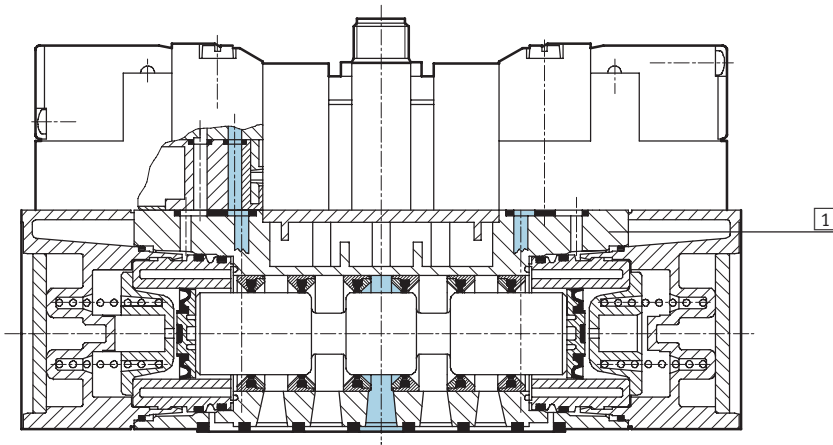
Solenoid valves MEBH, ISO 5599-1

Technical data – 5/3-way valves

| Electrical data | | | |
|-------------------------------|--------------|------------------------------------|------|
| EB solenoid coil | | | |
| Electrical connection | | Central plug, round design, M1 2x1 | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| Coil characteristics | D.C. voltage | [W] | 2.5 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



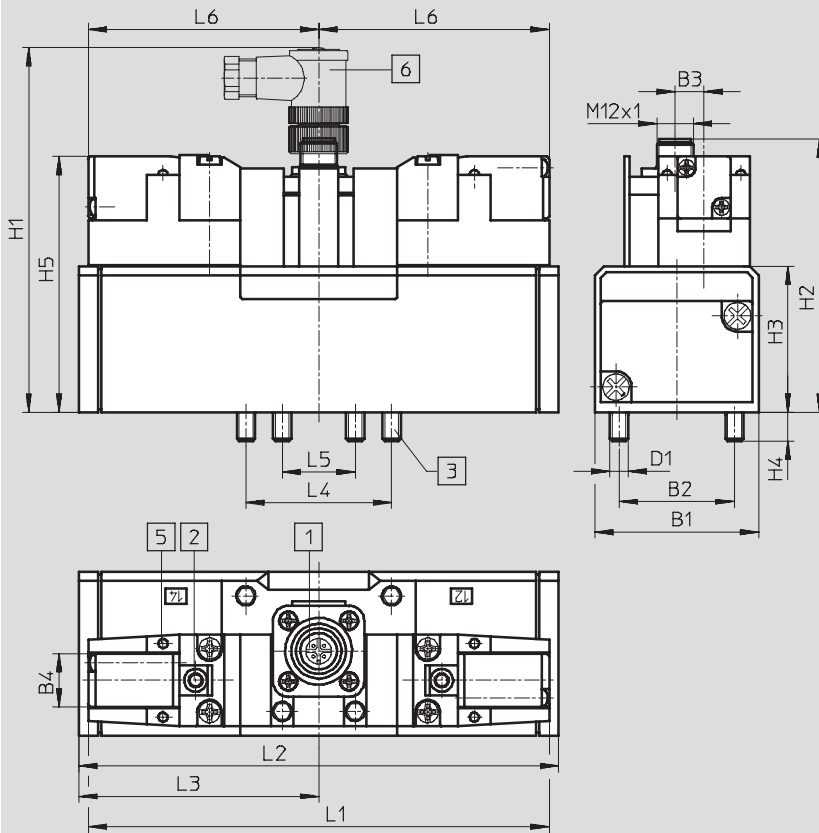
| | | |
|---|---------|---------------------------------|
| 1 | Housing | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves MEBH, ISO 5599-1

Technical data – 5/3-way valves

Dimensions

Download CAD data → www.festo.com

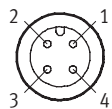


- 1 Attachment of plug socket adjustable by 3x 30°
- 2 Manual override
- 3 Captive mounting screws
- 5 LED display
- 6 Angled socket SEA-M12-4WD-PG7 → 102

| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|------|----|-----|------|----|-----|------|-------|-------|------|----|----|------|
| 1 | 42 | 28 | 6 | 17.5 | M5 | 110 | 80.3 | 38 | 9 | 74.7 | 134 | 108.4 | 54.2 | 36 | 18 | 67 |
| 2 | 54 | 38 | 9 | 17.5 | M6 | 120 | 90.1 | 48 | 9.5 | 84.2 | 151.8 | 158 | 79 | 48 | 24 | 75.9 |
| 3 | 65 | 48 | 12 | 17.5 | M8 | 130 | 97.8 | 55 | 12 | 93.1 | 171.9 | 184 | 92 | 64 | 32 | 86 |

M12 central plug – Terminal allocation

Duo connection



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


Solenoid valves MEBH, ISO 5599-1

Technical data – 5/3-way valves

| Ordering data | | | | | |
|----------------|--|---------|----------|----------------|----------------------------|
| Circuit symbol | Description | Voltage | ISO size | Part No. | Type |
| | With EB solenoid coil, with central plug, normally closed, internal pilot air supply | 24 V DC | 1 | 184 498 | MEBH-5/3G-D-1-ZSR-C |
| | | | 2 | 184 505 | MEBH-5/3G-D-2-ZSR-C |
| | | | 3 | 184 512 | MEBH-5/3G-D-3-ZSR-C |
| | With EB solenoid coil, with central plug, normally exhausted, internal pilot air supply | 24 V DC | 1 | 184 497 | MEBH-5/3E-D-1-ZSR-C |
| | | | 2 | 184 504 | MEBH-5/3E-D-2-ZSR-C |
| | | | 3 | 184 511 | MEBH-5/3E-D-3-ZSR-C |
| | With EB solenoid coil, with central plug, normally pressurised, internal pilot air supply | 24 V DC | 1 | 184 499 | MEBH-5/3B-D-1-ZSR-C |
| | | | 2 | 184 506 | MEBH-5/3B-D-2-ZSR-C |
| | | | 3 | 184 513 | MEBH-5/3B-D-3-ZSR-C |

Solenoid valves MDH-M12, ISO 5599-1

Technical data – 5/2-way valves

-  - Flow rate
1,200 ... 4,500 l/min

-  - Voltage
24 V DC



| General technical data | | | | |
|----------------------------------|--|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| Valve function | 5/2-way, monostable | | | |
| Design | Piston slide | | | |
| Sealing principle | Soft | | | |
| Actuation type | Electrical | | | |
| Type of reset | Mechanical or pneumatic spring | | | |
| Type of actuation | Piloted | | | |
| Pilot air supply | Internal or external | | | |
| Direction of flow | Reversible for external pilot air supply | | | |
| Exhaust function | Restrictable | | | |
| Manual override | Via tool accessory, detenting | | | |
| Type of mounting | Via through-holes | | | |
| Mounting position | Any | | | |
| Nominal size | [mm] | 8 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1,200 | 2,300 | 4,500 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 420 | 810 | 1,000 |

| Operating and environmental conditions | | | pneumatic spring | | mechanical spring | |
|--|---------------------------|-------|--|--|-------------------|--|
| Type of reset | | | pneumatic spring | | mechanical spring | |
| Operating medium | | | Dried compressed air, lubricated or unlubricated, grade of filtration 40µm Vacuum | | | |
| Operating pressure | internal pilot air supply | [bar] | 2 ... 10 | | 3 ... 10 | |
| | external pilot air supply | [bar] | -0.9 ... +16 | | | |
| Pilot pressure | | [bar] | 2 ... 10 | | 3 ... 10 | |
| Ambient temperature | | [°C] | -10 ... +50 | | | |
| Temperature of medium | | [°C] | -10 ... +50 | | | |

| Valve response times | | | | | | | | |
|---------------------------------|---------------|-----------|------------|-----------|------------|-----------|------------|----|
| ISO size | Type of reset | 1 | | 2 | | 3 | | |
| | | pneumatic | mechanical | pneumatic | mechanical | pneumatic | mechanical | |
| D solenoid coil with M12x1 plug | | | | | | | | |
| On | | [ms] | 25 | 20 | 45 | 25 | 55 | 30 |
| Off | | [ms] | 36 | 42 | 60 | 60 | 60 | 70 |

Solenoid valves MDH-M12, ISO 5599-1

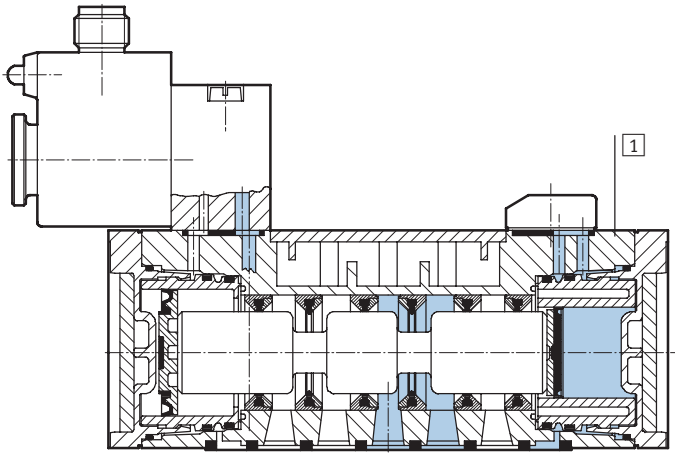
FESTO

Technical data – 5/2-way valves

| Electrical data | | | |
|---------------------------------------|--------------|--------|-------------|
| D solenoid coil with round plug M12x1 | | | |
| Electrical connection | Type | M12X1 | |
| Coil characteristics | D.C. voltage | [V DC] | 21.6...26.4 |
| | Power | [Watt] | 2.7 |
| Duty cycle | | % | 100 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



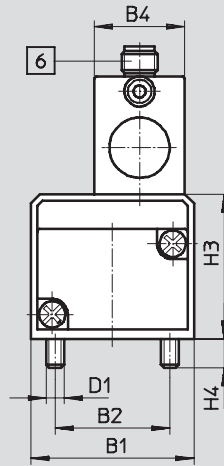
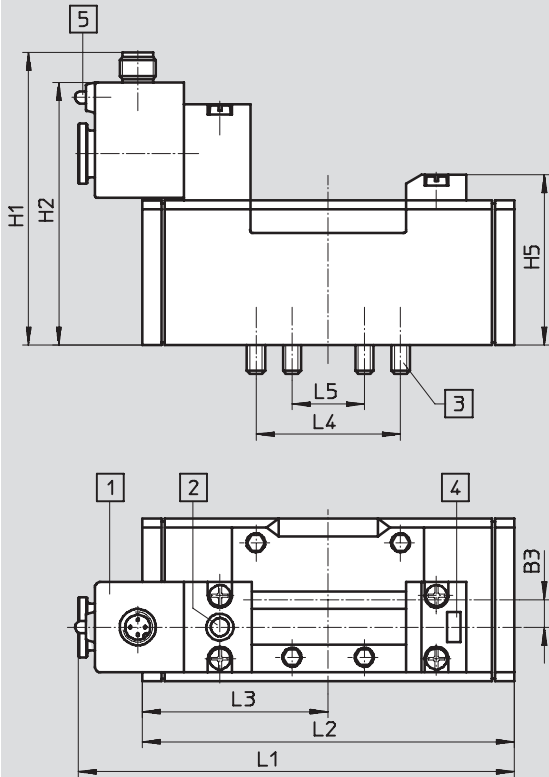
| | | |
|---|-------|---------------------------------|
| 1 | Body | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves MDH-M12, ISO 5599-1

Technical data – 5/2-way valves

Dimensions

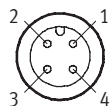
Download CAD data → www.festo.com



- 1 Solenoid coil can be repositioned by 90° regardless of manual override
- 2 Manual override facility
- 3 Captive mounting screws
- 4 Slot for inscription label
- 5 LED display
- 6 Plug socket M12x1
Coil 2-pin to VDMA
Coil 4-pin to Desina

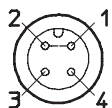
| Type | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 |
|-------------------|----|----|----|----|----|-------|------|----|-----|------|-------|-------|------|----|----|
| ISO size 1 | | | | | | | | | | | | | | | |
| MDH-5/2-... | 42 | 28 | 6 | 30 | M5 | 87.2 | 77.3 | 38 | 9 | 46.5 | 121.8 | 87.6 | 43.8 | 36 | 18 |
| MDH-5/2-...-FR | | | | | | | | | | | 132.2 | 98 | | | |
| ISO size 2 | | | | | | | | | | | | | | | |
| MDH-5/2-... | 54 | 38 | 9 | 30 | M6 | 97.2 | 87.2 | 48 | 9.5 | 56.5 | 144.6 | 123.4 | 61.7 | 48 | 24 |
| MDH-5/2-...-FR | | | | | | | | | | | 161.9 | 140.6 | | | |
| ISO size 3 | | | | | | | | | | | | | | | |
| MDH-5/2-... | 65 | 48 | 12 | 30 | M8 | 104.2 | 94.2 | 55 | 12 | 62.7 | 165.9 | 145.4 | 72.7 | 64 | 32 |
| MDH-5/2-...-FR | | | | | | | | | | | 185.2 | 164.7 | | | |

M12 plug – Pin allocation 2-pin to VDMA



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

M12 plug – Pin allocation 4-pin to Desina



- 1 connected with 2
- 2 connected with 1
- 3 com (-)
- 4 Signal (+)


Solenoid valves MDH-M12, ISO 5599-1

Technical data – 5/2-way valves

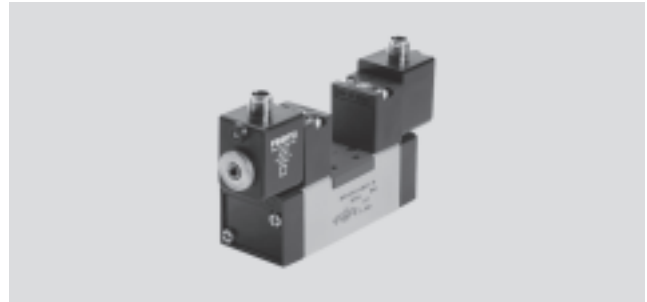
| Ordering data | | | | | | |
|----------------|---|----------|--------------------|-----------------------|----------------------|------------------------|
| Circuit symbol | Description | ISO size | Coil 2-pin to VDMA | | Coil 4-pin to Desina | |
| | | | Part No. | Type | Part No. | Type |
| | Type of reset: – pneumatic Pilot air supply: – internal | 1 | 197 125 | MDH-5/2-D-1-M12-C | 540 803 | MDH-5/2-D-1-M12D-C |
| | | 2 | 533 008 | MDH-5/2-D-2-M12-C | 540 812 | MDH-5/2-D-2-M12D-C |
| | | 3 | 533 009 | MDH-5/2-D-3-M12-C | 540 819 | MDH-5/2-D-3-M12D-C |
| | Type of reset: – pneumatic Pilot air supply: – external | 1 | 533 332 | MDH-5/2-D-1-S-M12-C | 540 810 | MDH-5/2-D-1-S-M12D-C |
| | Type of reset: – mechanical Pilot air supply: – internal | 1 | 533 010 | MDH-5/2-D-1-FR-M12-C | 540 804 | MDH-5/2-D-1-FR-M12D-C |
| | | 2 | 533 011 | MDH-5/2-D-2-FR-M12-C | 540 813 | MDH-5/2-D-2-FR-M12D-C |
| | | 3 | 533 012 | MDH-5/2-D-3-FR-M12-C | 540 820 | MDH-5/2-D-3-FR-M12D-C |
| | Type of reset: – mechanical Pilot air supply: – external | 1 | 533 761 | MDH-5/2-D-1S-FR-M12-C | 540 811 | MDH-5/2-D-1S-FR-M12D-C |

Solenoid valves JMDH-M12, ISO 5599-1

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

-  - Flow rate
1,200 ... 4,500 l/min

-  - Voltage
24 V DC



| General technical data | | | | |
|----------------------------------|-------------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | |
| Valve function | 5/2-way, bistable | | | |
| Design | Piston spool | | | |
| Sealing principle | Soft | | | |
| Actuation type | Electrical | | | |
| Type of actuation | Piloted | | | |
| Pilot air supply | Internal | | | |
| Direction of flow | Non-reversible | | | |
| Exhaust function | Restrictable | | | |
| Manual override | Via tool accessory, detenting | | | |
| Type of mounting | Via through-holes | | | |
| Mounting position | Any | | | |
| Nominal size | [mm] | 8 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] | 1,200 | 2,300 | 4,000 |
| Grid dimension | [mm] | 43 | 56 | 71 |
| Pneumatic connection on sub-base | | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] | 550 | 810 | 1,100 |

| Operating and environmental conditions | | | |
|--|---|-------|-------------|
| Operating medium | Filtered compressed air, lubricated or unlubricated, grade of filtration 40 μ m | | |
| Operating pressure | internal pilot air supply | [bar] | 2 ... 10 |
| Ambient temperature | | [°C] | -10 ... +50 |
| Temperature of medium | | [°C] | -10 ... +50 |

| Valve response times | | | | |
|---------------------------------------|------|----|----|----|
| ISO size | 1 | 2 | 3 | |
| D solenoid coil with round plug M12x1 | | | | |
| | [ms] | 18 | 22 | 25 |

Solenoid valves JMDH-M12, ISO 5599-1

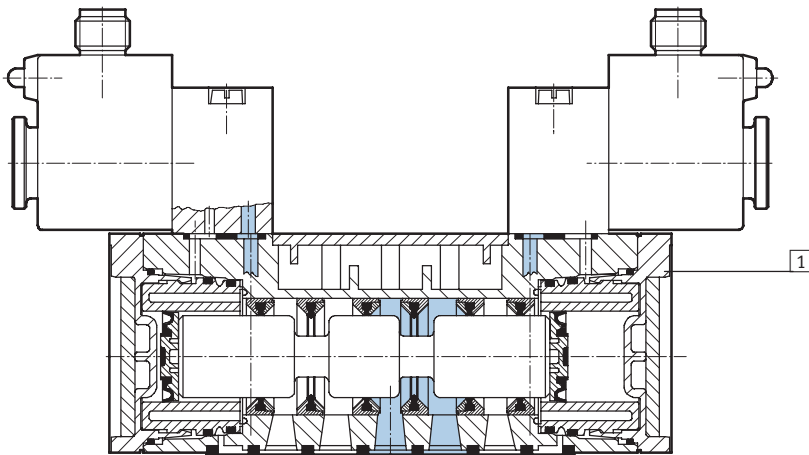
FESTO

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

| Electrical data | | | |
|---------------------------------|--------------|--------|-------------|
| D solenoid coil with round plug | | | |
| Electrical connection | Type | | M12X1 |
| Coil characteristics | D.C. voltage | [V DC] | 21.6...26.4 |
| | Power | [Watt] | 2.7 |
| Duty cycle | | % | 100 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



| | | |
|---|-------|---------------------------------|
| 1 | Body | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves JMDH-M12, ISO 5599-1

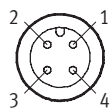
Technical data – 5/2-way valves, double solenoid

Dimensions Download CAD data → www.festo.com

1 Solenoid coil can be repositioned by 90° regardless of manual override
 2 Manual override facility
 3 Captive mounting screws
 5 LED display
 6 Plug socket M12x1
 Coil 2-pin to VDMA
 Coil 4-pin to Desina

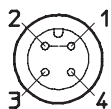
| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-------|------|----|-----|-------|-------|------|----|----|-------|
| 1 | 42 | 28 | 6 | 30 | M5 | 87.2 | 77.2 | 38 | 9 | 148 | 87.6 | 43.8 | 36 | 18 | 108.5 |
| 2 | 54 | 38 | 9 | 30 | M6 | 97.2 | 87.2 | 48 | 9.5 | 165.8 | 123.4 | 61.7 | 48 | 24 | 126.3 |
| 3 | 65 | 48 | 12 | 30 | M8 | 104.2 | 94.2 | 55 | 12 | 186.4 | 145.4 | 72.7 | 64 | 32 | 146.9 |

M12 plug – Pin allocation 2-pin to VDMA



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

M12 plug – Pin allocation 4-pin to Desina



- 1 connected with 2
- 2 connected with 1
- 3 com (-)
- 4 Signal (+)



Solenoid valves JMDH-M12, ISO 5599-1

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

| Ordering data | | | | | | |
|----------------|--|----------|--------------------|---------------------|----------------------|----------------------|
| Circuit symbol | Description | ISO size | Coil 2-pin to VDMA | | Coil 4-pin to Desina | |
| | | | Part No. | Type | Part No. | Type |
| | Pilot air supply: – internal | 1 | 532 687 | JMDH-5/2-D-1-M12-C | 540 809 | JMDH-5/2-D-1-M12D-C |
| | | 2 | 533 013 | JMDH-5/2-D-2-M12-C | 540 818 | JMDH-5/2-D-2-M12D-C |
| | | 3 | 533 015 | JMDH-5/2-D-3-M12-C | 540 825 | JMDH-5/2-D-3-M12D-C |
| | Pilot air supply: – internal Dominant: – signal at 14 | 1 | 539 079 | JMDDH-5/2-D-1-M12-C | 540 808 | JMDDH-5/2-D-1-M12D-C |
| | | 2 | 539 077 | JMDDH-5/2-D-2-M12-C | 540 817 | JMDDH-5/2-D-2-M12D-C |
| | | 3 | 539 081 | JMDDH-5/2-D-3-M12-C | 540 824 | JMDDH-5/2-D-3-M12D-C |

Solenoid valves MDH-M12, ISO 5599-1

Technical data – 5/3-way valves

-  - Flow rate
1,200 ... 4,600 l/min
-  - Voltage
24 V DC



| General technical data | | | |
|----------------------------------|-------------------------------|-----------------|---------------------------------------|
| ISO size | 1 | 2 | 3 |
| Valve function | 5/3-way, monostable | | |
| Design | Piston spool | | |
| Sealing principle | Soft | | |
| Actuation type | Electrical | | |
| Type of reset | Mechanical spring | | |
| Type of actuation | Piloted | | |
| Pilot air supply | Internal | | |
| Direction of flow | Non-reversible | | |
| Exhaust function | Restrictable | | |
| Manual override | Via tool accessory, detenting | | |
| Type of mounting | Via through-holes | | |
| Mounting position | Any | | |
| Nominal size | [mm] 8 | 11 | 14.5 |
| Standard nominal flow rate | [l/min] 1,200 | 2,300 | 4,000 (B), 4,100 (G), 4,600 (E) |
| Grid dimension | [mm] 43 | 56 | 71 |
| Pneumatic connection on sub-base | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| Product weight | [g] 580 | 880 | 1,120 |

| Operating and environmental conditions | | |
|--|---|----------------|
| Operating medium | Filtered compressed air, lubricated or unlubricated, grade of filtration 40µm | |
| Operating pressure | internal pilot air supply | [bar] 3 ... 10 |
| Ambient temperature | [°C] | -10 ... +50 |
| Temperature of medium | [°C] | -10 ... +50 |

| Valve response times | | | | | | |
|--|---------|-----|----|-----|----|-----|
| ISO size | 1 | | 2 | | 3 | |
| | On | Off | On | Off | On | Off |
| with D solenoid coil with round plug M12x1 | | | | | | |
| | [ms] 25 | 55 | 35 | 70 | 36 | 90 |

Solenoid valves MDH-M12, ISO 5599-1

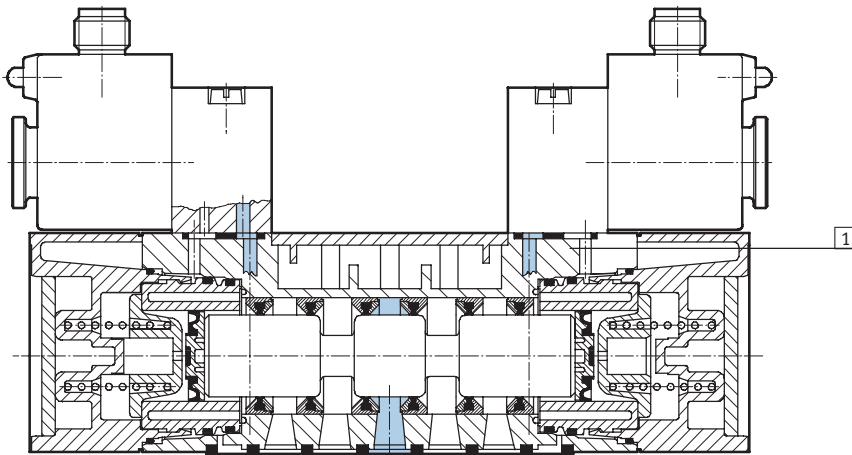
FESTO

Technical data – 5/3-way valves

| Electrical data | | | |
|---------------------------------|--------------|--------|-------------|
| D solenoid coil with round plug | | | |
| Electrical connection | Type | M12X1 | |
| Coil characteristics | D.C. voltage | [V DC] | 21.6...26.4 |
| | Power | [Watt] | 2.7 |
| Duty cycle | | % | 100 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



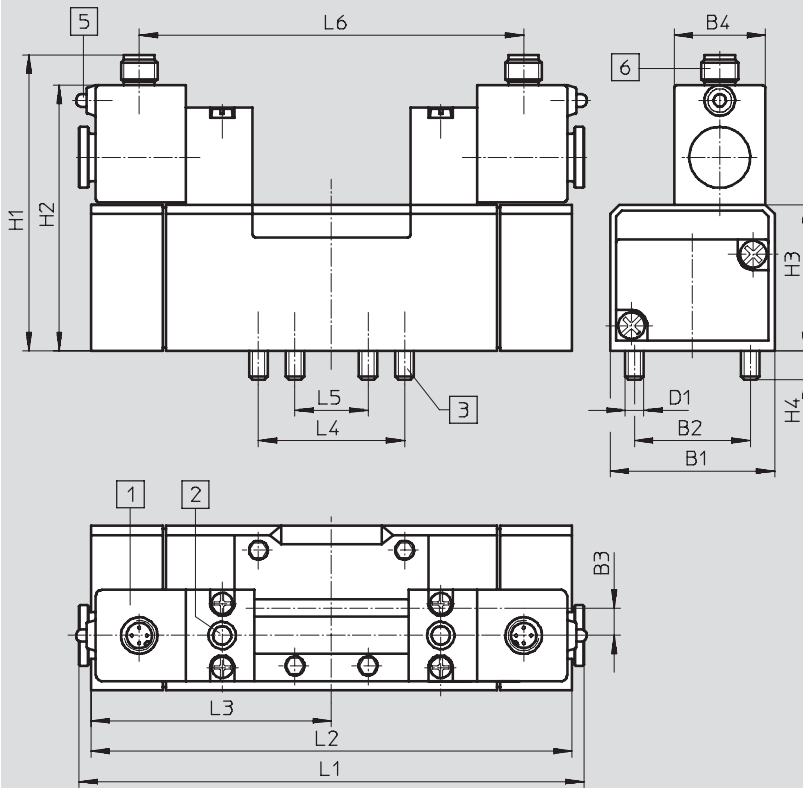
| | | |
|---|-------|---------------------------------|
| 1 | Body | Die-cast aluminium, polyacetate |
| - | Seals | Nitrile rubber |

Solenoid valves MDH-M12, ISO 5599-1

Technical data – 5/3-way valves

Dimensions

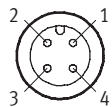
Download CAD data → www.festo.com



- 1 Solenoid coil can be repositioned by 90° regardless of manual override
- 2 Manual override facility
- 3 Captive mounting screws
- 5 LED display
- 6 Plug socket M12x1
Coil 2-pin to VDMA
Coil 4-pin to Desina

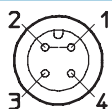
| ISO size | B1 | B2 | B3 | B4 | D1 | H1 | H2 | H3 | H4 | L1 | L2 | L3 | L4 | L5 | L6 |
|----------|----|----|----|----|----|-------|------|----|-----|-------|-------|------|----|----|-------|
| 1 | 42 | 28 | 6 | 30 | M5 | 87.2 | 77.2 | 38 | 9 | 148 | 108.4 | 54.3 | 36 | 18 | 108.5 |
| 2 | 54 | 38 | 9 | 30 | M6 | 97.2 | 87.2 | 48 | 9.5 | 165.8 | 158 | 79 | 48 | 24 | 126.3 |
| 3 | 65 | 48 | 12 | 30 | M8 | 104.2 | 94.2 | 55 | 12 | 186.4 | 184 | 92 | 64 | 32 | 146.9 |

M12 plug – Pin allocation 2-pin to VDMA



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

M12 plug – Pin allocation 4-pin to Desina



- 1 connected with 2
- 2 connected with 1
- 3 com (-)
- 4 Signal (+)

Solenoid valves MDH-M12, ISO 5599-1



Technical data – 5/3-way valves

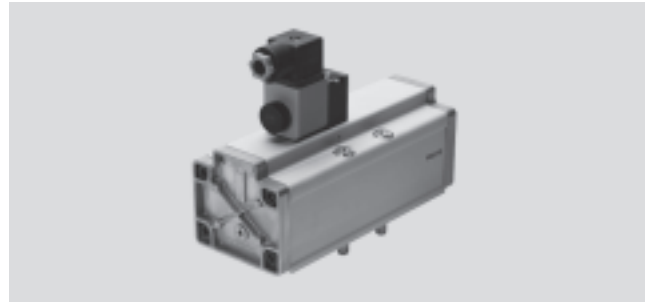
| Ordering data | | | | | | |
|----------------|--|----------|--------------------|--------------------|----------------------|---------------------|
| Circuit symbol | Description | ISO size | Coil 2-pin to VDMA | | Coil 4-pin to Desina | |
| | | | Part No. | Type | Part No. | Type |
| | Normal position: – closed Pilot air supply: – internal | 1 | 525 307 | MDH-5/3G-D-1-M12-C | 540 806 | MDH-5/3G-D-1-M12D-C |
| | | 2 | 539078 | MDH-5/3G-D-2-M12-C | 540 815 | MDH-5/3G-D-2-M12D-C |
| | | 3 | 539080 | MDH-5/3G-D-3-M12-C | 540 822 | MDH-5/3G-D-3-M12D-C |
| | Normal position: – exhausted Pilot air supply: – internal | 1 | 197 126 | MDH-5/3E-D-1-M12-C | 540 805 | MDH-5/3E-D-1-M12D-C |
| | | 2 | 533 016 | MDH-5/3E-D-2-M12-C | 540 814 | MDH-5/3E-D-2-M12D-C |
| | | 3 | 533 017 | MDH-5/3E-D-3-M12-C | 540 821 | MDH-5/3E-D-3-M12D-C |
| | Normal position: – pressurised Pilot air supply: – internal | 1 | 533 005 | MDH-5/3B-D-1-M12-C | 540 807 | MDH-5/3B-D-1-M12D-C |
| | | 2 | 533 006 | MDH-5/3B-D-2-M12-C | 540 816 | MDH-5/3B-D-2-M12D-C |
| | | 3 | 533 007 | MDH-5/3B-D-3-M12-C | 540 823 | MDH-5/3B-D-3-M12D-C |

Solenoid valves MDH, ISO 5599-1

Technical data – 5/2-way valves

FESTO

-  - Flow rate
-  - Voltage
24 V DC
42, 110, 230 V AC



| General technical data | | |
|----------------------------------|---------|--------------------------|
| ISO size | | 4 |
| Valve function | | 5/2-way, single solenoid |
| Constructional design | | Piston spool |
| Sealing principle | | Soft |
| Actuation type | | Electrical |
| Type of reset | | Pneumatic spring |
| Type of pilot control | | Piloted |
| Pilot air supply | | Internal |
| 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] | 18 |
| Standard nominal flow rate | [l/min] | 6000 |
| Grid dimension | [mm] | 82 |
| Pneumatic connection on sub-base | | G $\frac{3}{4}$ |
| Product weight | [g] | 2600 |

| Operating and environmental conditions | | | |
|--|---------------------------|-------|---|
| Operating medium | | | Filtered compressed air, lubricated or unlubricated |
| Operating pressure | Internal pilot air supply | [bar] | 3 ... 16 |
| | External pilot air supply | [bar] | – |
| Pilot pressure | | [bar] | – |
| Ambient temperature | | [°C] | –5 ... +40 |
| Temperature of medium | | [°C] | –10 ... +60 |

| Valve response times [ms] | |
|---------------------------|-----|
| D solenoid coil | |
| On | 120 |
| Off | 160 |

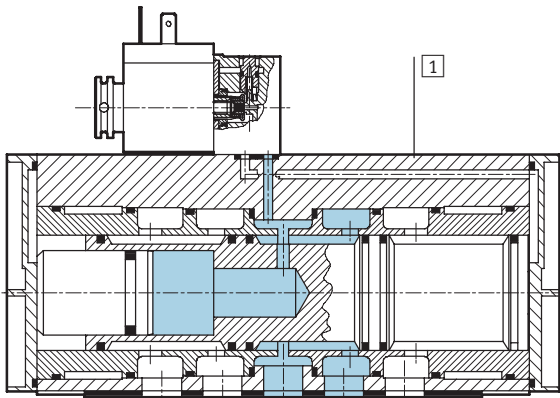
Solenoid valves MDH, ISO 5599-1

Technical data – 5/2-way valves

| Electrical data | | | |
|-------------------------------|---------------------------|--------|--|
| D solenoid coil | | | |
| Electrical connection | Design | | Plug, square design to EN 175301-803, type A |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 42, 110, 230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 6.8 |
| | A.C. voltage | [VA] | Pull: 16.5 |
| | 42 V | | Hold: 12.2 |
| | A.C. voltage 110 V, 230 V | [VA] | Pull: 14.4 |
| | | | Hold: 10.5 |
| Protection class to EN 60 529 | | | IP65 |

Materials

Sectional view



| | | |
|---|---------|--|
| 1 | Housing | Anodised aluminium, polyacetate, brass |
| - | Seals | Nitrile rubber, polyurethane, polytetrafluoroethylene carbon |

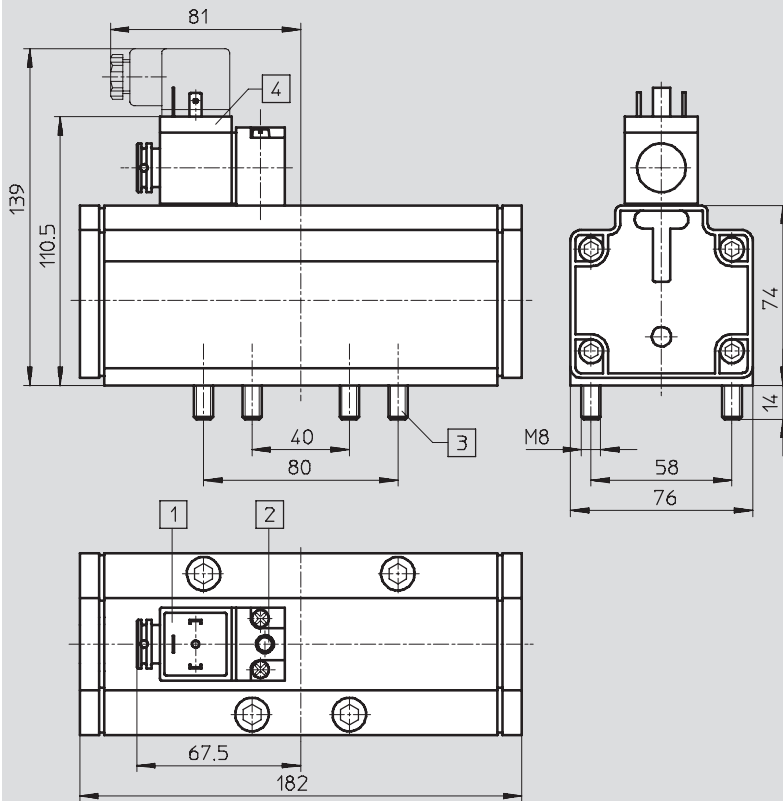
Solenoid valves MDH, ISO 5599-1

Technical data – 5/2-way valves

FESTO

Dimensions

Download CAD data → www.festo.com



- 1 Wiring at plug socket to EN 175301-803, type A → 101
- 2 Manual override
- 3 Captive mounting screws
- 4 Solenoid coil can be repositioned by 90° regardless of manual override

Ordering data


| Circuit symbol | Solenoid coil | Voltage | ISO size | Part No. | Type | |
|----------------|--|---------|----------|-------------------|-------------------------------|--|
| | With D solenoid coil, pneumatic reset, internal pilot air supply | 24 V DC | 4 | 12 457 | MDH-5/2-3/4-D-4-24DC | |
| | | – | | 14 544 | MDH-5/2-3/4-D-4 ¹⁾ | |
| | Usable pilot valves: | | | | | |
| | 24 V DC | – | 119 600 | MDH-3/2-24DC | | |
| | 110 V AC | – | 119 601 | MDH-3/2-110AC | | |
| | 230 V AC | – | 119 602 | MDH-3/2-230AC | | |
| | 24 V DC/ 42 V AC | – | 119 603 | MDH-3/2-24DC/42AC | | |


1) Without pilot valve. The part number for the pilot valve must be quoted when ordering.
Order example: 14 544 MDH-5/2-3/4-D-4-119 602

Solenoid valves JMDH, ISO 5599-1

FESTO

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

-  - Flow rate
6000 l/min

-  - Voltage
24 V DC
42, 110, 230 V AC



| General technical data | | |
|----------------------------------|---------|--------------------------|
| ISO size | | 4 |
| 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 |
| 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] | 18 |
| Standard nominal flow rate | [l/min] | 6000 |
| Grid dimension | [mm] | 82 |
| Pneumatic connection on sub-base | | G $\frac{3}{4}$ |
| Product weight | [g] | 2600 |

| Operating and environmental conditions | | | |
|--|---------------------------|-------|---|
| Operating medium | | | Filtered compressed air, lubricated or unlubricated |
| Operating pressure | Internal pilot air supply | [bar] | 2 ... 16 |
| | External pilot air supply | [bar] | – |
| Pilot pressure | | [bar] | – |
| Ambient temperature | | [°C] | –5 ... +40 |
| Temperature of medium | | [°C] | –10 ... +60 |

| Valve response times [ms] | |
|---------------------------|--|
| With D solenoid coil | |
| 40 | |

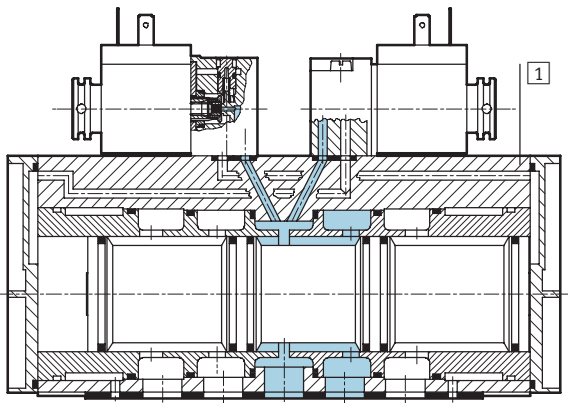
Solenoid valves JMDH, ISO 5599-1

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

| Electrical data | | | |
|-------------------------------|-----------------------------------|--|-----------------------------|
| D solenoid coil | | | |
| Electrical connection | | Plug, square design to EN 175301-803, type A | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 42, 110, 230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 6.8 |
| | A.C. voltage | [VA] | Pull: 16.5 Hold: 12.2 |
| | 42 V A.C. voltage 110 V, 230 V | [VA] | Pull: 14.5 Hold: 10.5 |
| Protection class to EN 60 529 | | IP65 | |

Materials

Sectional view



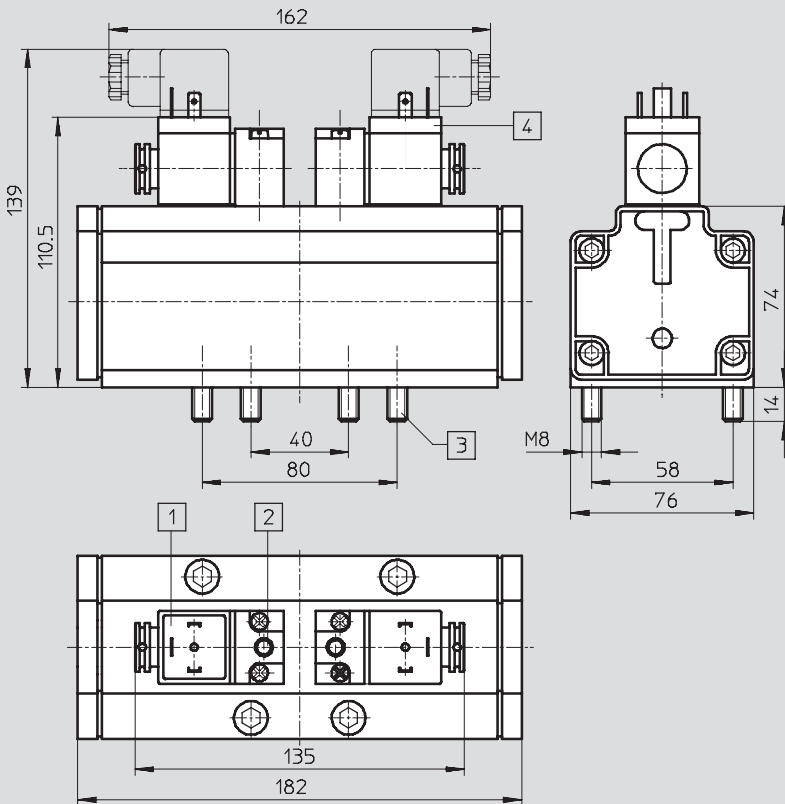
| | | |
|---|---------|--|
| 1 | Housing | Anodised aluminium, polyacetate, brass |
| - | Seals | Nitrile rubber, polyurethane, polytetrafluoroethylene carbon |

Solenoid valves JMDH, ISO 5599-1

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

Dimensions

Download CAD data → www.festo.com



- 1 Wiring at plug socket to EN 175301-803, type A → 101
- 2 Manual override
- 3 Captive mounting screws
- 4 Solenoid coil can be repositioned by 90° regardless of manual override

Ordering data – Double solenoid valve


| Circuit symbol | Description | Voltage | ISO size | Part No. | Type | | |
|---------------------|---|-----------------------------|-------------------|----------|--------------------------------|--|--|
| | With D solenoid coil, internal pilot air supply | 24 V DC | 4 | 12 458 | JMDH-5/2-3/4-D-4-24DC | | |
| | | – | | 14 545 | JMDH-5/2-3/4-D-4 ¹⁾ | | |
| | | Usable pilot valves: | | | | | |
| | | 24 V DC | – | 119 600 | MDH-3/2-24DC | | |
| | | 110 V AC | – | 119 601 | MDH-3/2-110AC | | |
| | | 230 V AC | – | 119 602 | MDH-3/2-230AC | | |
| 24 V DC/ 42 V AC | – | 119 603 | MDH-3/2-24DC/42AC | | | | |


1) Without pilot valve. The part number for the pilot valve must be quoted when ordering.
Order example: 14 545 MDH-5/2-3/4-D-4-119 602

Solenoid valves MDH, ISO 5599-1

Technical data – 5/3-way valves

FESTO

-  - Flow rate
4800 l/min

-  - Voltage
24 V DC
42, 110, 230 V AC



| General technical data | | | |
|----------------------------------|--------------------------|---------|------|
| ISO size | | | 4 |
| Valve function | 5/3-way, single solenoid | | |
| Constructional design | Piston spool | | |
| Sealing principle | Soft | | |
| Actuation type | Electrical | | |
| Type of reset | Pneumatic spring | | |
| Type of pilot control | Piloted | | |
| Pilot air supply | Internal | | |
| 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] | 18 | |
| Standard nominal flow rate | Closed | [l/min] | 4800 |
| | Exhausted | [l/min] | 4800 |
| Grid dimension | [mm] | 82 | |
| Pneumatic connection on sub-base | G $\frac{3}{4}$ | | |
| Product weight | [g] | 2600 | |

| Operating and environmental conditions | | | |
|--|---|-------------|----------|
| Operating medium | Filtered compressed air, lubricated or unlubricated | | |
| Operating pressure | Internal pilot air supply | [bar] | 3 ... 16 |
| | External pilot air supply | [bar] | – |
| Pilot pressure | [bar] | – | |
| Ambient temperature | [°C] | – 5 ... +40 | |
| Temperature of medium | [°C] | –10 ... +60 | |

| Valve response times [ms] | |
|---------------------------|-----|
| With D solenoid coil | |
| On | 85 |
| Off | 290 |

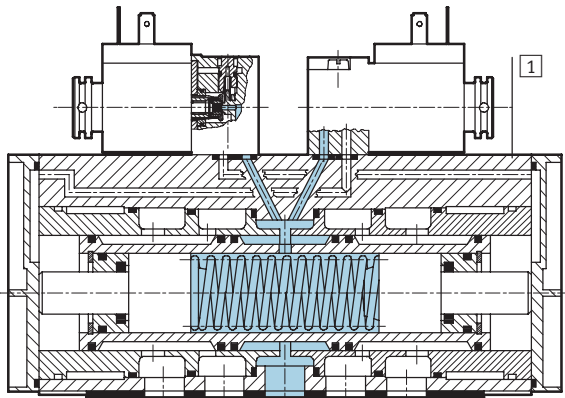
Solenoid valves MDH, ISO 5599-1

Technical data – 5/3-way valves

| Electrical data | | | |
|-----------------------|---------------------------|--|-----------------------------|
| D solenoid coil | | | |
| Electrical connection | | Plug, square design to EN 175301-803, type A | |
| Operating voltage | D.C. voltage | [V DC] | 24 |
| | A.C. voltage | [V AC] | 42, 110, 230 (50 ... 60 Hz) |
| Coil characteristics | D.C. voltage | [W] | 6.8 |
| | A.C. voltage | [VA] | Pull: 16.5 |
| | 42 V | | Hold: 12.2 |
| | A.C. voltage 110 V, 230 V | [VA] | Pull: 14.5 Hold: 10.5 |

Materials

Sectional view



| | | |
|---|---------|--|
| 1 | Housing | Anodised aluminium, polyacetate, brass |
| - | Seals | Nitrile rubber, polyurethane, polytetrafluoroethylene carbon |

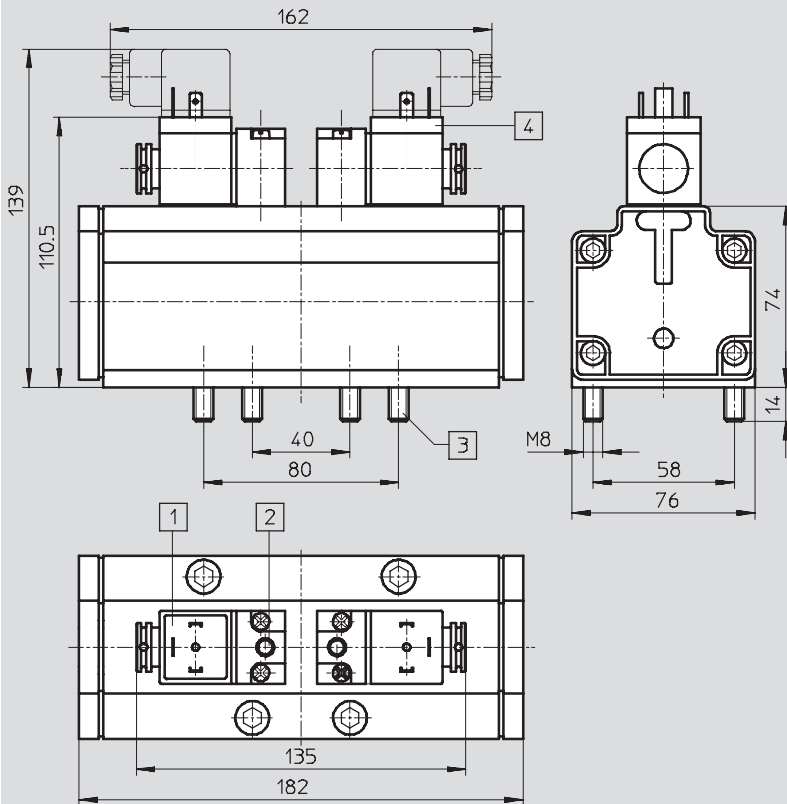
Solenoid valves MDH, ISO 5599-1

Technical data – 5/3-way valves

FESTO

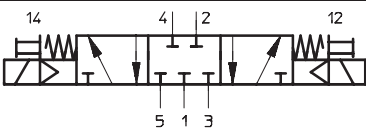
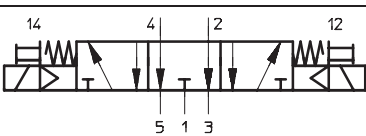
Dimensions

Download CAD data → www.festo.com



- 1) Wiring at plug socket to EN 175301-803, type A → 101
- 2) Manual override
- 3) Captive mounting screws
- 4) Solenoid coil can be repositioned by 90° regardless of manual override

Ordering data

| Circuit symbol | Description | Voltage | ISO size | Part No. | Type | | |
|---|---|-----------------------------|---------------------|----------|--------------------------------|--|--|
|  | With D solenoid coil, normally closed, internal pilot air supply | 24 V DC | 4 | 12 459 | MDH-5/3G-3/4-D-4-24DC | | |
| | | – | | 14 546 | MDH-5/3G-3/4-D-4 ¹⁾ | | |
| | | Usable pilot valves: | | | | | |
| | | 24 V DC | – | 119 600 | MDH-3/2-24VDC | | |
| | | 110 V AC | – | 119 601 | MDH-3/2-110VAC | | |
| 230 V AC | – | 119 602 | MDH-3/2-230VAC | | | | |
| 24 V DC/ 42 V AC | – | 119 603 | MDH-3/2-24VDC/42VAC | | | | |
|  | With D solenoid coil, normally exhausted, internal pilot air supply | 24 V DC | 4 | 12 460 | MDH-5/3E-3/4-D-4-24DC | | |
| | | – | | 14 547 | MDH-5/3E-3/4-D-4 ¹⁾ | | |
| | | Usable pilot valves: | | | | | |
| | | 24 V DC | – | 119 600 | MDH-3/2-24VDC | | |
| | | 110 V AC | – | 119 601 | MDH-3/2-110VAC | | |
| 230 V AC | – | 119 602 | MDH-3/2-230VAC | | | | |
| 24 V DC/ 42 V AC | – | 119 603 | MDH-3/2-24VDC/42VAC | | | | |

1) Without pilot valve. The part number for the pilot valve must be quoted when ordering.
Order example: 14 546 MDH-5/3G-3/4-D-4-119 602

Pneumatic valves, ISO 5599-1

Type code

VL - 5/3 G - D-1 - C

| Type | |
|------|------------------------------------|
| VL | Single pilot |
| J | Double pilot |
| JD | Double pilot, with dominant signal |

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

| Normal position | |
|-----------------|-------------|
| G | Closed |
| E | Exhausted |
| B | Pressurised |

| Size | |
|-------|------------|
| D-1 | ISO size 1 |
| D-2 | ISO size 2 |
| D-3 | ISO size 3 |
| ¾-D-4 | ISO size 4 |

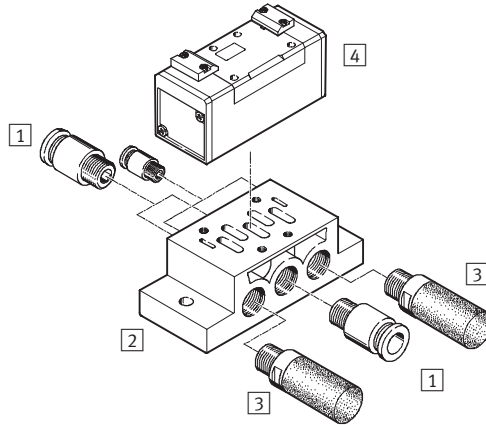
| Type of reset | |
|---------------|-------------------|
| FR | Mechanical spring |
| | Pneumatic spring |

| Generation | |
|------------|----------|
| C | Series C |

Pneumatic valves, ISO 5599-1

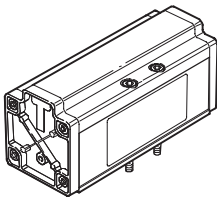
Peripherals overview

Individual mounting



Variants

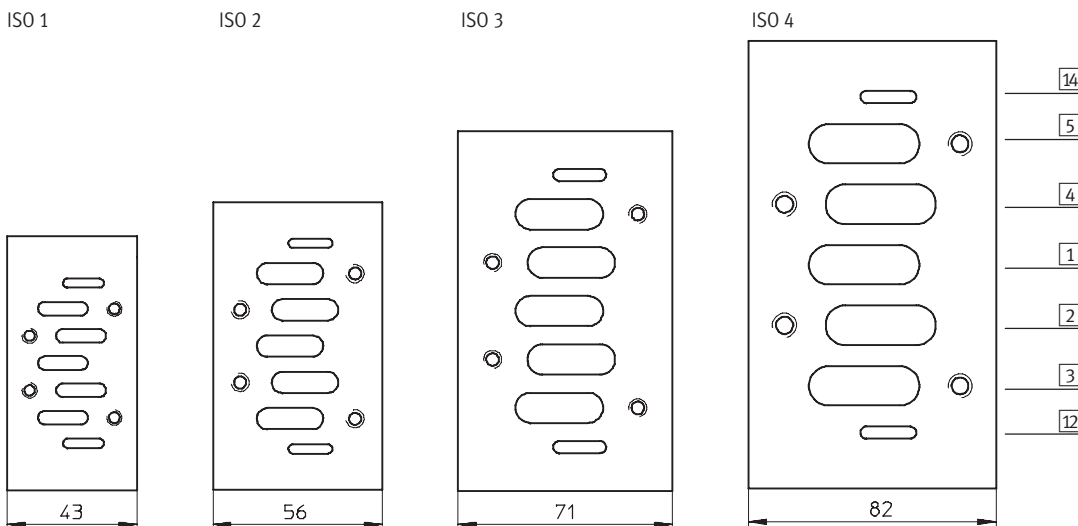
J-5/...-3/4-D-4,
VL-5/...-3/4-D-4



| Accessories | | Brief description | → Page/Internet |
|-------------|--------------------------------|---|-----------------|
| 1 | Push-in fitting QS | For connecting compressed air tubing with standard O.D. | quick star |
| 2 | Individual sub-base NAS/NAU | NAS – With lateral ports NAU – With ports underneath | 88 |
| 3 | Silencer | For fitting in exhaust ports | u |
| 4 | Pneumatic valve | Port pattern to ISO 5599-1 | 6 |

Port pattern on sub-base to ISO 5599-1

Defined interfaces between valve and sub-base

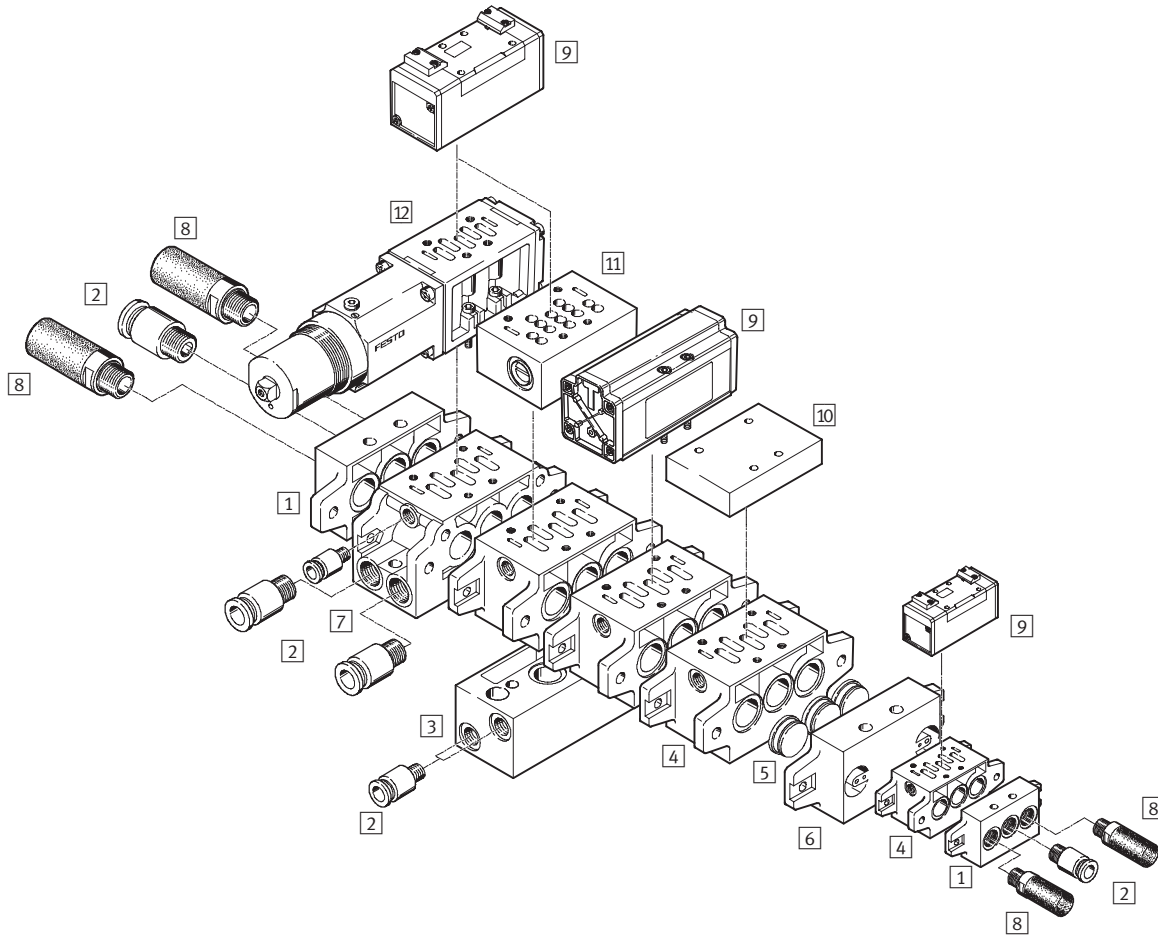


Pneumatic valves, ISO 5599-1

Peripherals overview

FESTO

Manifold mounting



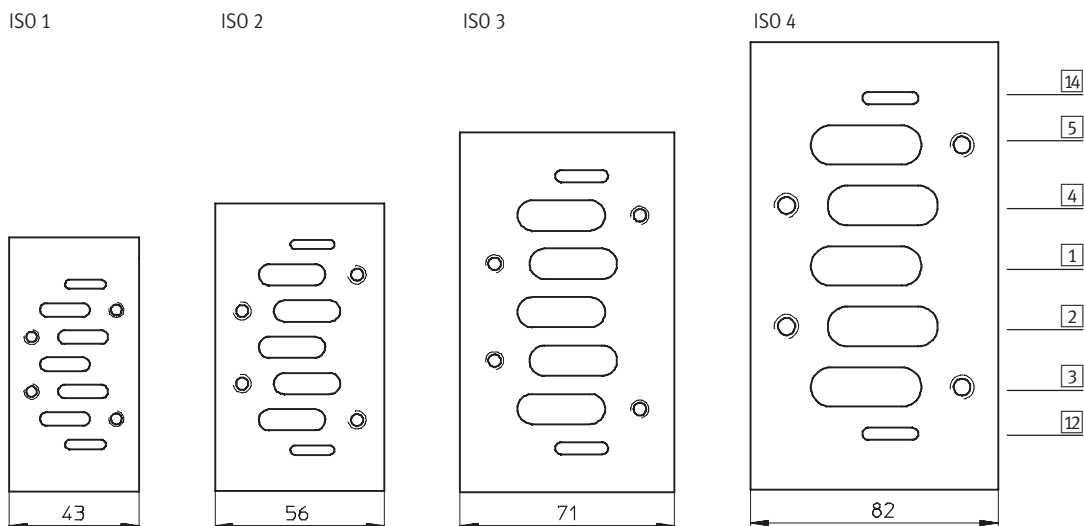
Pneumatic valves, ISO 5599-1

Peripherals overview

| Accessories | | |
|-------------|--|-----------------|
| | Brief description | → Page/Internet |
| 1 | End plate kit NEV | 91 |
| 2 | Push-in fitting QS | quick star |
| 3 | Angle connection block NAW | 90 |
| 4 | Manifold sub-base NAV | 90 |
| 5 | Isolating disc NSC | 92 |
| 6 | Intermediate plate NZV | 94 |
| 7 | Manifold sub-base for angle connection NAWV | 91 |
| 8 | Silencer | u |
| 9 | Pneumatic valve | 6 |
| 10 | Blanking plate NDV | 92 |
| 11 | Throttle plate for ISO size 1, 2 and 3 GRO | 95 |
| 12 | Intermediate pressure regulator plate for ISO size 1, 2 and 3 LR-ZP | 96 |

Port pattern on sub-base to ISO 5599-1

Defined interfaces between valve and sub-base

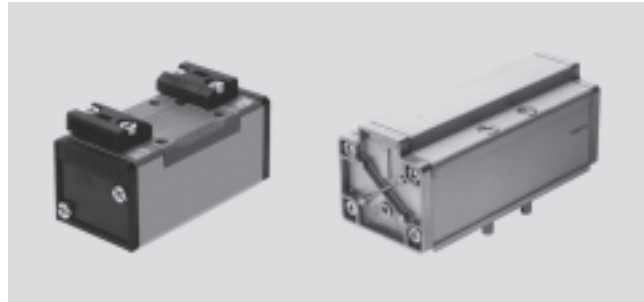


Pneumatic valves VL, ISO 5599-1

FESTO

Technical data – 5/2-way valves

-  - Flow rate
1200 ... 6000 l/min



| General technical data | | | | |
|------------------------------------|--------------------------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | 4 |
| 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 | Non-reversible | | | |
| Exhaust function | With flow control | | | |
| Manual override | None | | | |
| Type of mounting | Via through-holes | | | |
| Mounting position | Any | | | |
| Nominal size [mm] | 8 | 11 | 14.5 | 18 |
| Standard nominal flow rate [l/min] | 1200 | 2300 | 4500 | 6000 |
| Grid dimension [mm] | 43 | 56 | 71 | 82 |
| Pneumatic connection on sub-base | 1, 2, 3, 4, 5 | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ |
| | 12, 14 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{8}$ |
| Product weight [g] | 290 | 550 | 810 | 1800 |
| Noise level [dB (A)] | 85 | | | |

| Operating and environmental conditions | | | |
|--|---|-------------|--------------|
| ISO size | 1, 2, 3 | | 4 |
| Type of reset | Pneumatic | Mechanical | Pneumatic |
| Operating medium | Filtered compressed air, lubricated or unlubricated Vacuum | | |
| Operating pressure [bar] | 2 ... 16 | -0.9 ... 16 | -0.9 ... +16 |
| Pilot pressure [bar] | 2 ... 16 | 3 ... 16 | 3 ... 16 |
| Ambient temperature [°C] | -10 ... +60 | | |
| Temperature of medium [°C] | -10 ... +60 | | |

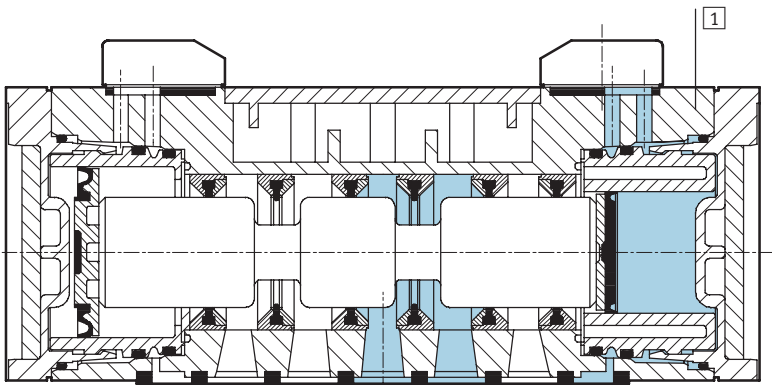
Pneumatic valves VL, ISO 5599-1

Technical data – 5/2-way valves

| Valve response times | | | | | | | | |
|----------------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| ISO size | 1 | | 2 | | 3 | | 4 | |
| Type of reset | Pneumatic | Mechanical | Pneumatic | Mechanical | Pneumatic | Mechanical | Pneumatic | Mechanical |
| On | 9 | 6 | 23 | 11 | 29 | 13 | 25 | – |
| Off | 18 | 23 | 39 | 39 | 36 | 43 | 90 | – |

Materials

Sectional view (ISO size 1, 2, 3)



| ISO size | 1, 2, 3 | 4 |
|-----------|---------------------------------|--|
| 1 Housing | Die-cast aluminium, polyacetate | Anodised aluminium, brass, polyurethane |
| – Seals | Nitrile rubber | Nitrile rubber, polytetrafluoroethylene carbon |

Pneumatic valves VL, ISO 5599-1

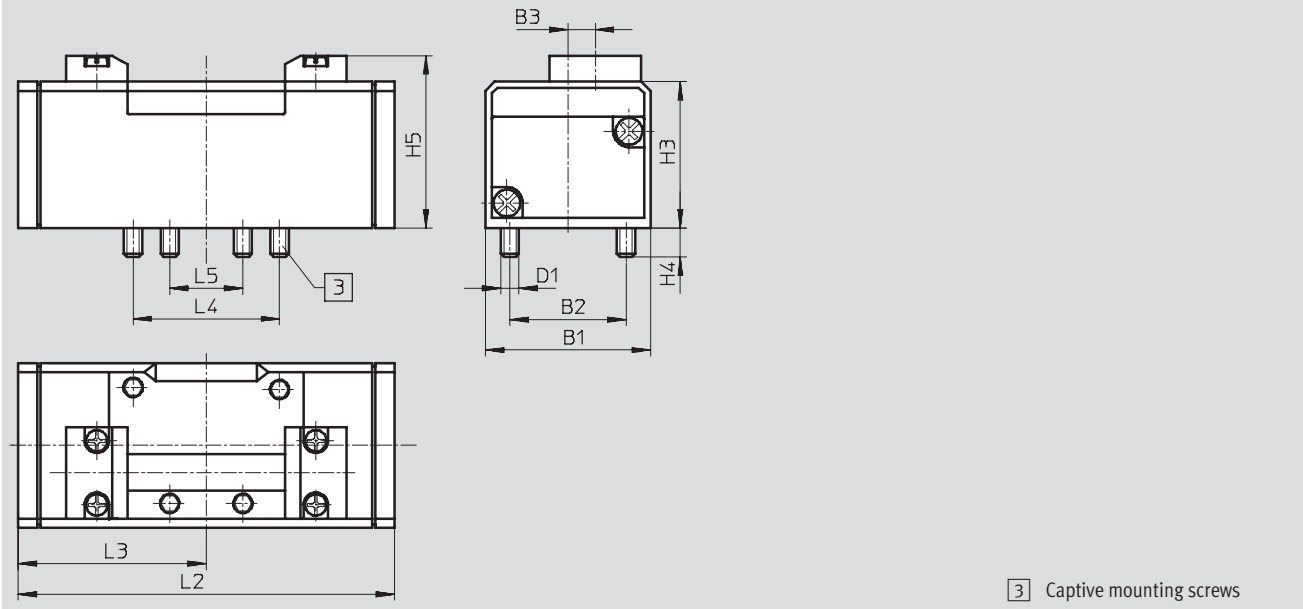
Technical data – 5/2-way valves



Dimensions

Download CAD data → www.festo.com

ISO size 1, 2, 3



| Type | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|-------------------|----|----|----|----|----|-----|------|-------|------|----|----|
| ISO size 1 | | | | | | | | | | | |
| VL-5/2-... | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 87.6 | 43.8 | 36 | 18 |
| VL-5/2-...-FR | | | | | | | | 98 | | | |
| ISO size 2 | | | | | | | | | | | |
| VL-5/2-... | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 123.4 | 61.7 | 48 | 24 |
| VL-5/2-...-FR | | | | | | | | 140.7 | | | |
| ISO size 3 | | | | | | | | | | | |
| VL-5/2-... | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 145.4 | 72.7 | 64 | 32 |
| VL-5/2-...-FR | | | | | | | | 164.7 | | | |

Pneumatic valves VL, ISO 5599-1

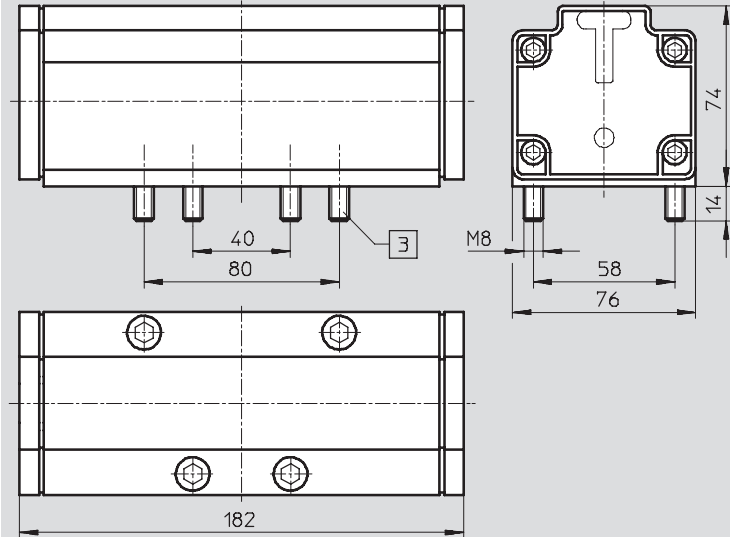
Technical data – 5/2-way valves

FESTO

Dimensions

Download CAD data → www.festo.com

ISO size 4



3 Captive mounting screws


Ordering data

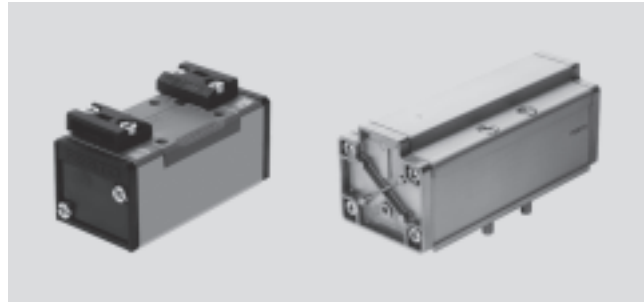
| Circuit symbol | Description | ISO size | Part No. | Type |
|----------------|------------------|----------|----------|-----------------|
| | Pneumatic reset | 1 | 151 009 | VL-5/2-D-1-C |
| | | 2 | 151 845 | VL-5/2-D-2-C |
| | | 3 | 151 864 | VL-5/2-D-3-C |
| | | 4 | 12 461 | VL-5/2-3/4-D-4 |
| | Mechanical reset | 1 | 151 014 | VL-5/2-D-1-FR-C |
| | | 2 | 151 844 | VL-5/2-D-2-FR-C |
| | | 3 | 151 863 | VL-5/2-D-3-FR-C |

Pneumatic valves J, ISO 5599-1

FESTO

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

-  - Flow rate
1200 ... 6000 l/min



| General technical data | | | | | |
|----------------------------------|-----------------------|-----------------|-----------------|-----------------|-----------------|
| ISO size | 1 | 2 | 3 | 4 | |
| 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 | 11 | 14.5 | 18 |
| Standard nominal flow rate | [l/min] | 1200 | 2300 | 4500 | 6000 |
| Grid dimension | [mm] | 43 | 56 | 71 | 82 |
| Pneumatic connection on sub-base | 1, 2, 3, 4, 5 | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ |
| | 12, 14 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{8}$ |
| Product weight | [g] | 290 | 550 | 810 | 1800 |
| Noise level | [dB (A)] | 85 | | | |

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

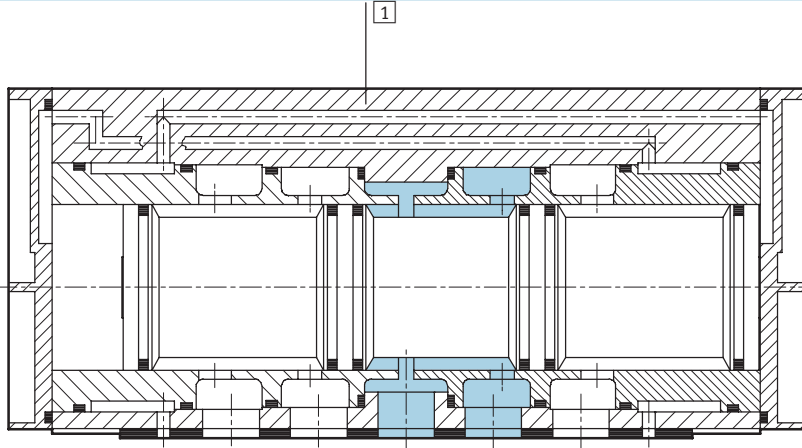
| Valve response times [ms] | | | | |
|---------------------------|---|-----------------------|---|-----------------------|
| ISO size | 1 | 2, 3 | | 4 |
| | | Dominant signal at 14 | | Dominant signal at 14 |
| | 6 | 6/4 | 8 | 8 |
| | | | | 20 |

Pneumatic valves J, ISO 5599-1

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

Materials

Sectional view (ISO size 4)

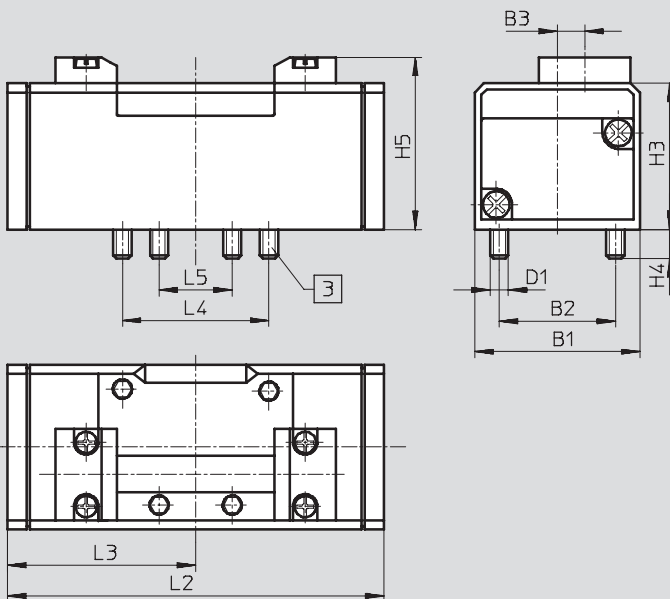


| ISO size | 1, 2, 3 | 4 |
|-----------|---------------------------------|--|
| 1 Housing | Die-cast aluminium, polyacetate | Anodised aluminium, brass, polyurethane |
| – Seals | Nitrile rubber | Nitrile rubber, polytetrafluoroethylene carbon |

Dimensions

Download CAD data → www.festo.com

ISO size 1, 2, 3



3 Captive mounting screws

| ISO size | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|----------|----|----|----|----|----|-----|------|-------|------|----|----|
| 1 | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 87.6 | 43.8 | 36 | 18 |
| 2 | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 123.4 | 61.7 | 48 | 24 |
| 3 | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 145.4 | 72.7 | 64 | 32 |

Pneumatic valves J, ISO 5599-1

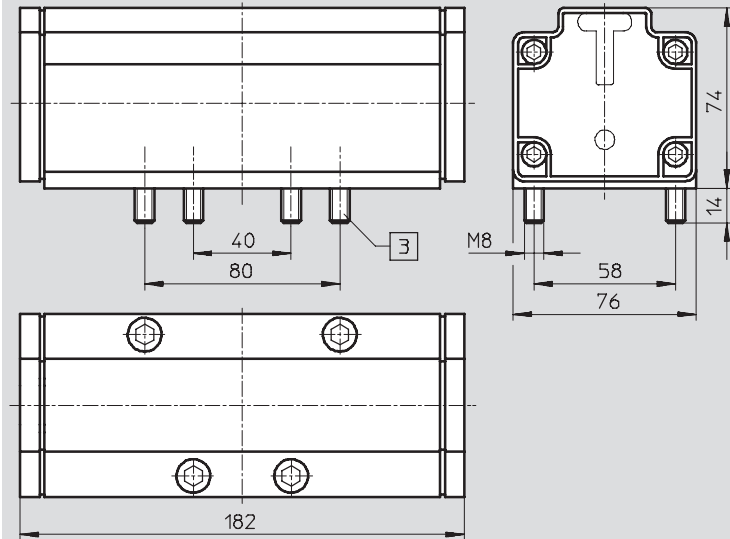
Technical data – 5/2-way valves, double pilot

FESTO

Dimensions

Download CAD data → www.festo.com

ISO size 4



3 Captive mounting screws

Ordering data

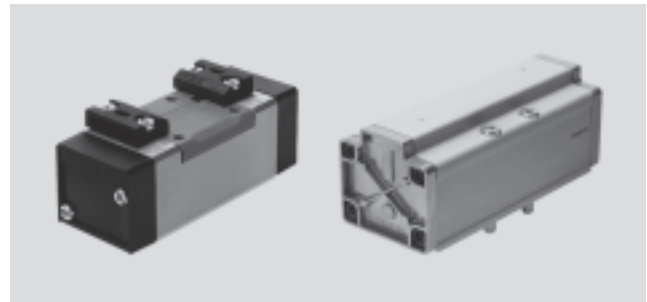
| Circuit symbol | Description | ISO size | Part No. | Type |
|----------------|----------------------------|----------|----------|---------------|
| | | 1 | 151 007 | J-5/2-D-1-C |
| | | 2 | 151 846 | J-5/2-D-2-C |
| | | 3 | 151 865 | J-5/2-D-3-C |
| | | 4 | 12 462 | J-5/2-3/4-D-4 |
| | With dominant signal at 14 | 1 | 151 008 | JD-5/2-D-1-C |
| | | 2 | 151 847 | JD-5/2-D-2-C |
| | | 3 | 151 866 | JD-5/2-D-3-C |

Pneumatic valves VL, ISO 5599-1

Technical data – 5/3-way valves

FESTO

-  - Flow rate
1200 ... 6000 l/min



| General technical data | | | | | | |
|----------------------------------|---------------|-----------------------|-----------------|-----------------|-----------------|------|
| ISO size | | 1 | 2 | 3 | 4 | |
| 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] | 8 | 11 | 14.5 | 18 | |
| Standard nominal flow rate | Closed | [l/min] | 1200 | 2300 | 4100 | 6000 |
| | Exhausted | [l/min] | | | 4600 | 4800 |
| | Pressurised | [l/min] | | | 4100 | – |
| Grid dimension | [mm] | 43 | 56 | 71 | 82 | |
| Pneumatic connection on sub-base | 1, 2, 3, 4, 5 | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{3}{4}$ | |
| | 12, 14 | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{8}$ | G $\frac{1}{8}$ | |
| Product weight | [g] | 320 | 825 | 910 | 2000 | |
| Noise level | [dB (A)] | 85 | | | | |

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

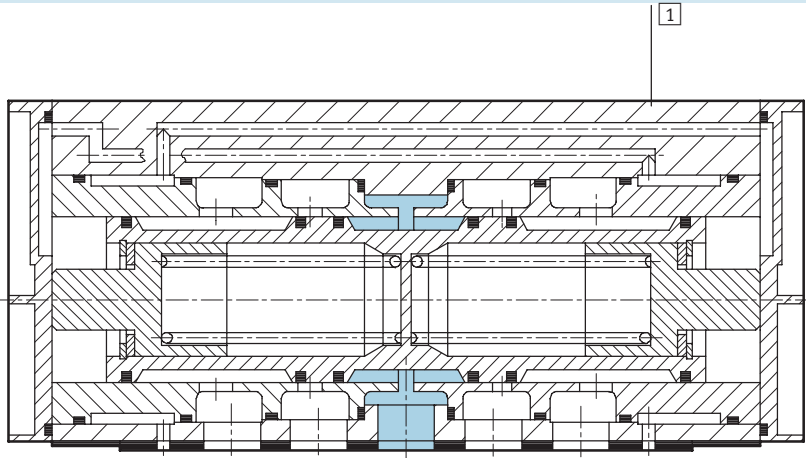
| Valve response times | | | | | | | | |
|----------------------|----|-----|----|-----|----|-----|----|-----|
| ISO size | 1 | | 2 | | 3 | | 4 | |
| | On | Off | On | Off | On | Off | On | Off |
| Closed | 7 | 45 | 15 | 56 | 17 | 61 | 40 | 130 |
| Exhausted | 7 | 45 | 16 | 59 | 18 | 63 | 40 | 130 |
| Pressurised | 7 | 45 | 15 | 57 | 16 | 60 | – | – |

Pneumatic valves VL, ISO 5599-1

Technical data – 5/3-way valves

Materials

Sectional view (ISO size 4)

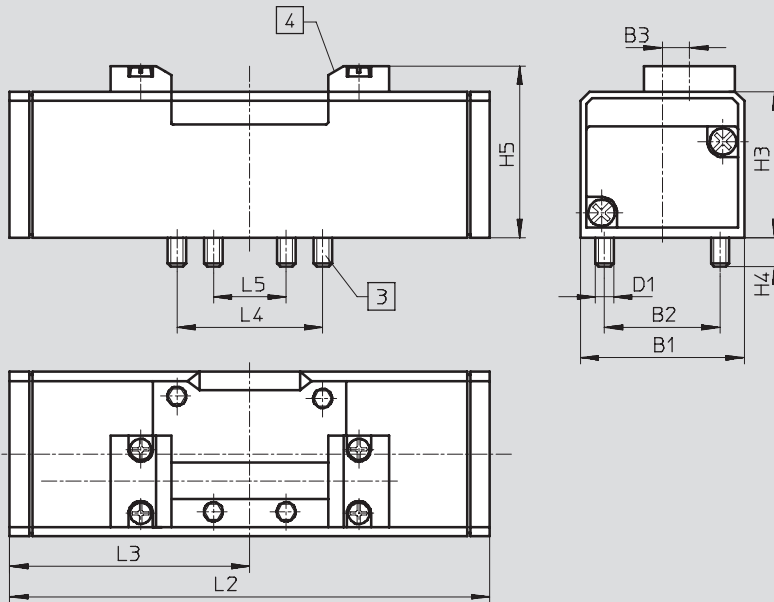


| | | |
|-----------|---------------------------------|--|
| ISO size | 1, 2, 3 | 4 |
| 1 Housing | Die-cast aluminium, polyacetate | Anodised aluminium, brass, polyurethane |
| - Seals | Nitrile rubber | Nitrile rubber, polytetrafluoroethylene carbon |

Dimensions

Download CAD data → www.festo.com

ISO size 1, 2 and 3



- 3 Captive mounting screws
- 4 Slot for inscription label

| ISO size | B1 | B2 | B3 | D1 | H3 | H4 | H5 | L2 | L3 | L4 | L5 |
|----------|----|----|----|----|----|-----|------|-------|------|----|----|
| 1 | 42 | 28 | 6 | M5 | 38 | 9 | 46.5 | 108.4 | 54.2 | 36 | 18 |
| 2 | 54 | 38 | 9 | M6 | 48 | 9.5 | 56.5 | 158 | 79 | 48 | 24 |
| 3 | 65 | 48 | 12 | M8 | 55 | 12 | 63.5 | 184 | 92 | 64 | 32 |

Pneumatic valves VL, ISO 5599-1

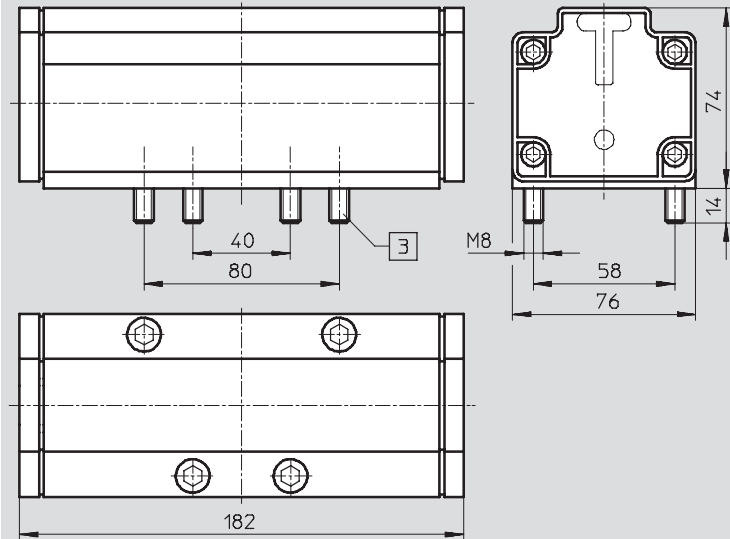
Technical data – 5/3-way valves

FESTO

Dimensions

Download CAD data → www.festo.com

ISO size 4



3 Captive mounting screws

Ordering data

| Circuit symbol | Description | ISO size | Part No. | Type |
|----------------|---|----------|----------|---------------|
| | Normally closed, mechanical reset | 1 | 151 010 | VL-5/3G-D-1-C |
| | | 2 | 151 848 | VL-5/3G-D-2-C |
| | | 3 | 151 867 | VL-5/3G-D-3-C |
| | | 4 | 12 463 | VL-5/3G-¾-D-4 |
| | Normally exhausted, mechanical reset | 1 | 151 011 | VL-5/3E-D-1-C |
| | | 2 | 151 849 | VL-5/3E-D-2-C |
| | | 3 | 151 868 | VL-5/3E-D-3-C |
| | | 4 | 12 464 | VL-5/3E-¾-D-4 |
| | Normally pressurised, mechanical reset | 1 | 151 012 | VL-5/3B-D-1-C |
| | | 2 | 151 850 | VL-5/3B-D-2-C |
| | | 3 | 151 869 | VL-5/3B-D-3-C |

Solenoid/pneumatic valves, ISO 5599-1

FESTO

Accessories

Individual sub-base

NAS

Lateral ports

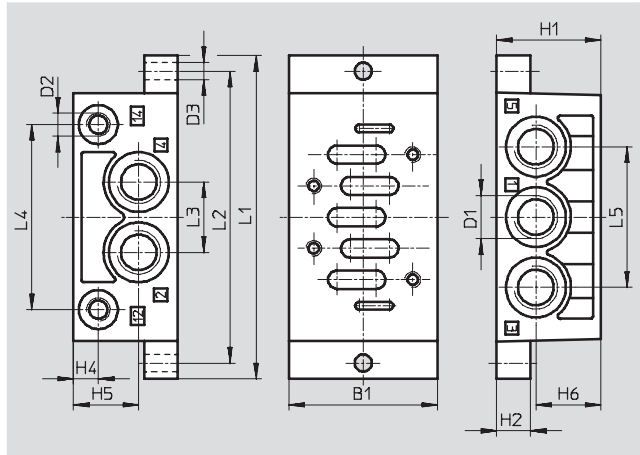
Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Dimensions and ordering data | | | | | | | | | | | | | | | | | |
|------------------------------|----|-----------------|-----------------|---------|----|----|----|------|------|-----|-----|----|-----|----|---------------|----------|--|
| ISO size | B1 | D1 | D2 | D3 Ø | H1 | H2 | H4 | H5 | H6 | L1 | L2 | L3 | L4 | L5 | Weight [g] | Part No. | Type |
| 1 | 48 | G $\frac{1}{4}$ | G $\frac{1}{8}$ | 5.5 | 32 | 10 | 9 | 20.3 | 20.3 | 110 | 98 | 23 | 60 | 46 | 190 | 9 484 | NAS- $\frac{1}{4}$ -1A-ISO ¹⁾ |
| 2 | 57 | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 6.6 | 40 | 13 | 9 | 25 | 25 | 124 | 112 | 27 | 71 | 54 | 300 | 11 310 | NAS- $\frac{3}{8}$ -2A-ISO ¹⁾ |
| 3 | 71 | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 6.6 | 32 | 18 | 9 | 16 | 16 | 149 | 136 | 32 | 91 | 64 | 360 | 10 336 | NAS $\frac{1}{2}$ -3A-ISO ¹⁾ |
| 4 | 85 | G $\frac{3}{4}$ | G $\frac{1}{8}$ | 9 | 42 | 19 | 9 | 21 | 21 | 186 | 170 | 42 | 111 | 84 | 1260 | 152 813 | NAS- $\frac{3}{4}$ -4A-ISO |

1) Free of copper, PTFE and silicone

- | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

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

- | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Solenoid/pneumatic valves, ISO 5599-1

Accessories

Individual sub-base

NAU

Ports underneath

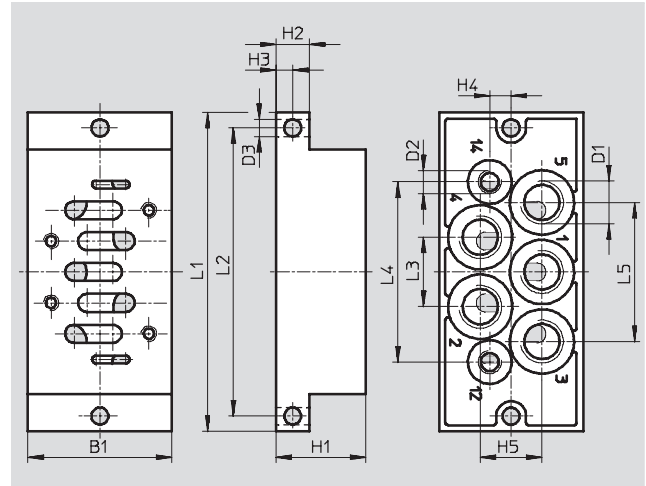
Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Dimensions and ordering data | | | | | | | | | | | | | | | | | |
|------------------------------|----|-----------------|-----------------|---------|----|----|-----|-----|----|-----|-----|----|------|----|---------------|----------|--|
| ISO size | B1 | D1 | D2 | D3 Ø | H1 | H2 | H3 | H4 | H5 | L1 | L2 | L3 | L4 | L5 | Weight [g] | Part No. | Type |
| 1 | 46 | G $\frac{1}{4}$ | G $\frac{1}{8}$ | 5.5 | 30 | 10 | 5 | 7.5 | 20 | 110 | 98 | 23 | 60.7 | 46 | 280 | 9 485 | NAU- $\frac{1}{4}$ -1B-ISO ¹⁾ |
| 2 | 56 | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 6.6 | 35 | 13 | 6.5 | 8.3 | 24 | 124 | 112 | 27 | 70 | 54 | 450 | 11 416 | NAU- $\frac{3}{8}$ -2B-ISO ¹⁾ |
| 3 | 71 | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 6.6 | 32 | 18 | 9 | 10 | 30 | 149 | 136 | 32 | 90 | 66 | 660 | 10 337 | NAU $\frac{1}{2}$ -3B-ISO ¹⁾ |
| 4 | 85 | G $\frac{3}{4}$ | G $\frac{1}{8}$ | 9 | 28 | 19 | 9.5 | 12 | 37 | 186 | 170 | 42 | 111 | 84 | 1080 | 152 814 | NAU- $\frac{3}{4}$ -4B-ISO |

1) Free of copper, PTFE and silicone

-||- Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

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

-||- Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO

Manifold sub-base NAV

Ports underneath

Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Ordering data | | | | | |
|---------------|----------------------|-----------------|------------|----------|----------------------------|
| ISO size | Pneumatic connection | | Weight [g] | Part No. | Type |
| | 1, 2, 3, 4, 5 | 12, 14 | | | |
| 1 | G $\frac{1}{4}$ | G $\frac{1}{8}$ | 240 | 10 173 | NAV- $\frac{1}{4}$ -1C-ISO |
| 2 | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 400 | 11 305 | NAV- $\frac{3}{8}$ -2C-ISO |
| 3 | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 700 | 10 175 | NAV- $\frac{1}{2}$ -3C-ISO |
| 4 | G $\frac{3}{4}$ | G $\frac{1}{8}$ | 1400 | 11 139 | NAV- $\frac{3}{4}$ -4C-ISO |

Dimensions → 93

· | · Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Angle connection block NAW

Ports at side and underneath

Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Ordering data | | | | | |
|---------------|----------------------|-----------------|------------|----------|--|
| ISO size | Pneumatic connection | | Weight [g] | Part No. | Type |
| | 1, 2, 3, 4, 5 | 12, 14 | | | |
| 1 | G $\frac{1}{4}$ | G $\frac{1}{8}$ | 360 | 11 304 | NAW- $\frac{1}{4}$ -1E-ISO ¹⁾ |
| 2 | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 600 | 11 307 | NAW- $\frac{3}{8}$ -2E-ISO ¹⁾ |
| 3 | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 920 | 11 309 | NAW- $\frac{1}{2}$ -3E-ISO ¹⁾ |
| 4 | G $\frac{3}{4}$ | G $\frac{1}{8}$ | 1550 | 11 141 | NAW- $\frac{3}{4}$ -4E-ISO |

Dimensions → 93

1) Free of copper, PTFE and silicone

· | · Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Solenoid/pneumatic valves, ISO 5599-1

Accessories

Manifold sub-base for angle connection NAVW

Ports at side and underneath

Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Ordering data | | | | | |
|---------------|----------------------|-----------------|------------|----------|----------------------------|
| ISO size | Pneumatic connection | | Weight [g] | Part No. | Type |
| | 1, 2, 3, 4, 5 | 12, 14 | | | |
| 1 | G $\frac{1}{4}$ | G $\frac{1}{8}$ | 320 | 152 789 | NAVW- $\frac{1}{4}$ -1-ISO |
| 2 | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 550 | 152 790 | NAVW- $\frac{3}{8}$ -2-ISO |
| 3 | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 1020 | 152 791 | NAVW- $\frac{1}{2}$ -3-ISO |

Dimensions → 93

· | · Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

End plate kit NEV

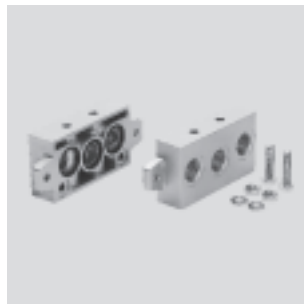
Material:

Size 1, 2, 3

Die-cast aluminium

Size 4

Anodised aluminium



| Ordering data | | | | | |
|---------------|----------------------|--------|------------|----------|------------------------------|
| ISO size | Pneumatic connection | | Weight [g] | Part No. | Type |
| | 1, 2, 3, 4, 5 | 12, 14 | | | |
| 1 | G $\frac{3}{8}$ | – | 280 | 10 174 | NEV-1DA/DB-ISO ¹⁾ |
| 2 | G $\frac{1}{2}$ | – | 450 | 11 306 | NEV-2DA/DB-ISO ¹⁾ |
| 3 | G1 | – | 760 | 10 176 | NEV-3DA/DB-ISO ¹⁾ |
| 4 | G1 | – | 1390 | 11 140 | NEV-4DA/DB-ISO |

Dimensions → 93

1) Free of copper, PTFE and silicone

· | · Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO

Blanking plate NDV

Material:
Size 1, 2, 3
Steel

Size 4
Wrought aluminium alloy

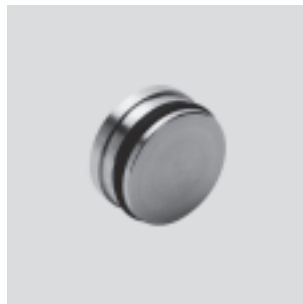


| Ordering data | | | | |
|---------------|------------|----------|-----------|--|
| ISO size | Weight [g] | Part No. | Type | |
| 1 | 113 | 9 489 | NDV-1-ISO | |
| 2 | 166 | 11 308 | NDV-2-ISO | |
| 3 | 314 | 10 340 | NDV-3-ISO | |
| 4 | 1480 | 11 142 | NDV-4-ISO | |

Dimensions → 93

Isolating disc NSC

Material:
Wrought aluminium alloy



| Ordering data | | | | | |
|---------------|----------------------|--------|------------|----------|-----------------------------|
| ISO size | Pneumatic connection | | Weight [g] | Part No. | Type |
| | 1, 2, 3 | 12, 14 | | | |
| 1 | 1/4 | – | 6 | 11 550 | NSC-1/4-1-ISO ¹⁾ |
| 2 | 3/8 | – | 9.2 | 11 908 | NSC-3/8-2-ISO ¹⁾ |
| 3 | 1/2 | – | 20 | 11 551 | NSC-1/2-3-ISO ¹⁾ |
| 4 | 3/4 | – | 24 | 11 699 | NSC-3/4-4-ISO |

Dimensions → 93

1) Free of copper, PTFE and silicone

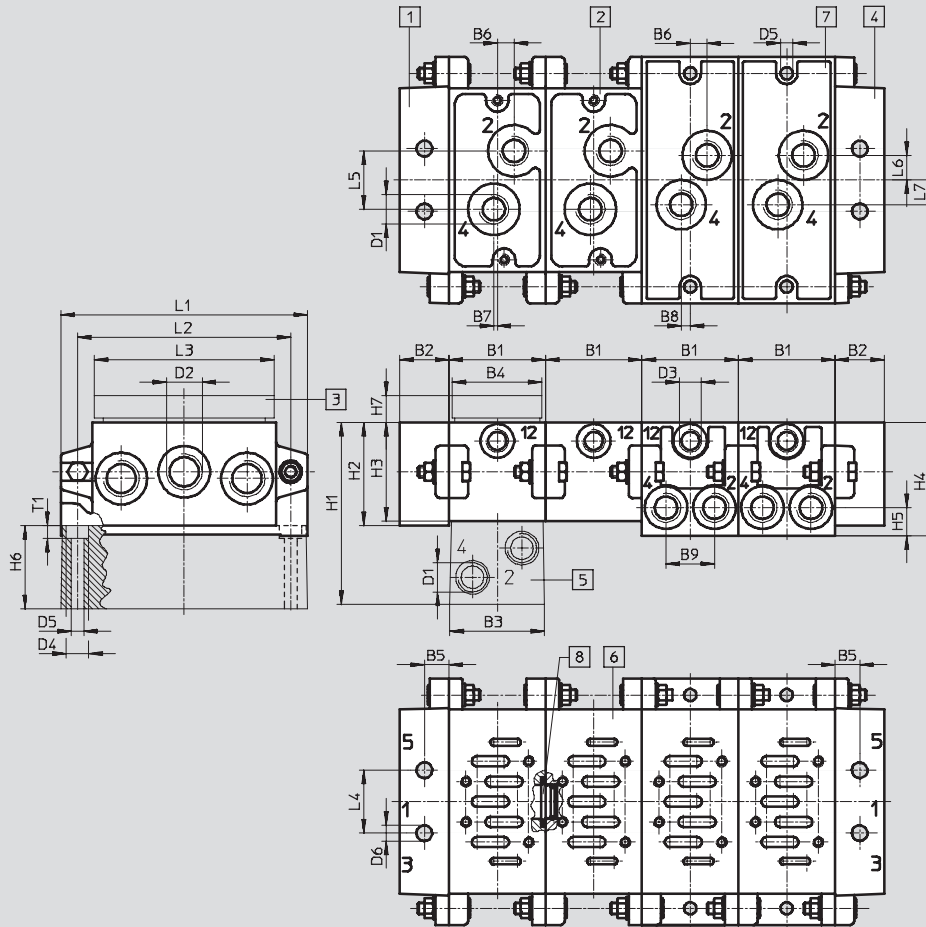
Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO

Dimensions – Manifold mounting

Download CAD data → www.festo.com



- | | | | | | | | |
|---|-----------------------|---|----------------------------|---|---|---|--------------------|
| 1 | Left-hand end plate | 4 | Right-hand end plate | 6 | Port pattern to ISO 5599-1 | 8 | Isolating disc NSC |
| 2 | Manifold sub-base NAV | 5 | Angle connection block NAW | 7 | Manifold sub-base for angle connection NAVW | | |
| 3 | Blanking plate NDV | | | | | | |

| ISO size | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | D1 | D2 | D3 | D4 | D5 | D6 |
|----------|----|----|----|----|----|-----|-----|----|------|-----------------|-----------------|-----------------|----|-----|----|
| 1 | 43 | 22 | 42 | 40 | 11 | 7.5 | 1.5 | 4 | 21.6 | G $\frac{1}{4}$ | G $\frac{3}{8}$ | G $\frac{1}{8}$ | 10 | 5.5 | 7 |
| 2 | 56 | 26 | 55 | 50 | 13 | 6 | 5 | 6 | 27 | G $\frac{3}{8}$ | G $\frac{1}{2}$ | G $\frac{1}{8}$ | 11 | 6.6 | 9 |
| 3 | 71 | 30 | 70 | 70 | 15 | 8 | 6 | 6 | 35.5 | G $\frac{1}{2}$ | G1 | G $\frac{1}{8}$ | 15 | 9 | 12 |
| 4 | 82 | 30 | 80 | 80 | 15 | 9 | 8 | - | - | G $\frac{3}{4}$ | G1 | G $\frac{1}{8}$ | 15 | 9 | 12 |

| ISO size | H1 | H2 | H3 | H4 | H5 | H6 | H7 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | T1 |
|----------|-----|----|----|------|------|----|----|-----|-----|-----|----|----|----|----|-----|
| 1 | 81 | 46 | 44 | 50.5 | 12.5 | 37 | 5 | 110 | 95 | 80 | 28 | 26 | 11 | 11 | 5.7 |
| 2 | 85 | 47 | 45 | 60 | 15 | 40 | 5 | 135 | 115 | 96 | 35 | 30 | 15 | 14 | 6.8 |
| 3 | 99 | 56 | 54 | 66 | 17.5 | 45 | 5 | 190 | 168 | 120 | 52 | 38 | 19 | 19 | 9 |
| 4 | 120 | 58 | 55 | - | - | 65 | 5 | 215 | 184 | - | 56 | 52 | - | - | 9 |

- | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

Solenoid/pneumatic valves, ISO 5599-1

Accessories

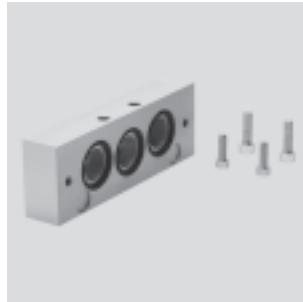
FESTO

Intermediate plate NZV

for connecting manifold sub-bases of different sizes

Material:

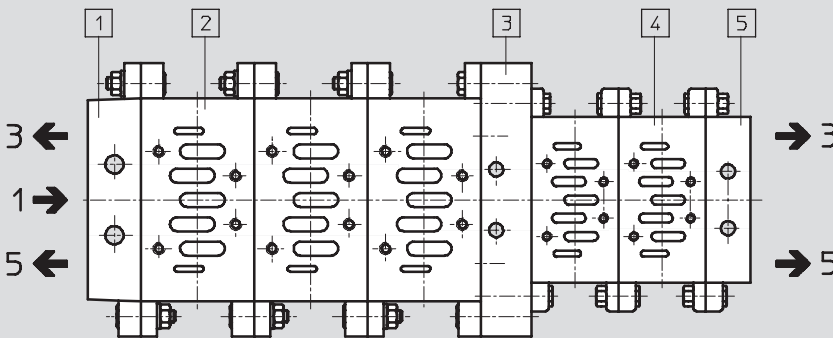
Die-cast aluminium, anodised
Free of copper, PTFE and silicone



Dimensions

Download CAD data → www.festo.com

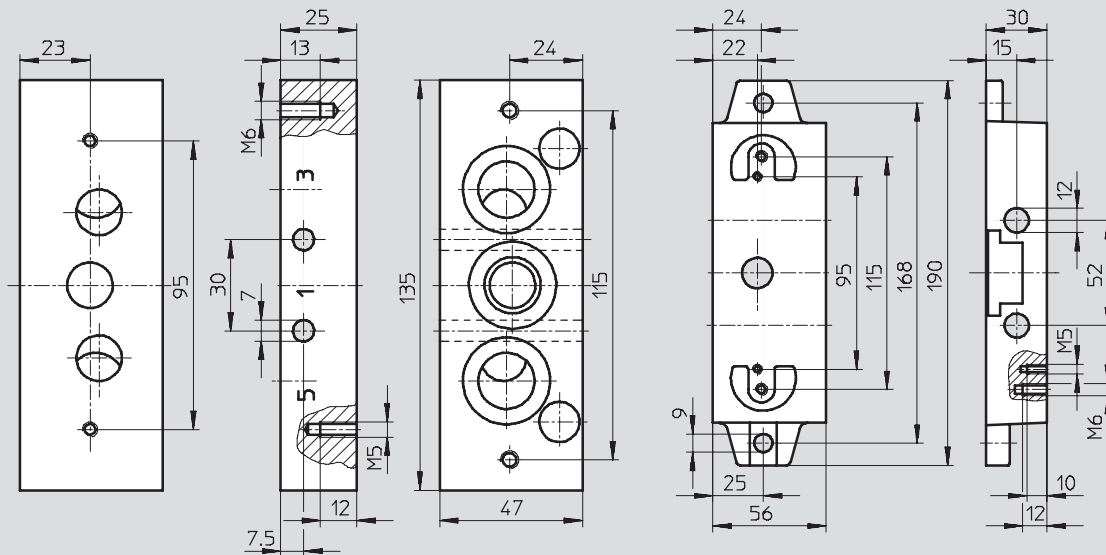
Intermediate plates NZV – ISO size 1, 2, 3



- 1 Left-hand end plate
ISO size 2
- 2 Manifold sub-base
ISO size 2
- 3 Intermediate plate
NZV-1-2
- 4 Manifold sub-base
ISO size 1
- 5 Right-hand end plate
ISO size 1

NZV-1-2

NZV-3-2/1



Ordering data

| Weight [g] | Part No. | Type |
|---|----------|-----------|
| For manifold sub-bases ISO size 1 and 2 | | |
| 393 | 164 940 | NZV-1-2 |
| For manifold sub-bases ISO size 1 and 3 or size 2 and 3 | | |
| 473 | 12 911 | NZV-3-2/1 |

Solenoid/pneumatic valves, ISO 5599-1

Accessories

Throttle plates GRO

Exhaust air restrictor for 3 and 5

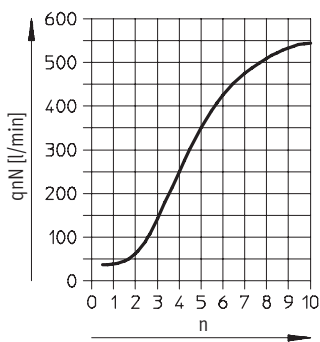
Material:

Anodised aluminium, brass

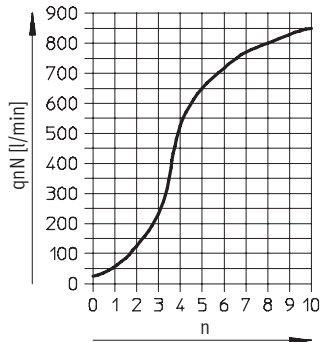


Standard nominal flow rate q_{nN} as a function of the turns n of the adjusting screw

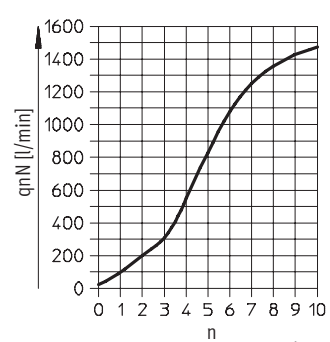
GRO-ZP-1-ISO-B



GRO-ZP-2-ISO-B

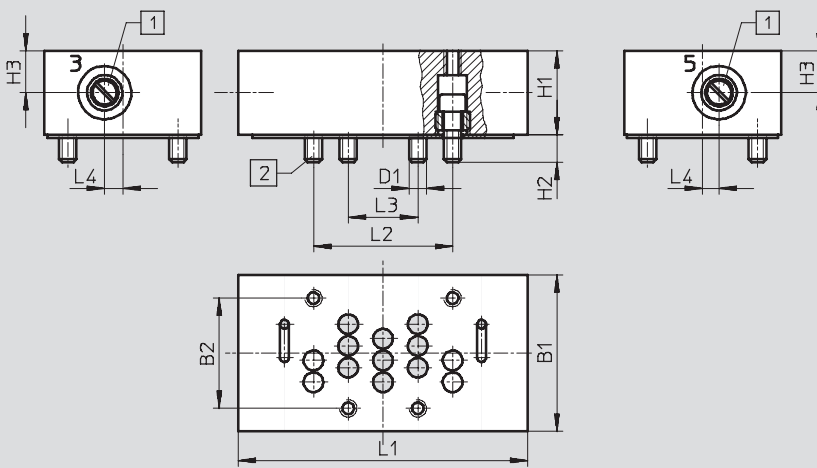


GRO-ZP-3-ISO-B



Dimensions

Download CAD data → www.festo.com



- 1 Regulating screw for restrictor
- 2 Captive mounting screws

Dimensions and ordering data

| ISO size | D1 | B1 | B2 | H1 | H2 | H3 | L1 | L2 | L3 | L4 | Weight [g] | Part No. | Type |
|----------|----|----|----|----|-----|------|-----|----|----|-----|------------|----------|----------------|
| 1 | M5 | 42 | 28 | 25 | 6.5 | 12.5 | 77 | 36 | 18 | 6 | 230 | 151 705 | GRO-ZP-1-ISO-B |
| 2 | M6 | 54 | 38 | 29 | 9.5 | 14.5 | 100 | 48 | 24 | 6.3 | 440 | 151 706 | GRO-ZP-2-ISO-B |
| 3 | M8 | 70 | 48 | 33 | 12 | 16.5 | 132 | 64 | 32 | 7 | 850 | 151 707 | GRO-ZP-3-ISO-B |

Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO

Intermediate pressure regulator plate LR-ZP

Material:
Housing:
Die-cast aluminium, steel
Seals:
Nitrile rubber



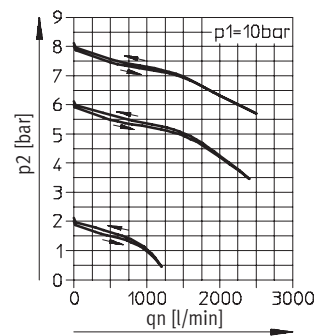
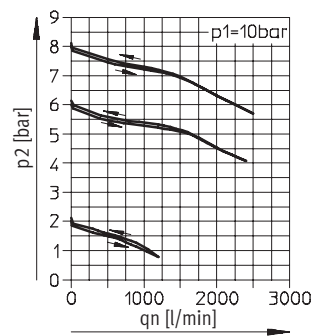
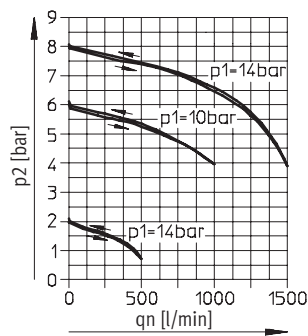
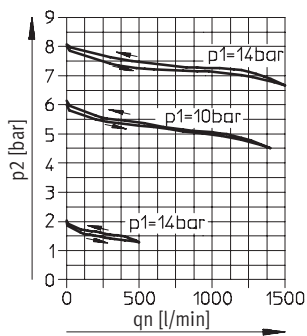
Flow rate q_n as a function of the output pressure p_2

LR-ZP-A-D-1, LR-ZP-B-1,
LR-ZP-A/B-1

LR-ZP-P-D-1

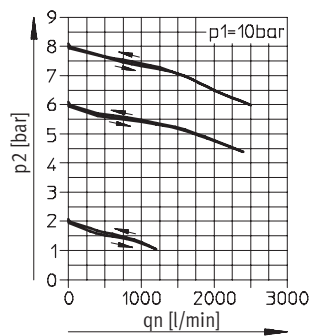
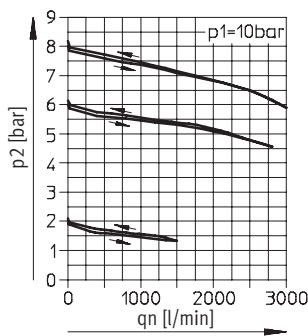
LR-ZP-A-D-2, LR-ZP-B-2,
LR-ZP-A/B-2

LR-ZP-P-D-2



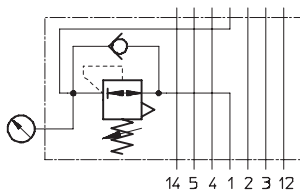
LR-ZP-A-D-3, LR-ZP-B-3,
LR-ZP-A/B-3

LR-ZP-P-D-3

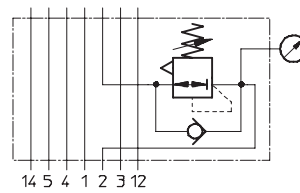


Pressure regulation

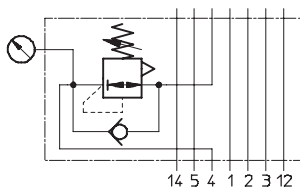
Port 1 regulated



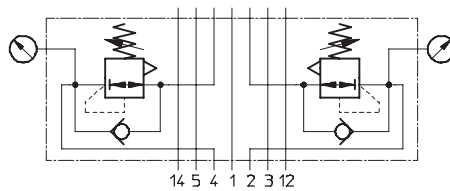
Port 2 regulated



Port 4 regulated



Ports 2 and 4 regulated



Solenoid/pneumatic valves, ISO 5599-1

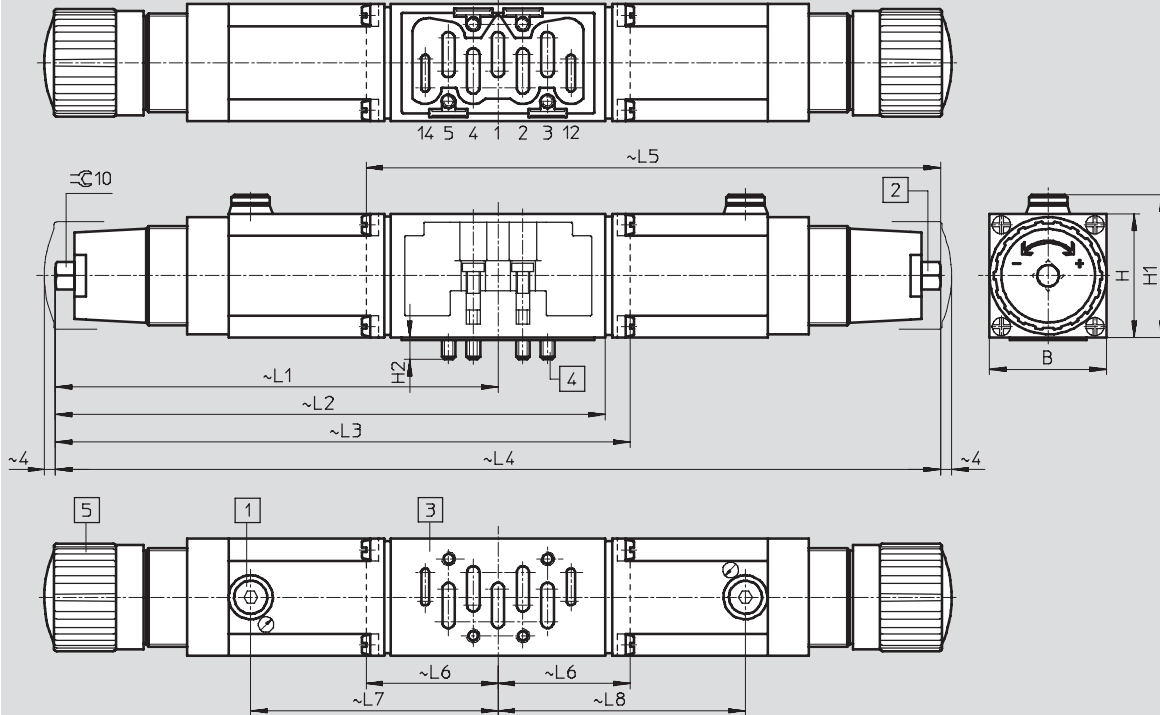
Accessories

FESTO

Dimensions

Download CAD data → www.festo.com

Intermediate pressure regulator plates LR-ZP – ISO size 1, 2, 3



- | | | |
|-------------------------------------|---|-------------------|
| 1 Pressure gauge connection G1/8 | 3 Port pattern to ISO 5599-1 4 Captive mounting screws | 5 Regulating knob |
| 2 Regulating screw | | |

Solenoid/pneumatic valves, ISO 5599-1

FESTO

Accessories

| Dimensions and ordering data | | | | | | | | | | | | | | | | | | | | |
|------------------------------|------|----|------|----|-------|-----|-----|-----|----|----|-------|-------|------------|----------|---------------|--------------------------------|---------|------------------------------|------------------------------|------------------------------|
| Regulated port | B | H | H1 | H2 | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 | Weight [g] | Part No. | Type | | | | | |
| ISO size 1 | | | | | | | | | | | | | | | | | | | | |
| 1 | 42.6 | 45 | 52 | 8 | 161 | - | 209 | - | - | 48 | 90 | - | 520 | 35 966 | LR-ZP-P-D-1 | | | | | |
| | | | | | | | | | | | | | | | | | 165 859 | LR-ZP-P-D-1-CT ¹⁾ | | |
| 2 | | | | | | | | | | | | 209 | 48 | - | 90 | 520 | 35 424 | LR-ZP-B-D-1 | | |
| | | | | | | | | | | | | | | | | | | 165 856 | LR-ZP-B-D-1-CT ¹⁾ | |
| 4 | | | | | 161 | - | - | 322 | - | - | 90 | 90 | 520 | 35 969 | LR-ZP-A-D-1 | | | | | |
| | | | | | | | | | | | | | | | 165 850 | LR-ZP-A-D-1-CT ¹⁾ | | | | |
| 2, 4 | | | | | 161 | 200 | - | - | - | - | 90 | - | 840 | 35 427 | LR-ZP-A/B-D-1 | | | | | |
| | | | | | | | | | | | | | | | 165 853 | LR-ZP-A/B-D-1-CT ¹⁾ | | | | |
| ISO size 2 | | | | | | | | | | | | | | | | | | | | |
| 1 | 54 | 58 | 62.5 | 10 | 188 | - | 247 | - | - | - | 105.5 | - | 960 | 35 967 | LR-ZP-P-D-2 | | | | | |
| | | | | | | | | | | | | | | | | | | 165 860 | LR-ZP-P-D-2-CT ¹⁾ | |
| 2 | | | | | | | | | - | - | - | - | 247 | 59 | - | 105.5 | 960 | 35 425 | LR-ZP-B-D-2 | |
| | | | | | | | | | | | | | | | | | | | 165 857 | LR-ZP-B-D-2-CT ¹⁾ |
| 4 | | | | | 188 | - | - | 376 | - | - | 105.5 | 105.5 | 960 | 35 970 | LR-ZP-A-D-2 | | | | | |
| | | | | | | | | | | | | | | | 165 851 | LR-ZP-A-D-2-CT ¹⁾ | | | | |
| 2, 4 | | | | | 188 | 233 | - | - | - | - | 105.5 | - | 1490 | 35 428 | LR-ZP-A/B-D-2 | | | | | |
| | | | | | | | | | | | | | | | 165 854 | LR-ZP-A/B-D-2-CT ¹⁾ | | | | |
| ISO size 3 | | | | | | | | | | | | | | | | | | | | |
| 1 | 70 | 63 | 65 | 14 | 201.5 | - | 274 | - | - | - | 119 | - | 1220 | 35 968 | LR-ZP-P-D-3 | | | | | |
| | | | | | | | | | | | | | | | | | | | 165 861 | LR-ZP-P-D-3-CT ¹⁾ |
| 2 | | | | | | | | | | | - | - | - | 274 | 72.5 | - | 119 | 1220 | 35 426 | LR-ZP-B-D-3 |
| | | | | | | | | | | | | | | | | | | | | 165 858 |
| 4 | | | | | | - | - | 403 | - | - | 119 | 119 | 1220 | 35 971 | LR-ZP-A-D-3 | | | | | |
| | | | | | | | | | | | | | | | 165 852 | LR-ZP-A-D-3-CT ¹⁾ | | | | |
| 2, 4 | | | | | | 260 | - | - | - | - | 119 | - | 1770 | 35 429 | LR-ZP-A/B-D-3 | | | | | |
| | | | | | | | | | | | | | | | 165 855 | LR-ZP-A/B-D-3-CT ¹⁾ | | | | |

1) Free of copper, PTFE and silicone

- | - Note: This product conforms with the ISO 1179-1 standard and the ISO 228-1 standard.

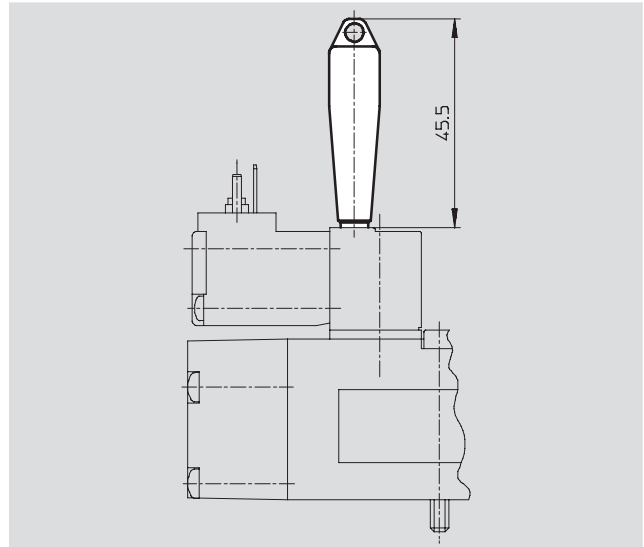
| Ordering data – Pressure gauge for intermediate pressure regulator plates LR-ZP | | |
|---|------------|----------------------|
| ISO size | Weight [g] | Part No. Type |
| 1, 2, 3 | 64.5 | 345 395 MA-40-16-1/8 |

Solenoid/pneumatic valves, ISO 5599-1

Accessories

Manual override tool AHB

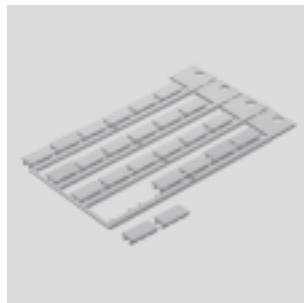
Material:
Polymer



| Ordering data | | | |
|---------------|------------|----------|--------------|
| For valve | Weight [g] | Part No. | Type |
| MEBH | 5 | 157 601 | AHB-MEB |
| MN1H/MFH | 10 | 157 651 | AHB-MD/MF/MV |

Inscription labels IBS-9x17

Material:
Polymer





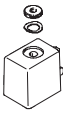

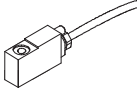
| Ordering data | | |
|--|----------|----------|
| | Part No. | Type |
| Inscription label for valves (24 in frames included in scope of delivery) | 161 937 | IBS-9x17 |

Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO



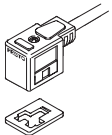
| Ordering data | | Part No. | Type |
|---|--|----------|------------|
| Push-in fittings QS | | | |
|  | | → | quick star |
| Silencers | | | |
|  | | → | u |

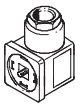
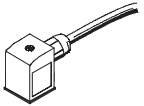
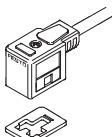
| Ordering data – Solenoid coils | | | |
|---|--|------------------|---------------------------------------|
| | Voltage | Cable length [m] | Part No. Type |
| F solenoid coils for valves MFH, JMFH | | | Technical data → Internet: msfg, msfw |
|  | 12 V DC | – | 34 410 MSFG-12DC-OD |
| | 24 V DC and 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 |
| N1 solenoid coils for valves MN1H, JMN1H | | | Technical data → Internet: msn1g |
|  | 24 V DC | – | 123 060 MSN1G-24DC-OD |
| | 12 V DC and 24 V AC, 50 ... 60 Hz | – | 170 152 MSN1W-24AC/12DC-OD |
| | 110 V AC, 50 ... 60 Hz | – | 123 061 MSN1W-110AC-OD |
| | 230 V AC, 50 ... 60 Hz | – | 123 062 MSN1W-230AC-OD |
| F solenoid coils for valves MFH, JMFH – Explosion-proof to EN 50 028 | | | Technical data → Internet: msfg, msfw |
|  | 24 V DC | 1 | 535 619 MSFG-24DC-EX |
| | 24 V DC | 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 |

Solenoid/pneumatic valves, ISO 5599-1

Accessories

FESTO



| 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 → Internet: mssd |
|  | – | – | – | 34 431 | MSSD-F |
| | – | – | – | 59 710 | MSSD-F-M16 |
| Plug socket without cable with insulation displacement technology | | | | | Technical data → Internet: mssd |
|  | – | – | – | 192 746 | MSSD-F-S-M16 |
| Plug socket with cable | | | | | Technical data → Internet: kmf-1 |
|  | 24 V DC | 2.5 | ■ | 30 935 | KMF-1-24DC-2,5-LED |
| | 24 V DC | 5 | ■ | 30 937 | KMF-1-24DC-5-LED |
| | 24 V DC | 10 | ■ | 193 458 | KMF-1-24DC-10-LED |
| | Up to 240 V | 2.5 | – | 30 936 | KMF-1-230AC-2,5 |
| | Up to 240 V | 5 | – | 30 938 | KMF-1-230AC-5 |



| Ordering data – Plug sockets, plug sockets with cable for N1 and D solenoid coils | | | | | |
|---|-------------|------------------|-----------------------------------|----------------|---------------------------------|
| | Voltage | Cable length [m] | Switching status display with LED | Part No. | Type |
| Plug socket without cable | | | | | Technical data → Internet: mssd |
|  | – | – | – | 34 583 | MSSD-C |
| | – | – | – | 539 709 | MSSD-C-M16 |
| Plug socket without cable with insulation displacement technology | | | | | Technical data → Internet: mssd |
|  | – | – | – | 192 748 | MSSD-C-S-M16 |
| Plug socket with cable | | | | | Technical data → Internet: kmc |
|  | 24 V DC | 2.5 | ■ | 30 931 | KMC-1-24DC-2,5-LED |
| | 24 V DC | 5 | ■ | 30 933 | KMC-1-24DC-5-LED |
| | 24 V DC | 10 | ■ | 193 459 | KMC-1-24DC-10-LED |
| | Up to 230 V | 2.5 | – | 30 932 | KMC-1-230AC-2,5 |
| | Up to 230 V | 5 | – | 30 934 | KMC-1-230AC-5 |

Solenoid/pneumatic valves, ISO 5599-1

FESTO

Accessories

| Ordering data – Plug sockets, plug sockets with cable for valves with central plug | | | | |
|--|---------|------------------|-----------------------------------|------------------------------------|
| | Voltage | Cable length [m] | Switching status display with LED | Part No. Type |
| Plug socket without cable | | | | Technical data → Internet: sea-m12 |
|  | – | – | – | 185 498 SEA-M12-4WD-PG7 |
| Plug socket with cable | | | | Technical data → Internet: km-12 |
|  | – | – | – | 185 499 KM-12-M12-GSWD-1-4 |

| Ordering data – Illuminating seal | | | Technical data → Internet: mf-lid | |
|---|----------------|---------------|-----------------------------------|--|
| | Voltage | Part No. | Type | |
| 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 N1 solenoid coils | | | | |
|  | 12 ... 24 V DC | 19 145 | MC-LD-12-24DC | |
| | 230 V DC/V AC | 19 146 | MC-LD-230AC | |