

## Lubricator MS9-LOE

**FESTO**



## Characteristics

### At a glance

Very compact series for use close to the process directly on the machine

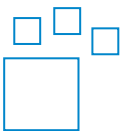
- Grid dimension: 90 mm
- Proportional lubricator with precision oil dosing
- Reduces wear on drive units subject to high loads
- High flow rate performance
- Quick and easy oil top-up even during operation (under pressure)

The following oils are recommended for Festo components (viscosity range to ISO 3448, ISO class VG 32, 32 mm<sup>2</sup>/s (= cSt) at 40 °C):

- Festo special oil OFSW-32 (see accessories)
- Castrol HySpin ZZ 32
- BP Energol HLP 32
- Mobil Nuto H 32
- Mobil DTE 24
- Shell Tellus S2 MA 32

### Ordering data - modular system

Link [ms9-loe](#)



Configurable product

This product and all its product options can be ordered online via the configurator.

### Diagrams

Link [ms9-loe](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

### Function

The proportional lubricator adds a precisely adjustable amount of oil to the compressed air. The pressure drop that occurs when air flows through a Venturi nozzle is used to feed oil from a reservoir to the drip cap. From there, the oil drips into the air duct directly behind the proportional valve, where it is atomised. The amount of oil mist is proportional to the compressed air flow rate.

### Pneumatic connection

### Bowl type

Bowl guard tanks to integrated metal bowl.

### Type of mounting

[WP]

Mounting bracket basic design



- For connecting the modules for wall mounting
- In combination with connecting plate MS9-AG... for mounting an individual device on a wall

[WPM]

Mounting bracket for hooking in service unit components



- For connecting the modules for wall mounting
- Fast hooking and unhooking
- Spacer for maintaining the mounting gap
- Same wall gap for combination with MS6 series using the mounting bracket MS6-WPB

## Characteristics

[WPB]

Mounting bracket for large wall gap



- For connecting the modules for wall mounting
- In combination with connecting plate MS9-AG... for mounting an individual device on a wall
- Same wall distance for mixed combination with series MS12 when using the mounting bracket MS12-WP

### UL certification

Optional device variant UL1, which meets the safety requirements for the Canadian and US markets.

### Flow direction

Available with flow in the opposite direction.

## Type code

| 001  | Series                                             |  |
|------|----------------------------------------------------|--|
| MS   | MS series                                          |  |
| 002  | Size                                               |  |
| 9    | Grid dimension 90 mm                               |  |
| 003  | Function                                           |  |
| LOE  | Compressed air lubricator                          |  |
| 004  | Pneumatic connection                               |  |
| 3/4  | Female thread G3/4                                 |  |
| 1    | Female thread G1                                   |  |
| AGD  | Sub-base G1/2                                      |  |
| AGE  | Sub-base G3/4                                      |  |
| AGF  | Sub-base G1                                        |  |
| AGG  | Connecting plate G1 1/4                            |  |
| AGH  | Connecting plate G1 1/2                            |  |
| AQR  | Sub-base 1/2 NPT                                   |  |
| AQS  | Sub-base 3/4 NPT                                   |  |
| AQT  | Sub-base 1 NPT                                     |  |
| AQU  | Sub-base 1 1/4 NPT                                 |  |
| AQV  | Sub-base 1 1/2 NPT                                 |  |
| F    | Flange/sub-base                                    |  |
| G    | Module without connecting thread, without sub-base |  |
| N3/4 | Female thread 3/4 NPT                              |  |
| N1   | Female thread 1 NPT                                |  |

| 005 | Bowl type                                               |  |
|-----|---------------------------------------------------------|--|
| U   | Aluminium                                               |  |
| 006 | Type of mounting                                        |  |
|     | Without mounting bracket                                |  |
| WP  | Mounting bracket basic design                           |  |
| WPB | Mounting bracket for large wall gap                     |  |
| WPM | Mounting bracket for hooking in service unit components |  |
| 007 | UL certification                                        |  |
|     | None                                                    |  |
| UL1 | cULus ordinary location for Canada and USA              |  |
| 008 | Flow direction                                          |  |
|     | Flow direction from left to right                       |  |
| Z   | Flow direction from right to left                       |  |

# Datasheet

## General technical data



|                                        |                                              |
|----------------------------------------|----------------------------------------------|
| Design                                 | Proportional standard mist lubricator        |
| Type of mounting                       | In-line installation<br>With accessories     |
| Mounting position                      | Vertical +/-5°                               |
| Bowl guard                             | Plastic bowl guard, Integrated as metal bowl |
| Min. flow rate for lubricator function | 100 l/min                                    |
| Max. oil capacity                      | 490 ml                                       |

## Standard nominal flow rate q<sub>N</sub>

|                                                                     |                        |
|---------------------------------------------------------------------|------------------------|
| Standard nominal flow rate (standardised to DIN 1343) <sup>1)</sup> | 8,500 ... 27,000 l/min |
|---------------------------------------------------------------------|------------------------|

1) in main flow direction 1->2; Measured at p<sub>1</sub> = 6 bar and Δp = 1 bar.

## Operating and environmental conditions

|                                              |                                                          |
|----------------------------------------------|----------------------------------------------------------|
| Operating pressure                           | 1 ... 16 bar                                             |
| Operating medium                             | Compressed air to ISO 8573-1:2010 [7:4:4]<br>Inert gases |
| Ambient temperature                          | -10 ... 60°C                                             |
| Media temperature                            | -10 ... 60°C                                             |
| Storage temperature                          | -10 ... 60°C                                             |
| UL certification <sup>1)</sup>               | None, cULus ordinary location for Canada and USA         |
| Corrosion resistance class CRC <sup>2)</sup> | 2 - Moderate corrosion stress                            |

1) More information [www.festo.com/catalogue/ms9-loe](http://www.festo.com/catalogue/ms9-loe) → Support/Downloads.

2) More information [www.festo.com/x/topic/crc](http://www.festo.com/x/topic/crc)

## ATEX

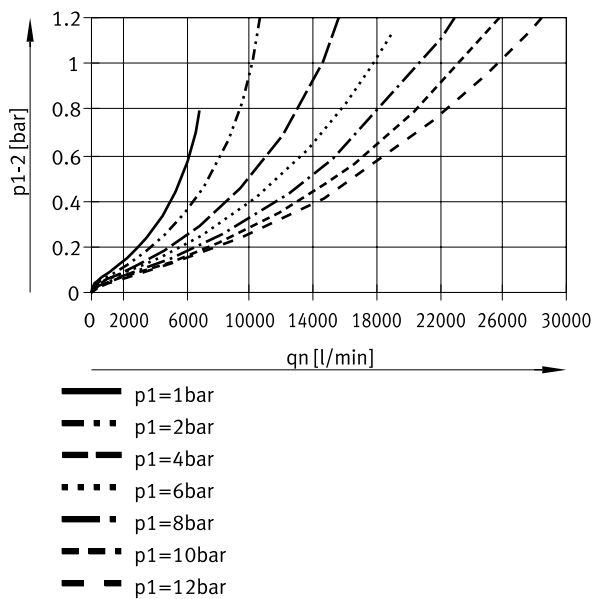
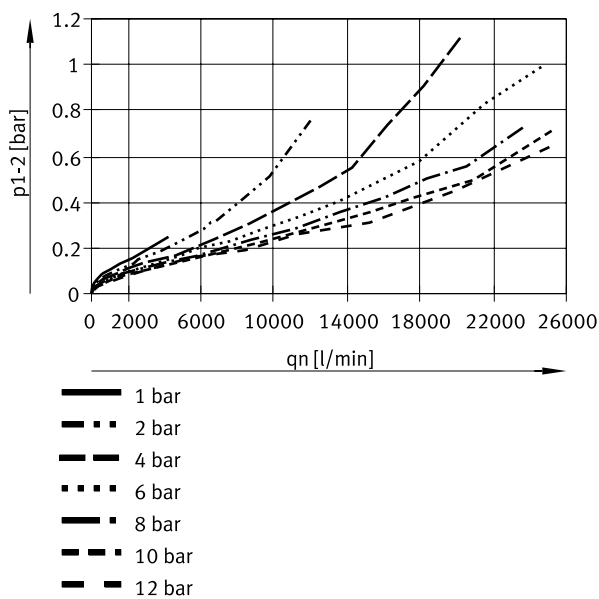
|                                                            |                            |
|------------------------------------------------------------|----------------------------|
| ATEX category gas                                          | II 2G                      |
| Explosion ignition protection type for gas                 | Ex h IIC T6 Gb X           |
| ATEX category dust                                         | II 2D                      |
| Explosion ignition protection type for dust                | Ex h IIIC T60°C Db X       |
| Explosion ambient temperature                              | -10°C ≤ Ta ≤ +60°C         |
| Explosion protection certification outside the EU          | EPL Db (GB)<br>EPL Gb (GB) |
| UKCA marking (see declaration of conformity) <sup>2)</sup> | To UK EX instructions      |

2) More information [www.festo.com/catalogue/ms9-loe](http://www.festo.com/catalogue/ms9-loe) → Support/Downloads.

## Materials

|                        |                         |
|------------------------|-------------------------|
| Bowl type              | Aluminium               |
| Material housing       | Die-cast aluminium      |
| Material bowl          | Wrought aluminium alloy |
| Material seals         | NBR                     |
| Note on materials      | RoHS-compliant          |
| LABS (PWIS) conformity | VDMA24364-B1/B2-L       |

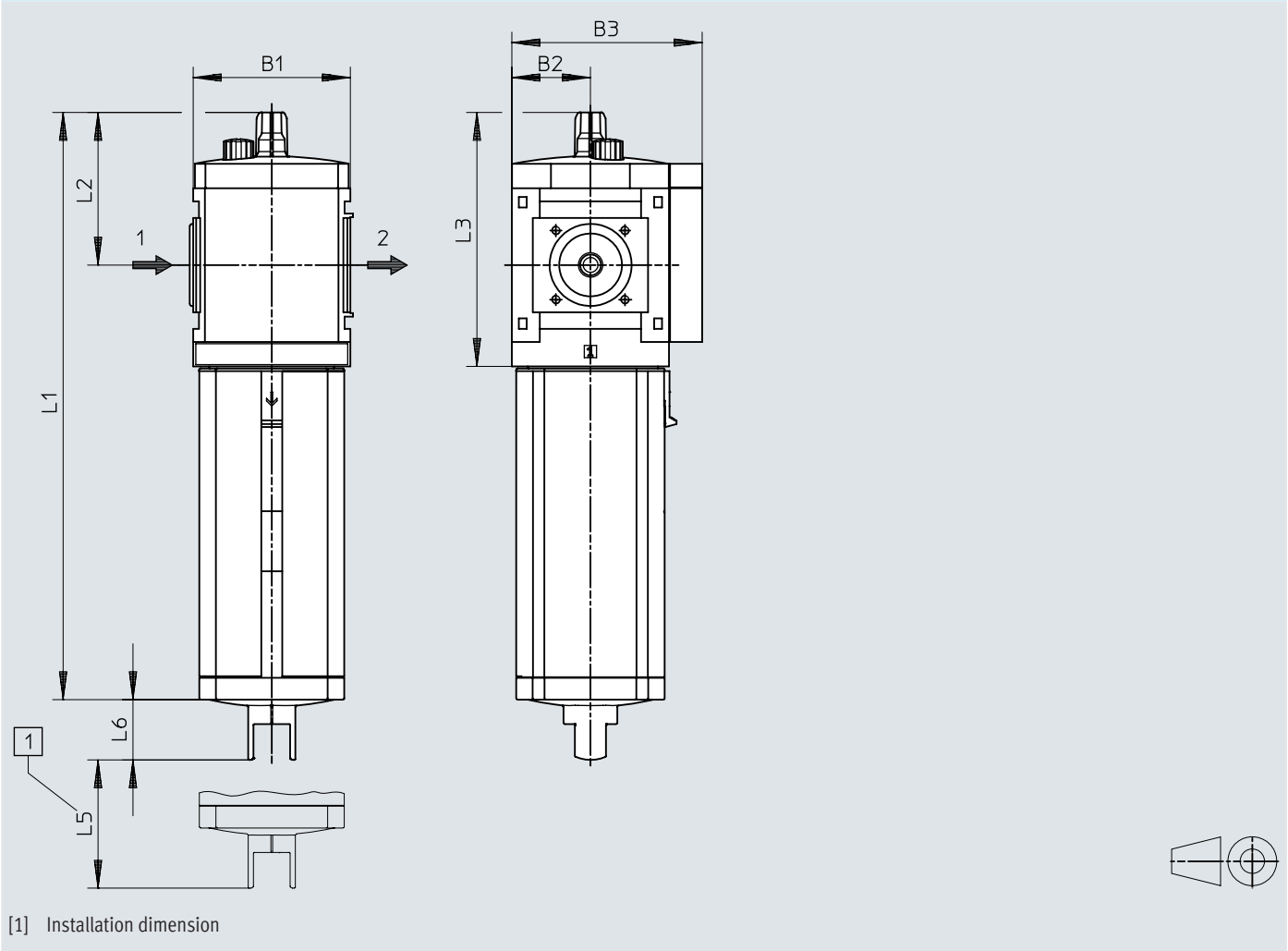
## Datasheet

Standard flow rate  $q_n$  as a function of differential pressure  $p_{1-2}$  (pneumatic connection G3/4, 3/4 NPT)Standard flow rate  $q_n$  as a function of differential pressure  $p_{1-2}$  (pneumatic connection G1, 1 NPT)

Dimensions

Dimensions – Basic type, module without connecting thread, without sub-base

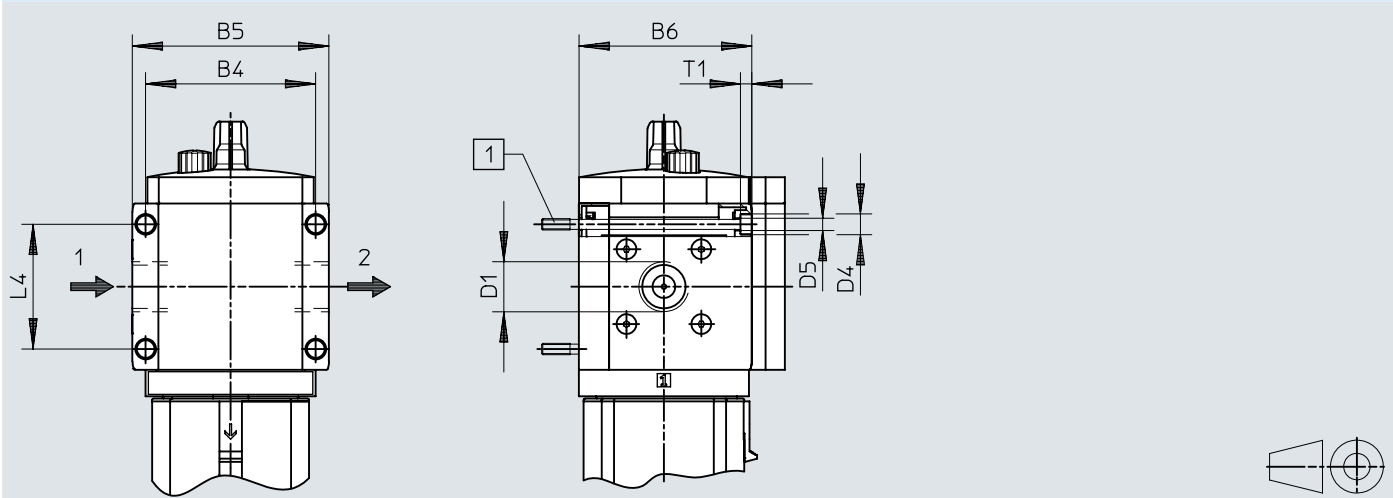
Download CAD data [www.festo.com](http://www.festo.com)



|           | B1 | B2 | B3  | L1    | L2 | L3  | L5<br>min. | L6   |
|-----------|----|----|-----|-------|----|-----|------------|------|
| MS9-LOE-G | 90 | 45 | 109 | 336,3 | 87 | 145 | 225        | 34,5 |

Dimensions

Dimensions – MS9, Female thread Download CAD data [www.festo.com](http://www.festo.com)



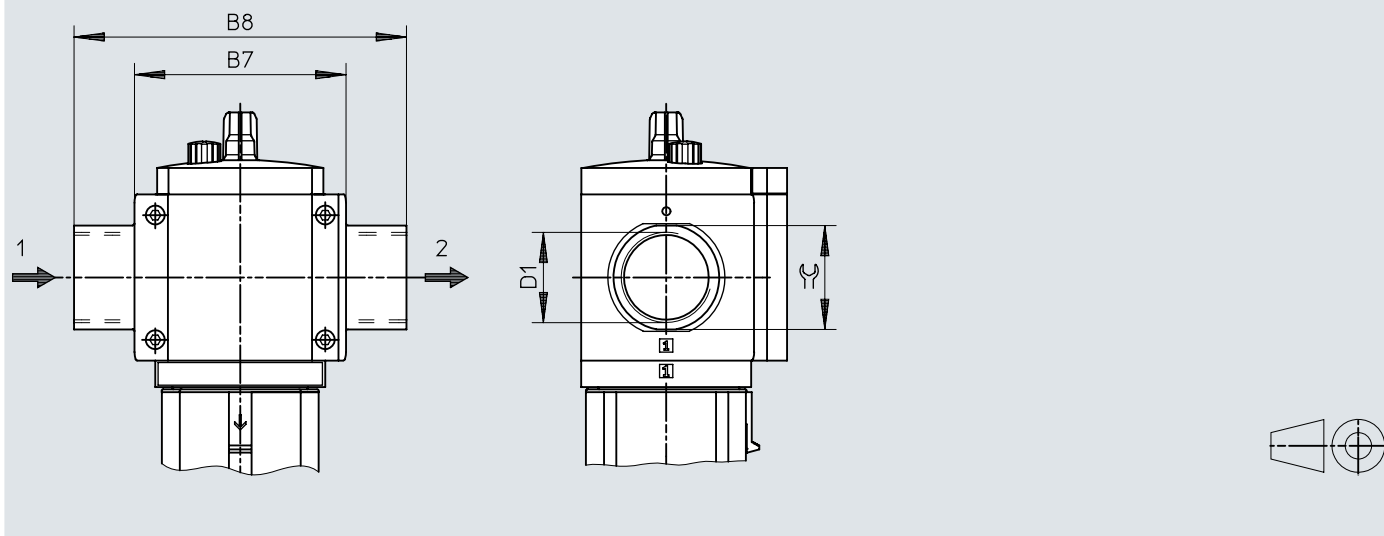
[1] Retaining screw M6xmin.90 according to DIN 912 (not included in the scope of delivery) for wall mounting without mounting bracket

|              | B4 | B5  | B6   | D1      | D4<br>ø | D5<br>ø | L4 | T1 |
|--------------|----|-----|------|---------|---------|---------|----|----|
| MS9-LOE-3/4  | 90 | 104 | 91,5 | G3/4    | 11      | 6,5     | 66 | 6  |
| MS9-LOE-1    |    |     |      | G1      |         |         |    |    |
| MS9-LOE-N3/4 | 90 | 104 | 91,5 | 3/4 NPT | 11      | 6,5     | 66 | 6  |
| MS9-LOE-N1   |    |     |      | 1 NPT   |         |         |    |    |

## Dimensions

Dimensions – MS9, connecting plate

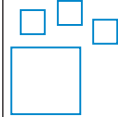
Download CAD data [www.festo.com](http://www.festo.com)



|             | B7  | B8  | D1        | $\sqrt{R_a}$ |
|-------------|-----|-----|-----------|--------------|
| MS9-LOE-AGD | 112 | 132 | G1/2      | 30           |
| MS9-LOE-AGE |     | 132 | G3/4      | 36           |
| MS9-LOE-AGF |     | 142 | G1        | 41           |
| MS9-LOE-AGG |     | 162 | G1 1/4    | 50           |
| MS9-LOE-AGH |     | 176 | G1 1/2    | 55           |
| MS9-LOE-AQR | 112 | 132 | 1/2 NPT   | 30           |
| MS9-LOE-AQS |     | 132 | 3/4 NPT   | 36           |
| MS9-LOE-AQT |     | 142 | 1 NPT     | 41           |
| MS9-LOE-AQU |     | 162 | 1 1/4 NPT | 50           |
| MS9-LOE-AQV |     | 176 | 1 1/2 NPT | 55           |

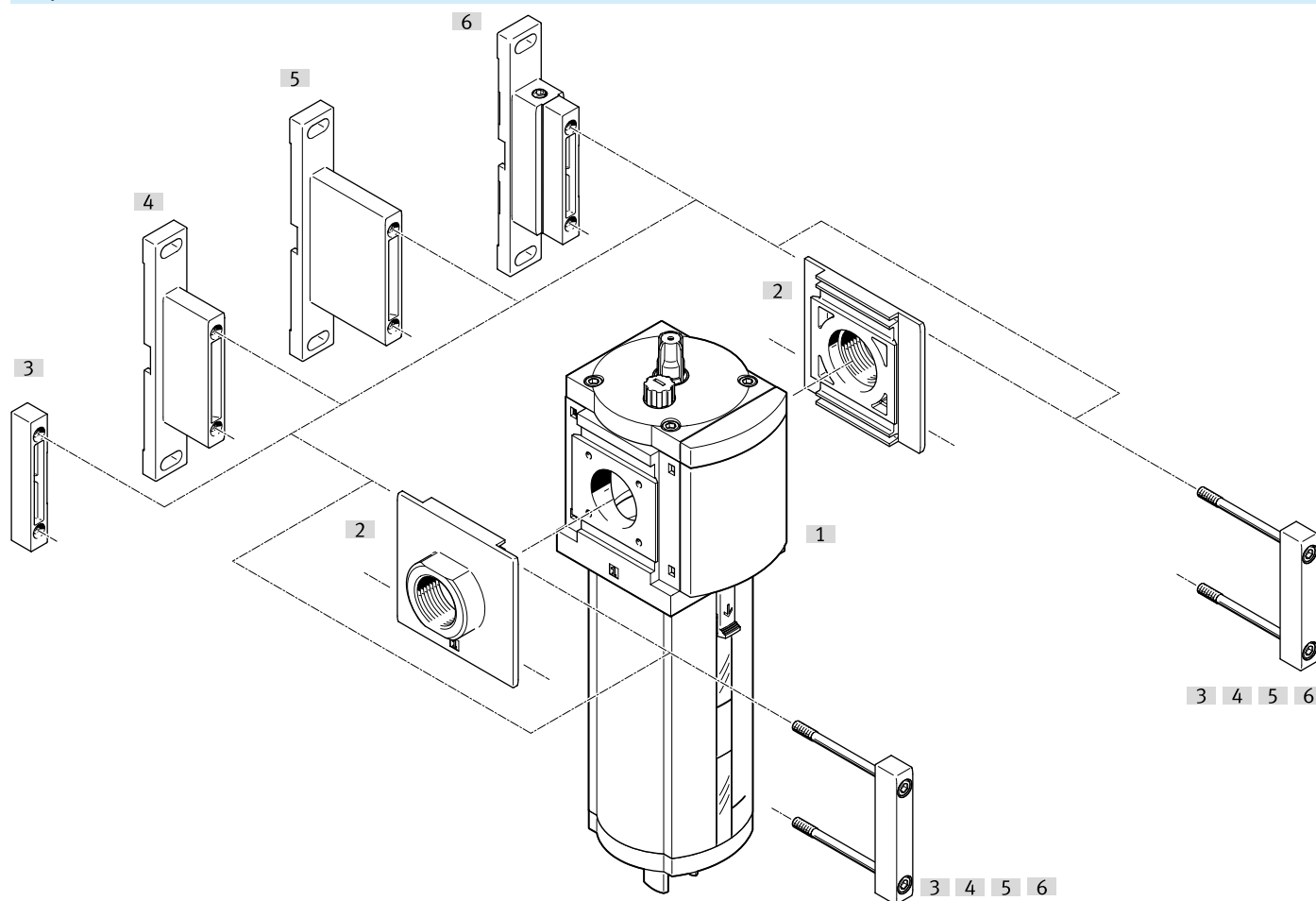
Ordering data

| Ordering data                                                                    |           |                                   |                |          |             |
|----------------------------------------------------------------------------------|-----------|-----------------------------------|----------------|----------|-------------|
|                                                                                  | Bowl type | Flow direction                    | Product weight | Part no. | Type        |
|  | Aluminium | Flow direction from left to right | 2,000 g        | 564144   | MS9-LOE-G-U |

| Ordering data – Modular product system                                           |                 |          |         |
|----------------------------------------------------------------------------------|-----------------|----------|---------|
|                                                                                  | Short type code | Part no. | Type    |
|  | MS9-LOE         | 562533   | MS9-LOE |

## Peripherals

### Peripherals overview



| Accessories                       |                                                                      | → Link                  |
|-----------------------------------|----------------------------------------------------------------------|-------------------------|
| Type/order code                   | Description                                                          |                         |
| [1] Lubricator MS9-LOE            |                                                                      | <a href="#">ms9-loe</a> |
| [2] Connecting plate SET MS9-A... | For device combinations                                              | <a href="#">12</a>      |
| [3] Module connector MS9-MV       | For device combinations and individual devices with connecting plate | <a href="#">12</a>      |
| [4] Mounting bracket MS9-WP       | For individual device                                                | <a href="#">12</a>      |
| [5] Mounting bracket MS9-WPB      | For individual device                                                | <a href="#">12</a>      |
| [6] Mounting bracket MS9-WPM      | For individual device                                                | <a href="#">12</a>      |

## Accessories

| Module connector MS6-MV1                                                         |      |                |          |        |
|----------------------------------------------------------------------------------|------|----------------|----------|--------|
|                                                                                  | Size | Product weight | Part no. | Type   |
|  | 9    | 110 g          | 552950   | MS9-MV |
|                                                                                  |      |                |          |        |

| Mounting bracket MS6-WP...                                                       |      |          |         |  |
|----------------------------------------------------------------------------------|------|----------|---------|--|
|                                                                                  | Size | Part no. | Type    |  |
|  | 9    | 552947   | MS9-WP  |  |
|                                                                                  |      | 552949   | MS9-WPB |  |
|                                                                                  |      | 552948   | MS9-WPM |  |
|                                                                                  |      |          |         |  |

| Connecting plate-SET MS6-AG...                                                      |      |                              |                |          |         |
|-------------------------------------------------------------------------------------|------|------------------------------|----------------|----------|---------|
|                                                                                     | Size | Pneumatic connection, port 1 | Product weight | Part no. | Type    |
|  | 9    | G1/2                         | 300 g          | 552954   | MS9-AGD |
|                                                                                     |      | G3/4                         |                | 552955   | MS9-AGE |
|                                                                                     |      | G1                           |                | 552956   | MS9-AGF |
|                                                                                     |      | G1 1/4                       | 400 g          | 552957   | MS9-AGG |
|                                                                                     |      | G1 1/2                       |                | 552958   | MS9-AGH |
|                                                                                     |      | 1/2 NPT                      | 300 g          | 552959   | MS9-AQR |
|                                                                                     |      | 3/4 NPT                      |                | 552960   | MS9-AQS |
|                                                                                     |      | 1 NPT                        |                | 552961   | MS9-AQT |
|                                                                                     |      | 1 1/4 NPT                    | 400 g          | 552962   | MS9-AQU |
|                                                                                     |      | 1 1/2 NPT                    |                | 552963   | MS9-AQV |

| Special oil OFSW (1 litre)                                                         |                 |          |         |
|------------------------------------------------------------------------------------|-----------------|----------|---------|
|                                                                                    | Short type code | Part no. | Type    |
|  | OFSW            | 152811   | OFSW-32 |