

## On/off valve MS-EE-B

**FESTO**

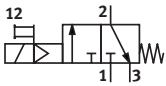


## Characteristics

### At a glance

- Very compact and extremely lightweight series for use close to the process directly in the machine.
- Grid dimension: 40 mm; 62 mm
- With solenoid coil, without plug socket
- Supply voltage: 24 VDC

### Function



- Solenoid actuated on/off valve for pressurising and exhausting pneumatic systems
- Ducted exhaust air is possible via threaded connection at port 3 with silencer
- Detenting and non-detenting manual override

### Pneumatic connection

Individual fittings that are fastened via a female thread

### Pressure gauge alternatives

|       |                                                                                       |
|-------|---------------------------------------------------------------------------------------|
| [AD7] | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |
|-------|---------------------------------------------------------------------------------------|

The optional pressure sensor SDE5 provides immediate information about the current pressure and is just as impressive for detecting compressed air, regulation and vacuum as it is for detecting objects. It can be used wherever simple sensing of the applied pressure is required.

### Special material properties

|       |                                                                                |
|-------|--------------------------------------------------------------------------------|
| [F1A] | Recommended for production plants for manufacturing lithium-ion batteries, F1A |
|-------|--------------------------------------------------------------------------------|

Metals with copper, zinc or nickel as the main component are excluded from use. Exceptions are nickel in steels, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils

### Version

|     |                   |
|-----|-------------------|
| [B] | Second generation |
|-----|-------------------|

Basic component with sturdy and lightweight polymer housing. Fully compatible with the MS series.

## Type code

|     |                        |  |     |                                                                                       |  |
|-----|------------------------|--|-----|---------------------------------------------------------------------------------------|--|
| 001 | Series                 |  | 005 | Supply voltage                                                                        |  |
| MS  | MS series              |  | V24 | 24 V DC (connection pattern to EN 175301)                                             |  |
| 002 | Size                   |  | 006 | Special material properties                                                           |  |
| 4   | Grid dimension 40 mm   |  |     | None                                                                                  |  |
| 6   | Grid dimension 62 mm   |  | F1A | Recommended for production plants for manufacturing lithium-ion batteries, F1A        |  |
| 003 | Function               |  | 007 | Pressure gauge alternatives                                                           |  |
| EE  | On/off valve, electric |  |     | None                                                                                  |  |
| 004 | Pneumatic connection   |  | AD7 | Pressure sensor with switching display, M8 plug, threshold value comparator, PNP, N/O |  |
| 1/4 | Female thread G1/4     |  | 008 | Version                                                                               |  |
| 1/2 | Female thread G1/2     |  | B   | Second generation                                                                     |  |

## Datasheet

## General technical data

|                                   |                                     |       |
|-----------------------------------|-------------------------------------|-------|
| Size                              | 4                                   | 6     |
| Grid dimension                    | 40 mm                               | 62 mm |
| Pneumatic connection, port 1      | G1/4                                | G1/2  |
| Pneumatic connection, port 2      | G1/4                                | G1/2  |
| Pneumatic connection, port 3      | G1/4                                | G1/2  |
| Design                            | Poppet valve, electrically actuated |       |
| lap                               | Underlap                            |       |
| Type of mounting                  | Via wall/surface bracket            |       |
| Mounting position                 | optional                            |       |
| Type of actuation                 | Electric                            |       |
| Valve function                    | 3/2-way, closed, monostable         |       |
| Exhaust-air function              | Without flow control option         |       |
| Manual override                   | Detenting, Non-detenting            |       |
| Type of reset                     | Mechanical spring                   |       |
| Switching position indicator      | With accessories                    |       |
| Signal status display             | With accessories                    |       |
| Type of piloting                  | Pilot actuated                      |       |
| Pilot air supply                  | Internal                            |       |
| Selection of additional functions | With silencer                       |       |

## Electrical data

|                                  |                            |
|----------------------------------|----------------------------|
| Characteristic coil data         | 24 V DC: 2.3 W             |
| Permissible voltage fluctuations | +/- 10%                    |
| Switch-on time                   | 29 ms                      |
| Electrical connection            | Type C<br>To EN 175301-803 |
| Degree of protection             | IP65                       |

## Flow characteristics

|                                                                      |             |              |
|----------------------------------------------------------------------|-------------|--------------|
| Size                                                                 | 4           | 6            |
| Pneumatic connection, port 1                                         | G1/4        | G1/2         |
| Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup>  | 2,000 l/min | 5,000 l/min  |
| Standard nominal flow rate, exhaust 0.6->0 MPa (6->0 bar, 87->0 psi) | 1,600 l/min | 4,000 l/min  |
| C value                                                              | 8.36 l/sbar | 21.33 l/sbar |
| b value                                                              | 0.49        | 0.52         |

1) Measured at p1 = 6 bar and p2 = 5 bar, Δp = 1 bar.

## Operating and environmental conditions

|                                              |                                                                                            |
|----------------------------------------------|--------------------------------------------------------------------------------------------|
| Operating pressure                           | 0.3 ... 0.7 MPa                                                                            |
| Operating pressure                           | 3 ... 7 bar                                                                                |
| Operating pressure                           | 43.5 ... 101.5 psi                                                                         |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]                                                  |
| Note on operating and pilot medium           | Lubricated operation possible (in which case lubricated operation will always be required) |
| Ambient temperature <sup>1)</sup>            | -5 ... 50°C                                                                                |
| Media temperature <sup>2)</sup>              | -5 ... 50°C                                                                                |
| Corrosion resistance class CRC <sup>3)</sup> | 1 - Low corrosion stress                                                                   |

1) With pressure sensor: 0... 50 °C

2) With pressure sensor: 0... 50 °C

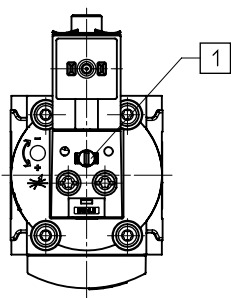
3) More information [www.festo.com/x/topic/kbk](http://www.festo.com/x/topic/kbk)

Datasheet

| Materials              |                                  |
|------------------------|----------------------------------|
| Material housing       | PA-reinforced                    |
| Material seals         | HNBR<br>NBR                      |
| Note on materials      | RoHS-compliant                   |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L                |
| Cleanroom class        | Class 7 according to ISO 14644-1 |

| Additional material specifications – products for battery production (MS...-F1A-B) |                                                                    |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Suitability for the production of Li-ion batteries                                 | Suitable for battery production with reduced Cu/Zn/Ni values (F1a) |

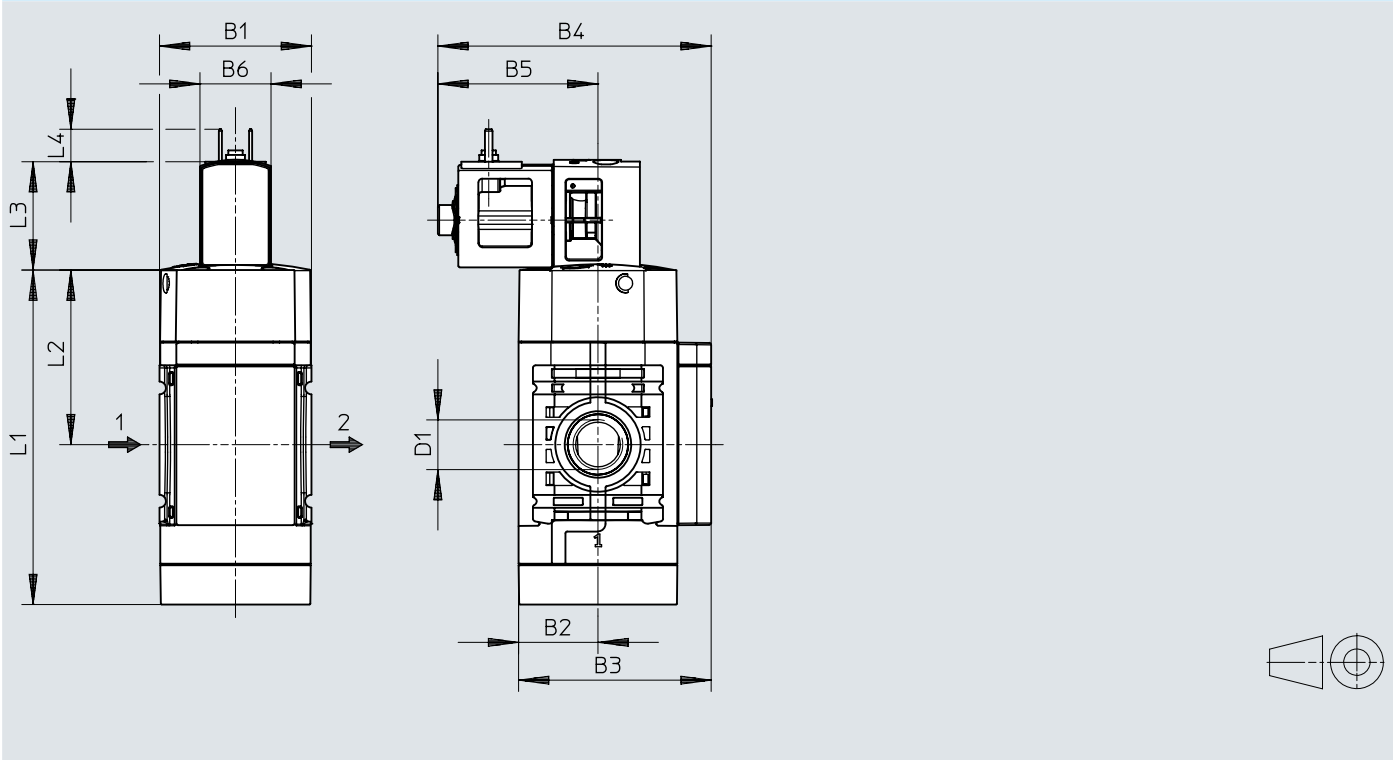
Manual override



[1] Detenting and non-detenting manual override

Dimensions

Dimensions – Basic version Download CAD data [www.festo.com](http://www.festo.com)

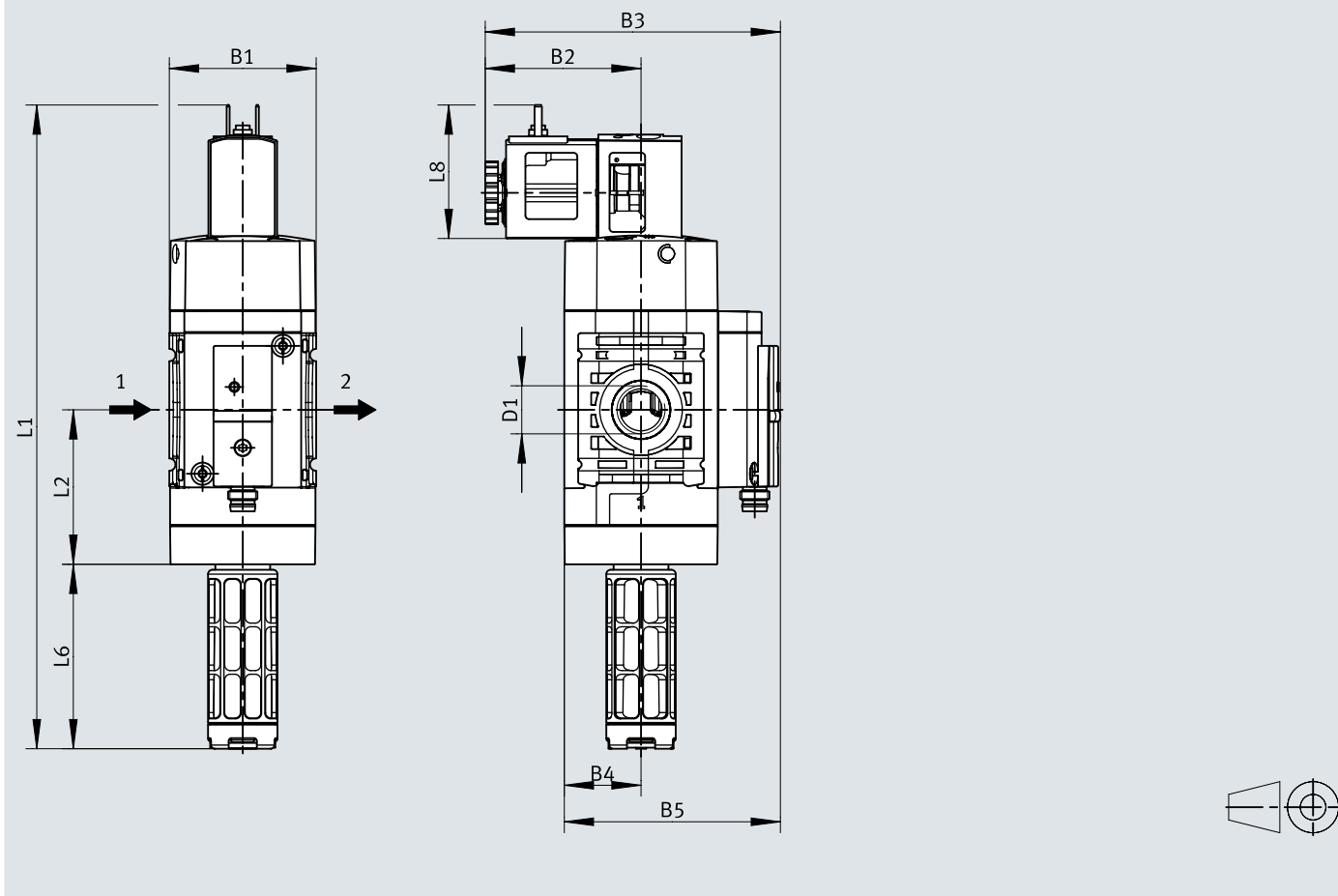


|              | B1   | B2 | B3   | B4   | B5   | B6   | D1   | L1   | L2   | L3   | L4  |
|--------------|------|----|------|------|------|------|------|------|------|------|-----|
| MS4-EE-...-B | 40,2 | 21 | 50,9 | 72,3 | 42,4 | 18,8 | G1/4 | 88,5 | 46,2 | 28,7 | 8,6 |
| MS6-EE-...-B | 62   | 31 | 76   | 87,7 | 42,7 | 18,8 | G1/2 | 140  | 75,5 | 28,2 | 8,6 |

## Dimensions

Dimensions – With pressure sensor SDE5

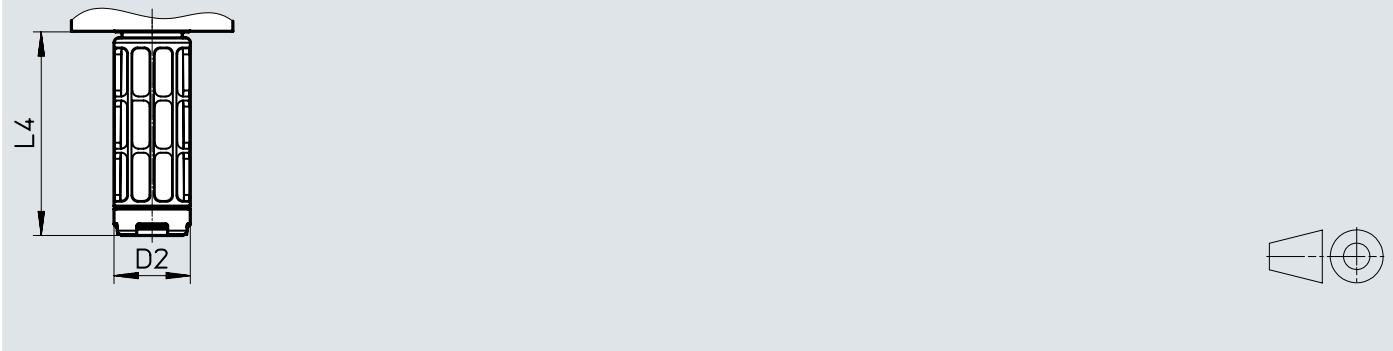
Download CAD data [www.festo.com](http://www.festo.com)



|                         | B1   | B2    | B3    | B4 | B5    | D1   | L1     | L2   | L6   | L8    |
|-------------------------|------|-------|-------|----|-------|------|--------|------|------|-------|
| MS4-EE-1/4-V24-SP-AD7-B | 40,2 | ~42,7 | ~80,8 | 21 | ~59,2 | G1/4 | ~176,3 | 42,3 | 50,5 | ~36,6 |
| MS6-EE-1/2-V24-SP-AD7-B | 62   | ~43   | ~91,3 | 31 | 79,3  | G1/2 | ~256,2 | 64,5 | 79,4 | ~36,8 |

Dimensions

Dimensions – Silencer (accessory) Download CAD data [www.festo.com](http://www.festo.com)

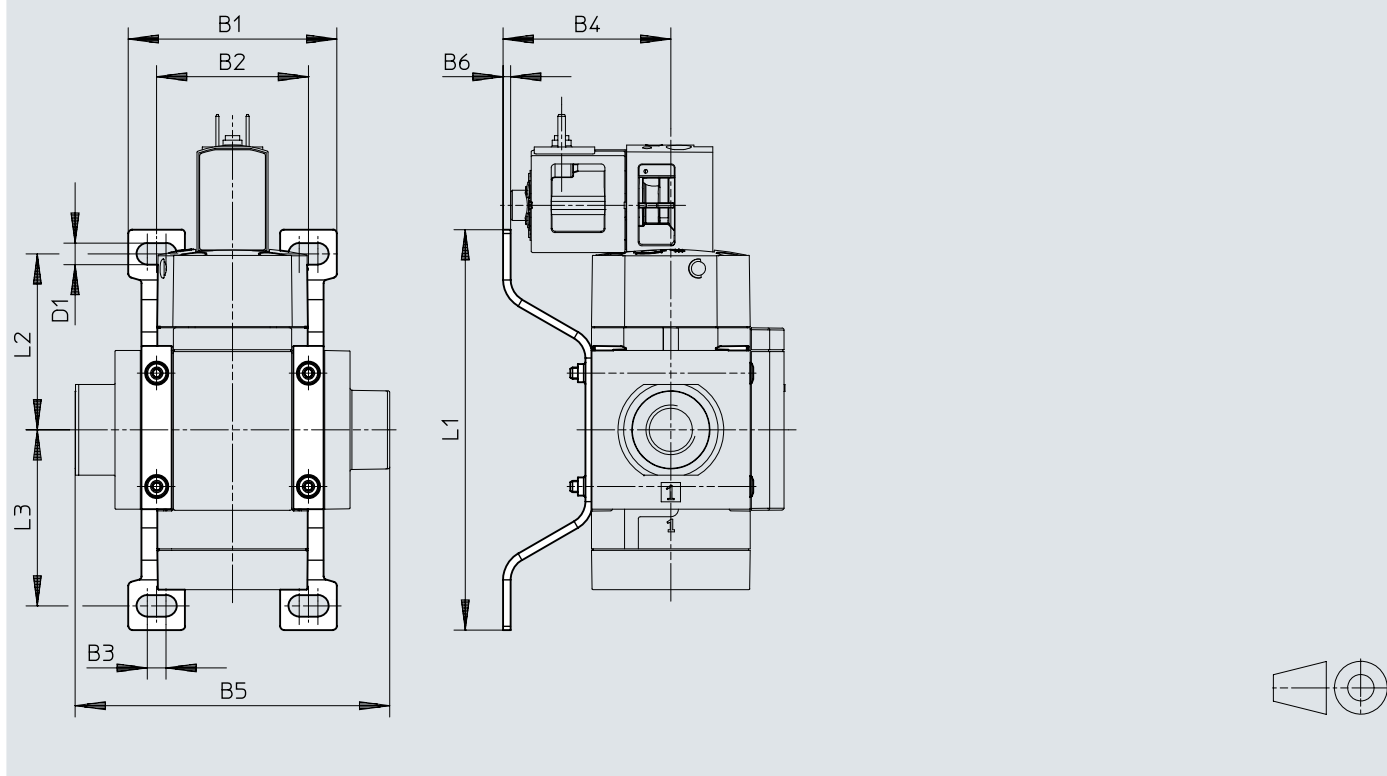


|       | D2<br>Ø | L4  |
|-------|---------|-----|
| U-1/4 | 20      | 55  |
| U-1/2 | 28      | 108 |

## Dimensions

Dimensions – Wall mounting kit MS...-WPE-B (accessories)

Download CAD data [www.festo.com](http://www.festo.com)



|           | B1   | B2   | B3  | B4   | B5    | B6 | D1<br>Ø | L1  | L2   | L3   |
|-----------|------|------|-----|------|-------|----|---------|-----|------|------|
| MS4-WPE-B | 55,2 | 40,2 | 5   | 44,4 | 83,3  | 2  | 5,7     | 106 | 46,6 | 46,6 |
| MS6-WPE-B | 79   | 62   | 4,3 | 53,9 | 114,9 | 2  | 6,5     | 158 | 71   | 71   |

## Ordering data

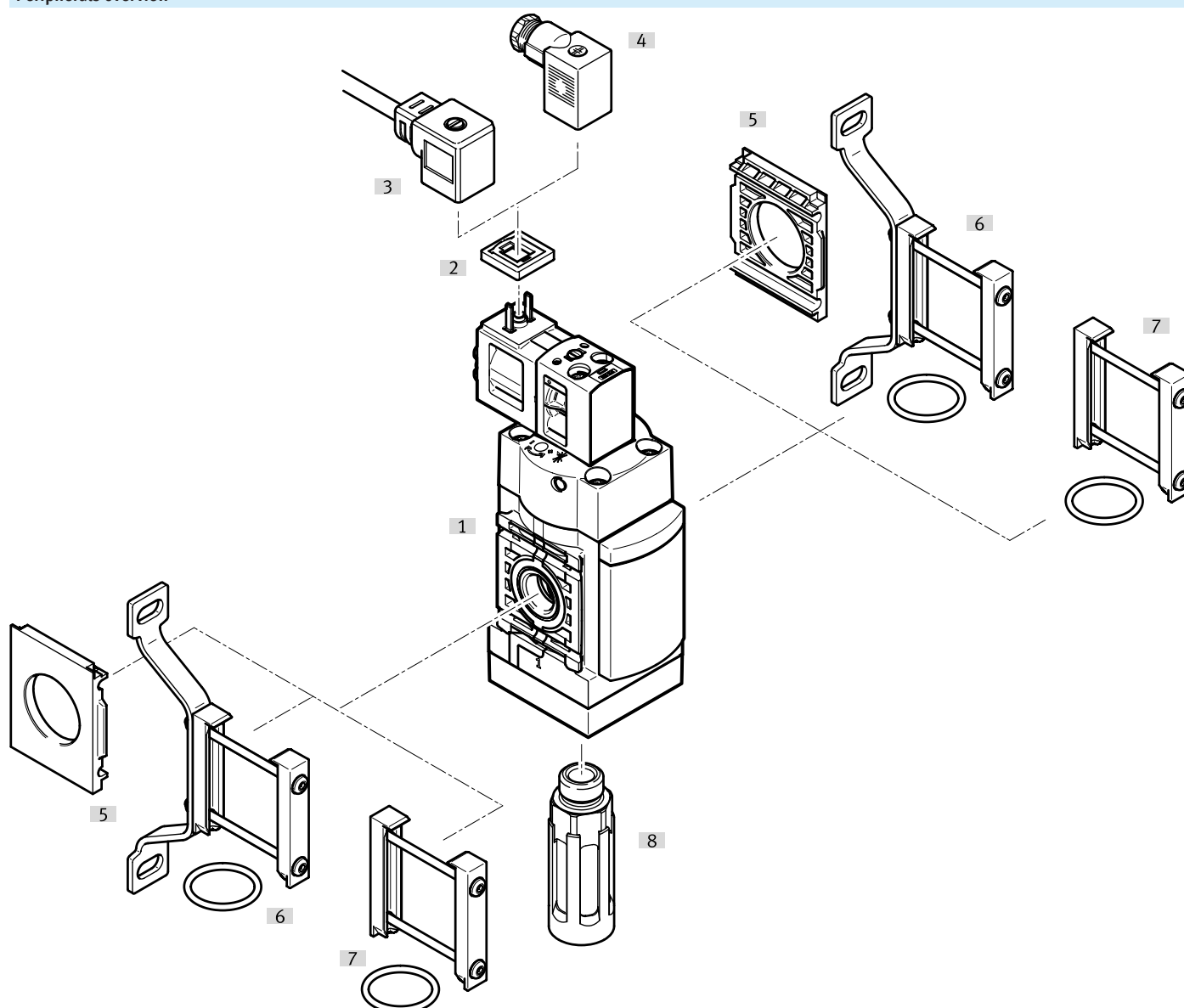
| Ordering data                                                                    |      |                              |                |                |                         |
|----------------------------------------------------------------------------------|------|------------------------------|----------------|----------------|-------------------------|
|                                                                                  | Size | Pneumatic connection, port 1 | Product weight | Part no.       | Type                    |
|  | 4    | G1/4                         | 194 g          | <b>8091771</b> | <b>MS4-EE-1/4-V24-B</b> |
|                                                                                  | 6    | G1/2                         | 490 g          | <b>8091578</b> | <b>MS6-EE-1/2-V24-B</b> |

| Ordering data – Pressure sensor with switching indicator                          |      |                              |                                                       |                |                |                             |
|-----------------------------------------------------------------------------------|------|------------------------------|-------------------------------------------------------|----------------|----------------|-----------------------------|
|                                                                                   | Size | Pneumatic connection, port 1 | Pressure gauge (ANALOG) or Pressure display (DIGITAL) | Product weight | Part no.       | Type                        |
|  | 4    | G1/4                         | With pressure                                         | 194 g          | <b>8201355</b> | <b>MS4-EE-1/4-V24-AD7-B</b> |
|                                                                                   | 6    | G1/2                         | sensor with LCD display                               | 490 g          | <b>8201357</b> | <b>MS6-EE-1/2-V24-AD7-B</b> |

| Ordering data – Products for battery production                                    |      |                              |                |                |                             |
|------------------------------------------------------------------------------------|------|------------------------------|----------------|----------------|-----------------------------|
|                                                                                    | Size | Pneumatic connection, port 1 | Product weight | Part no.       | Type                        |
|  | 4    | G1/4                         | 194 g          | <b>8176512</b> | <b>MS4-EE-1/4-V24-F1A-B</b> |
|                                                                                    | 6    | G1/2                         | 490 g          | <b>8176514</b> | <b>MS6-EE-1/2-V24-F1A-B</b> |

## Peripherals

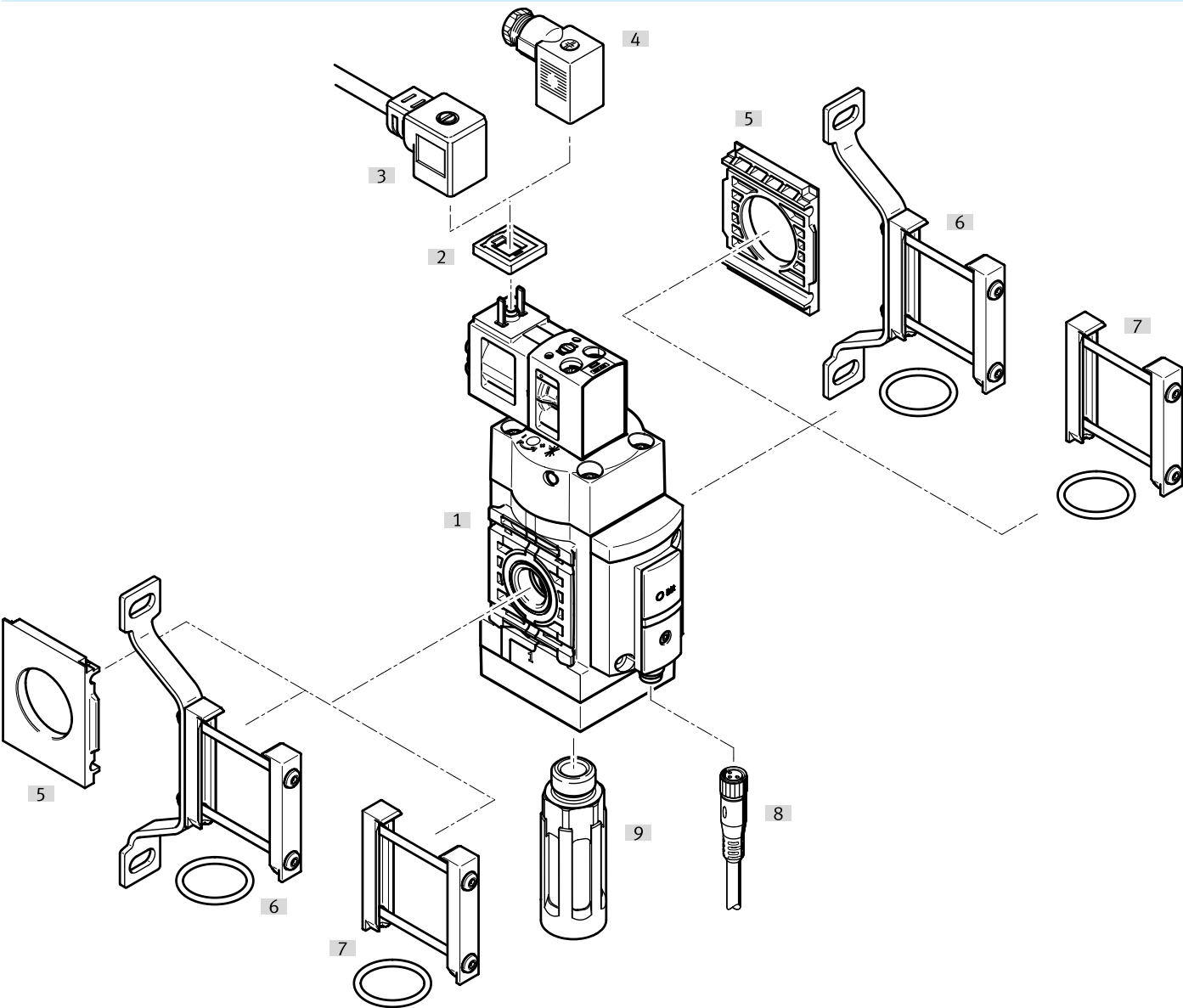
### Peripherals overview



| Accessories                       |                                                                                                         | → Link                  |
|-----------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------|
| Type/order code                   | Description                                                                                             |                         |
| [1] On/off valve MS-EE-B          |                                                                                                         | <a href="#">ms-ee-b</a> |
| [2] Illuminating seal MEB-LD      |                                                                                                         | <a href="#">13</a>      |
| [3] Plug socket with cable KMEB   |                                                                                                         | <a href="#">14</a>      |
| [4] Plug socket MSSD-EB           | For on/off valve MS...-V24P and MS...-V24...-EX2, the plug socket is included in the scope of delivery. | <a href="#">13</a>      |
| [5] Mounting plate MS...-AEND     | Module connector MS4/6-MV [2] or mounting bracket MS4-WP, WPB, WPE, WPM [3] is required for mounting.   | <a href="#">13</a>      |
| [6] Wall mounting kit MS...-WPE-B | Without illustration                                                                                    | <a href="#">13</a>      |
| [7] Module connector MS...-MV1    |                                                                                                         | <a href="#">13</a>      |
| [8] Silencer U                    |                                                                                                         | <a href="#">14</a>      |

Peripherals

Ordering data – Pressure sensor with switching indicator



| Accessories                         |                                                                                                         | → Link                  |
|-------------------------------------|---------------------------------------------------------------------------------------------------------|-------------------------|
| Type/order code                     | Description                                                                                             |                         |
| [1] On/off valve MS-EE-B            |                                                                                                         | <a href="#">ms-ee-b</a> |
| [2] Illuminating seal MEB-LD        |                                                                                                         | <a href="#">13</a>      |
| [3] Plug socket with cable KMEB     |                                                                                                         | <a href="#">14</a>      |
| [4] Plug socket MSSD-EB             | For on/off valve MS...-V24P and MS...-V24...-EX2, the plug socket is included in the scope of delivery. | <a href="#">13</a>      |
| [5] Mounting plate MS...-AEND       | Module connector MS4/6-MV [2] or mounting bracket MS4-WP, WPB, WPE, WPM [3] is required for mounting.   | <a href="#">13</a>      |
| [6] Wall mounting kit MS...-WPE-B   | Without illustration                                                                                    | <a href="#">13</a>      |
| [7] Module connector MS...-MV1      |                                                                                                         | <a href="#">13</a>      |
| [8] Connecting cable NEBA-M8...-LE3 |                                                                                                         | <a href="#">14</a>      |
| [9] Silencer U                      |                                                                                                         | <a href="#">14</a>      |

## Accessories

| Module connector MS...-MV1                                                        |      |                                                    |                |          |             |
|-----------------------------------------------------------------------------------|------|----------------------------------------------------|----------------|----------|-------------|
|                                                                                   | Size | Suitability for the production of Li-ion batteries | Product weight | Part no. | Type        |
|  | 4    |                                                    | 13 g           | 8119201  | MS4-MV1     |
|                                                                                   |      | F1a                                                | 36 g           | 8176695  | MS4-MV1-F1A |
|                                                                                   | 6    |                                                    | 33 g           | 8119204  | MS6-MV1     |
|                                                                                   |      | F1a                                                | 54 g           | 8176697  | MS6-MV1-F1A |

| Wall mounting kit MS...-WPE-B                                                     |      |                |          |           |
|-----------------------------------------------------------------------------------|------|----------------|----------|-----------|
|                                                                                   | Size | Product weight | Part no. | Type      |
|  | 4    | 30 g           | 8118600  | MS4-WPE-B |
|                                                                                   | 6    | 58 g           | 8118599  | MS6-WPE-B |

| Mounting plate MS...-AEND                                                           |      |                |          |           |
|-------------------------------------------------------------------------------------|------|----------------|----------|-----------|
|  | Size | Product weight | Part no. | Type      |
|                                                                                     | 4    | 4 g            | 542966   | MS4-AEND  |
|                                                                                     | 6    | 11.1 g         | 535408   | MS6-AEND1 |

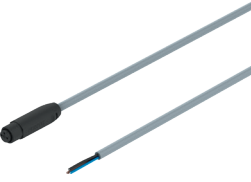
| Plug socket MSSD-EB                                                                 |                                                                                                                     |                                          |                |          |         |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------|----------------|----------|---------|
|                                                                                     | Electrical connection                                                                                               | Type of mounting                         | Product weight | Part no. | Type    |
|  | 3-pin, Socket, Angled socket, Type C, To DIN EN 175301-803, To DIN EN 61984, Square design MSEB, Square design MSN2 | On solenoid valve via M2.5 central screw | 11 g           | 151687   | MSSD-EB |

| Illuminating seal MEB-LD                                                            |                              |                              |                |          |                |
|-------------------------------------------------------------------------------------|------------------------------|------------------------------|----------------|----------|----------------|
|                                                                                     | Operational voltage range DC | Switching position indicator | Product weight | Part no. | Type           |
|  | 12 ... 24 V                  | LED                          | 0.6 g          | 151717   | MEB-LD-12-24DC |

## Accessories

| Silencer U                                                                       |                      |                         |                      |                |          |       |
|----------------------------------------------------------------------------------|----------------------|-------------------------|----------------------|----------------|----------|-------|
|                                                                                  | Pneumatic connection | Flow rate to atmosphere | Sound pressure level | Product weight | Part no. | Type  |
|  | G1/4                 | 3,300 l/min             | 76 dB(A)             | 7.7 g          | 2316     | U-1/4 |
|                                                                                  | G1/2                 | 10,300 l/min            | 82 dB(A)             | 58.2 g         | 2310     | U-1/2 |

| Plug socket with cable KMEB                                                      |                              |                                                      |                       |              |          |                   |
|----------------------------------------------------------------------------------|------------------------------|------------------------------------------------------|-----------------------|--------------|----------|-------------------|
|                                                                                  | Nominal operating voltage DC | Electrical connection 2, number of connections/cores | Signal status display | Cable length | Part no. | Type              |
|  | 24 V                         | 2                                                    |                       | 2.5 m        | 547270   | KMEB-3-24-2.5     |
|                                                                                  |                              |                                                      |                       | 5 m          | 547271   | KMEB-3-24-5       |
|                                                                                  |                              | 3                                                    | Yellow LED            | 2.5 m        | 547268   | KMEB-3-24-2.5-LED |
|                                                                                  |                              |                                                      |                       | 5 m          | 547269   | KMEB-3-24-5-LED   |
|                                                                                  |                              |                                                      |                       | 2.5 m        | 151688   | KMEB-1-24-2.5-LED |
|                                                                                  |                              |                                                      |                       | 5 m          | 151689   | KMEB-1-24-5-LED   |
|                                                                                  |                              |                                                      |                       | 10 m         | 193457   | KMEB-1-24-10-LED  |

| Connecting cable NEBA-M8                                                           |                                           |                                                      |                                       |              |          |                       |
|------------------------------------------------------------------------------------|-------------------------------------------|------------------------------------------------------|---------------------------------------|--------------|----------|-----------------------|
|                                                                                    | Electrical connection 1, connector system | Electrical connection 1, number of connections/cores | Electrical connection 1, cable outlet | Cable length | Part no. | Type                  |
|  | M8x1, A-coded, to EN 61076-2-104          | 3                                                    | Straight                              | 2.5 m        | 8078223  | NEBA-M8G3-U-2.5-N-LE3 |
|                                                                                    |                                           |                                                      |                                       | 5 m          | 8078224  | NEBA-M8G3-U-5-N-LE3   |
|                                                                                    |                                           |                                                      | Angled                                | 2.5 m        | 8078230  | NEBA-M8W3-U-2.5-N-LE3 |
|                                                                                    |                                           |                                                      |                                       | 5 m          | 8078231  | NEBA-M8W3-U-5-N-LE3   |