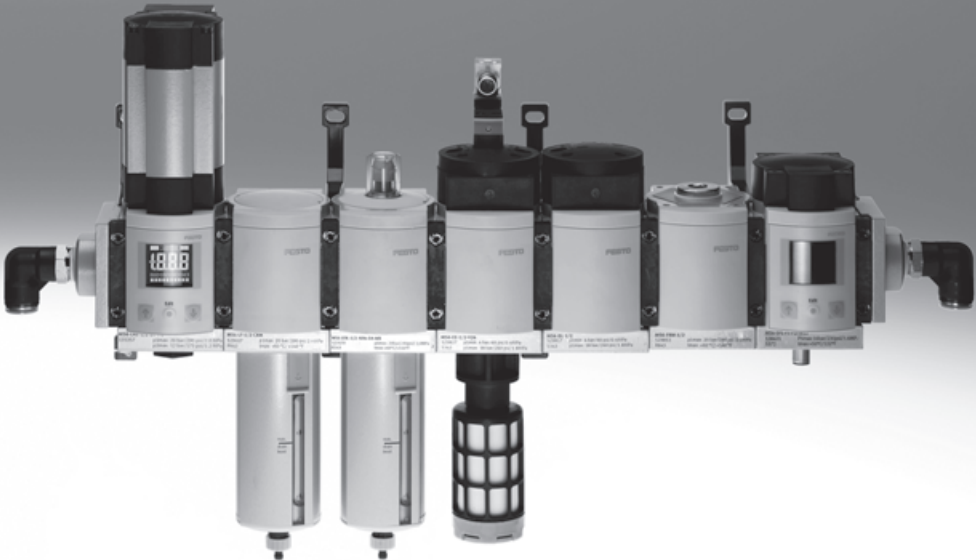
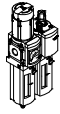
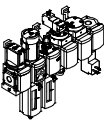



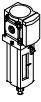



# Service unit combinations MSB, MS series



# Service unit combinations MSB, MS series

Product range overview – MS series service units

| Type   | Size | Pneumatic connection in housing | Connecting plate               | Pressure regulation range [bar] |                    |                 |                 |                  |                  | Grade of filtration [µm] |   |   |    |
|--|------|---------------------------------|--------------------------------|---------------------------------|--------------------|-----------------|-----------------|------------------|------------------|--------------------------|---|---|----|
|  |      |                                 |                                | 0.05<br>...<br>0.7              | 0.05<br>...<br>2.5 | 0.1<br>...<br>4 | 0.3<br>...<br>7 | 0.1<br>...<br>12 | 0.5<br>...<br>16 | 0.01                     | 1 | 5 | 40 |
| Code   |      |                                 | AG...                          | D2                              | D4                 | D5              | D6              | D7               | D8               | A                        | B | C | E  |
| <b>Service units</b>   |      |                                 |                                |                                 |                    |                 |                 |                  |                  |                          |   |   |    |
| <b>MSB-FRC</b><br>                              | 4    | G1/8, G1/4                      | G1/8, G1/4, G3/8               | -                               | -                  | -               | ■               | ■                | -                | -                        | - | ■ | ■  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | ■               | ■                | -                | -                        | - | ■ | ■  |
|  | 9    | -                               | -                              | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 12   | -                               | -                              | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
| <b>Service unit combinations (further variants can be ordered using the configurator → Internet: msb4, msb6 or msb9)</b>         |      |                                 |                                |                                 |                    |                 |                 |                  |                  |                          |   |   |    |
| <b>MSB</b><br>                                 | 4    | G1/4                            | G1/8, G1/4, G3/8               | -                               | -                  | -               | ■               | ■                | -                | -                        | - | ■ | ■  |
|  | 6    | G1/2                            | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | ■               | ■                | -                | -                        | - | ■ | ■  |
|  | 9    | -                               | -                              | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 12   | -                               | -                              | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
| <b>Individual devices</b>  |      |                                 |                                |                                 |                    |                 |                 |                  |                  |                          |   |   |    |
| Filter regulators<br><b>MS-LFR</b><br>        | 4    | G1/8, G1/4                      | G1/8, G1/4, G3/8               | -                               | -                  | ■               | ■               | ■                | -                | -                        | - | ■ | ■  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | ■               | ■               | ■                | ■                | -                        | - | ■ | ■  |
|  | 9    | G3/4, G1                        | G1/2, G3/4, G1, G1 1/4, G1 1/2 | -                               | -                  | ■               | ■               | ■                | ■                | -                        | - | ■ | ■  |
|  | 12   | -                               | G1, G1 1/4, G1 1/2, G2         | -                               | -                  | -               | ■               | ■                | ■                | -                        | - | ■ | ■  |
| Filters<br><b>MS-LF</b><br>                   | 4    | G1/8, G1/4                      | G1/8, G1/4, G3/8               | -                               | -                  | -               | -               | -                | -                | -                        | - | ■ | ■  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | -               | -                | -                | -                        | - | ■ | ■  |
|  | 9    | G3/4, G1                        | G1/2, G3/4, G1, G1 1/4, G1 1/2 | -                               | -                  | -               | -               | -                | -                | -                        | - | ■ | ■  |
|  | 12   | -                               | G1, G1 1/4, G1 1/2, G2         | -                               | -                  | -               | -               | -                | -                | -                        | - | ■ | ■  |
| Fine and micro filters<br><b>MS-LFM</b><br>   | 4    | G1/8, G1/4                      | G1/8, G1/4, G3/8               | -                               | -                  | -               | -               | -                | -                | ■                        | ■ | - | -  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | -               | -                | -                | ■                        | ■ | - | -  |
|  | 9    | G3/4, G1                        | G1/2, G3/4, G1, G1 1/4, G1 1/2 | -                               | -                  | -               | -               | -                | -                | ■                        | ■ | - | -  |
|  | 12   | -                               | G1, G1 1/4, G1 1/2, G2         | -                               | -                  | -               | -               | -                | -                | ■                        | ■ | - | -  |
| Activated carbon filters<br><b>MS-LFX</b><br> | 4    | G1/8, G1/4                      | G1/8, G1/4, G3/8               | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 9    | G3/4, G1                        | G1/2, G3/4, G1, G1 1/4, G1 1/2 | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 12   | -                               | G1, G1 1/4, G1 1/2, G2         | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
| Water separators<br><b>MS-LWS</b><br>         | 4    | -                               | -                              | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 6    | G1/4, G3/8, G1/2                | G1/4, G3/8, G1/2, G3/4         | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 9    | G3/4, G1                        | G1/2, G3/4, G1, G1 1/4, G1 1/2 | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |
|  | 12   | -                               | G1, G1 1/4, G1 1/2, G2         | -                               | -                  | -               | -               | -                | -                | -                        | - | - | -  |

# Service unit combinations MSB, MS series

Product range overview – MS series service units

| Type                               | Size | Bowl guard                           |            | Condensate drains |                |                 |                                       | Pressure indicator                   |                              |  |  |                 | Security  |                                  | Options  |                                   | → Page/<br>Internet |
|------------------------------------|------|--------------------------------------|------------|-------------------|----------------|-----------------|---------------------------------------|--------------------------------------|------------------------------|--|--|-----------------|---|----------------------------------|----------|-----------------------------------|---------------------|
|                                    |      | Plastic bowl with plastic bowl guard | Metal bowl | Manual rotary     | Semi-automatic | Fully automatic | External, fully automatic, electrical | Cover plate (without pressure gauge) | Integrated MS pressure gauge | Adapter plate for EN pressure gauge G1/8 | Adapter plate for EN pressure gauge G1/4 | Pressure sensor | Rotary knob with detent, lockable via accessories | Rotary knob with integrated lock | Silencer | Flow direction from right to left |                     |
| Code                               |      | R                                    | U          | M                 | H              | V               | E...                                  | VS                                   | AG                           | A8                                       | A4                                       | AD...           | AS  | E11                              | S        | Z                                 |                     |
| <b>Service units</b>               |      |                                      |            |                   |                |                 |                                       |                                      |                              |  |  |                 |   |                                  |          |                                   |                     |
| MSB-FRC                            | 4    | ■                                    | -          | ■                 | -              | ■               | -                                     | -                                    | ■                            | -  | -  | -               | ■   | -                                | -        | ■                                 | msb4                |
|                                    | 6    | ■                                    | ■          | ■                 | -              | ■               | -                                     | -                                    | ■                            | -  | -  | -               | ■   | -                                | -        | ■                                 | msb6                |
|                                    | 9    | -                                    | -          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|                                    | 12   | -                                    | -          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| <b>Service unit combinations</b>   |      |                                      |            |                   |                |                 |                                       |                                      |                              |  |  |                 |   |                                  |          |                                   |                     |
| MSB                                | 4    | ■                                    | ■          | ■                 | -              | ■               | -                                     | -                                    | ■                            | -  | -  | -               | ■   | -                                | -        | ■                                 | msb4                |
|                                    | 6    | ■                                    | ■          | ■                 | -              | ■               | -                                     | -                                    | ■                            | -  | -  | -               | ■   | -                                | -        | ■                                 | msb6                |
|                                    | 9    | -                                    | -          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|                                    | 12   | -                                    | -          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| <b>Individual devices</b>          |      |                                      |            |                   |                |                 |                                       |                                      |                              |  |  |                 |   |                                  |          |                                   |                     |
| Filter regulators<br>MS-LFR        | 4    | ■                                    | ■          | ■                 | ■              | ■               | -                                     | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms4-lfr             |
|                                    | 6    | ■                                    | ■          | ■                 | ■              | ■               | ■                                     | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms6-lfr             |
|                                    | 9    | -                                    | ■          | ■                 | ■              | ■               | ■                                     | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms9-lfr             |
|                                    | 12   | -                                    | ■          | ■                 | -              | ■               | ■                                     | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms12-lfr            |
| Filters<br>MS-LF                   | 4    | ■                                    | ■          | ■                 | ■              | ■               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms4-lf              |
|                                    | 6    | ■                                    | ■          | ■                 | ■              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms6-lf              |
|                                    | 9    | -                                    | ■          | ■                 | ■              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms9-lf              |
|                                    | 12   | -                                    | ■          | ■                 | -              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms12-lf             |
| Fine and micro filters<br>MS-LFM   | 4    | ■                                    | ■          | ■                 | ■              | ■               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms4-lfm             |
|                                    | 6    | ■                                    | ■          | ■                 | ■              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms6-lfm             |
|                                    | 9    | -                                    | ■          | ■                 | ■              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms9-lfm             |
|                                    | 12   | -                                    | ■          | ■                 | -              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms12-lfm            |
| Activated carbon filters<br>MS-LFX | 4    | ■                                    | ■          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms4-lfx             |
|                                    | 6    | ■                                    | ■          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms6-lfx             |
|                                    | 9    | -                                    | ■          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms9-lfx             |
|                                    | 12   | -                                    | ■          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms12-lfx            |
| Water separators<br>MS-LWS         | 4    | -                                    | -          | -                 | -              | -               | -                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|                                    | 6    | -                                    | ■          | -                 | -              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms6-lws             |
|                                    | 9    | -                                    | ■          | -                 | -              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms9-lws             |
|                                    | 12   | -                                    | ■          | -                 | -              | ■               | ■                                     | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms12-lws            |

# Service unit combinations MSB, MS series



Product range overview – MS series service units

| Type  | Size | Pneumatic connection in housing | Connecting plate | Pressure regulation range [bar] |      |     |     |     |     |  |  | Supply voltage                            |   |  |  |
|---|------|---------------------------------|------------------|---------------------------------|------|-----|-----|-----|-----|--|--|---|---|--|--|
|   |      |                                 |                  | 0.05                            | 0.05 | 0.1 | 0.3 | 0.1 | 0.5 | 24 V DC, connection pattern to EN 175301 | 24 V DC, connection M12 to IEC 61076-2-101 | 110 V AC, connection pattern to EN 175301 | 230 V AC, connection pattern to EN 175301 |  |  |
| Code  |      |                                 | AG...            | 0.7                             | 2.5  | 4   | 7   | 12  | 16  | V24                                      | V24P                                       | V110                                      | V230                                      |  |  |
| <b>Individual devices</b>                                 |      |                                 |                  |                                 |      |     |     |     |     |  |  |   |   |  |  |
| Pressure regulators<br><b>MS-LR</b>                       |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | ■   | ■   | ■   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | ■   | ■   | ■   | ■  | -  | -   | -   |  |  |
|   |      | 9                               | G3/4, G1         | G1/2, G3/4, G1, G1 1/4, G1 1/2  | -    | -   | ■   | ■   | ■   | ■  | -  | -   | -   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | ■   | ■   | ■  | -  | -   | -   |  |  |
| Pressure regulators<br><b>MS-LRB</b>                      |      | 4                               | G1/4             | G1/8, G1/4, G3/8                | -    | -   | ■   | ■   | ■   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/2             | G1/4, G3/8, G1/2, G3/4          | -    | -   | ■   | ■   | ■   | ■  | -  | -   | -   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| Precision pressure regulators<br><b>MS-LRP</b>            |      | 4                               | -                | -                               | ■    | ■   | ■   | -   | ■   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | ■    | ■   | ■   | -   | ■   | -  | -  | -   | -   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| Precision pressure regulators<br><b>MS-LRPB</b>           |      | 4                               | -                | -                               | ■    | ■   | ■   | -   | ■   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/2             | G1/4, G3/8, G1/2, G3/4          | ■    | ■   | ■   | -   | ■   | -  | -  | -   | -   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| Electrical pressure regulators<br><b>MS-LRE</b>           |      | 4                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | ■   | ■   | ■   | ■  | -  | -   | -   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| Lubricators<br><b>MS-LOE</b>                              |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 9                               | G3/4, G1         | G1/2, G3/4, G1, G1 1/4, G1 1/2  | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| On-off valves, manually actuated<br><b>MS-EM(1)</b>       |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 9                               | G3/4, G1         | G1/2, G3/4, G1, G1 1/4, G1 1/2  | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| On-off valves, electrically actuated<br><b>MS-EE</b>      |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | -   | -   | -   | ■  | -  | ■   | ■   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | -   | -   | -   | ■  | -  | ■   | ■   |  |  |
|   |      | 9                               | G3/4, G1         | G1/2, G3/4, G1, G1 1/4, G1 1/2  | -    | -   | -   | -   | -   | ■  | ■  | ■   | ■   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | -   | -   | ■  | ■  | ■   | ■   |  |  |
| Soft-start valves, pneumatically actuated<br><b>MS-DL</b> |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
| Soft-start valves, electrically actuated<br><b>MS-DE</b>  |      | 4                               | G1/8, G1/4       | G1/8, G1/4, G3/8                | -    | -   | -   | -   | -   | ■  | -  | ■   | ■   |  |  |
|   |      | 6                               | G1/4, G3/8, G1/2 | G1/4, G3/8, G1/2, G3/4          | -    | -   | -   | -   | -   | ■  | -  | ■   | ■   |  |  |
|   |      | 9                               | -                | -                               | -    | -   | -   | -   | -   | -  | -  | -   | -   |  |  |
|   |      | 12                              | -                | G1, G1 1/4, G1 1/2, G2          | -    | -   | -   | -   | -   | -  | ■  | ■   | ■   |  |  |

# Service unit combinations MSB, MS series

Product range overview – MS series service units

| Type  | Size | Bowl guard                           |            | Pressure indicator                   |                              |  |  | Security        |   |                                  | Options  |                                   | → Page/<br>Internet |
|---|------|--------------------------------------|------------|--------------------------------------|------------------------------|--|--|-----------------|---|----------------------------------|----------|-----------------------------------|---------------------|
|   |      | Plastic bowl with plastic bowl guard | Metal bowl | Cover plate (without pressure gauge) | Integrated MS pressure gauge | Adapter plate for EN pressure gauge G1/8 | Adapter plate for EN pressure gauge G1/4 | Pressure sensor | Rotary knob with detent, lockable via accessories | Rotary knob with integrated lock | Silencer | Flow direction from right to left |                     |
| Code  |      | R                                    | U          | VS                                   | AG                           | A8                                       | A4                                       | AD...           | AS  | E11                              | S        | Z                                 |                     |
| <b>Individual devices</b>                                 |      |                                      |            |                                      |                              |  |  |                 |   |                                  |          |                                   |                     |
| Pressure regulators<br><b>MS-LR</b>                       | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms4-lr              |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms6-lr              |
|   | 9    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms9-lr              |
|   | 12   | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | ■   | ■                                | -        | ■                                 | ms12-lr             |
| Pressure regulators<br><b>MS-LRB</b>                      | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms4-lrb             |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms6-lrb             |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| Precision pressure regulators<br><b>MS-LRP</b>            | 4    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 6    | -                                    | -          | ■                                    | -                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms6-lrp             |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| Precision pressure regulators<br><b>MS-LRPB</b>           | 4    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 6    | -                                    | -          | ■                                    | -                            | ■  | ■  | ■               | ■   | ■                                | -        | ■                                 | ms6-lrpb            |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| Electrical pressure regulators<br><b>MS-LRE</b>           | 4    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | -        | ■                                 | ms6-lre             |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
| Lubricators<br><b>MS-LOE</b>                              | 4    | ■                                    | ■          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms4-loe             |
|   | 6    | ■                                    | ■          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms6-loe             |
|   | 9    | -                                    | ■          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms9-loe             |
|   | 12   | -                                    | ■          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | ■                                 | ms12-loe            |
| On-off valves, manually actuated<br><b>MS-EM(1)</b>       | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | -   | -                                | ■        | ■                                 | ms4-em1             |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -   | -                                | ■        | ■                                 | ms6-em1             |
|   | 9    | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | ■        | ■                                 | ms9-em              |
|   | 12   | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | ■        | ■                                 | ms12-em             |
| On-off valves, electrically actuated<br><b>MS-EE</b>      | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | -   | -                                | ■        | ■                                 | ms4-ee              |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -   | -                                | ■        | ■                                 | ms6-ee              |
|   | 9    | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | ■        | ■                                 | ms9-ee              |
|   | 12   | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | ■        | ■                                 | ms12-ee             |
| Soft-start valves, pneumatically actuated<br><b>MS-DL</b> | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | -   | -                                | -        | ■                                 | ms4-dl              |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -   | -                                | -        | ■                                 | ms6-dl              |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | -        | ■                                 | ms12-dl             |
| Soft-start valves, electrically actuated<br><b>MS-DE</b>  | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | -   | -                                | -        | ■                                 | ms4-de              |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -   | -                                | -        | ■                                 | ms6-de              |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | -   | -                                | -        | -                                 | -                   |
|   | 12   | -                                    | -          | ■                                    | ■                            | -  | ■  | -               | -   | -                                | -        | ■                                 | ms12-de             |

# Service unit combinations MSB, MS series

Product range overview – MS series service units



| Type  | Size | Pneumatic connection in housing | Connecting plate                                    | Performance Level   |                       |  | Supply voltage                           |   |   |   |   |
|---|------|---------------------------------|---|---|-----------------------|--|--|---|---|---|---|
|   |      |                                 |   | Category 1, 1-channel   | Category 3, 2-channel | Category 4, 2-channel with self-monitoring | 24 V DC, connection pattern to EN 175301 | 24 V DC, connection M12 to IEC 61076-2-101/ to EN 60947-5-2 | 110 V AC, connection pattern to EN 175301 | 230 V AC, connection pattern to EN 175301 |   |
| Code  |      |                                 | AG...   | C   | D                     | E  | V24                                      | V24P  | V110                                      | V230                                      |   |
| <b>Individual devices</b>                       |      |                                 |   |   |                       |  |  |   |   |   |   |
| Soft start and exhaust valves<br><b>MS-SV-C</b> |      | 4                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 6                               | G $\frac{1}{2}$                                     | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$       | ■                     | –  | –  | ■   | ■   | ■   | ■ |
|   |      | 9                               | G $\frac{3}{4}$ , G1                                | G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ | ■                     | –  | –  | ■   | ■   | ■   | ■ |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |
| Soft start and exhaust valves<br><b>MS-SV-D</b> |      | 4                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 6                               | G $\frac{1}{2}$                                     | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$       | –                     | ■  | –  | ■   | ■   | –   | – |
|   |      | 9                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |
| Soft start and exhaust valves<br><b>MS-SV-E</b> |      | 4                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 6                               | G $\frac{1}{2}$                                     | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$       | –                     | –  | ■  | ■   | –   | –   | – |
|   |      | 9                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |
| Membrane air dryers<br><b>MS-LDM1</b>           |      | 4                               | G $\frac{1}{8}$ , G $\frac{1}{4}$                   | G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$                         | –                     | –  | –  | –   | –   | –   | – |
|   |      | 6                               | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$       | –                     | –  | –  | –   | –   | –   | – |
|   |      | 9                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |
| Branching modules<br><b>MS-FRM</b>              |      | 4                               | G $\frac{1}{8}$ , G $\frac{1}{4}$                   | G $\frac{1}{8}$ , G $\frac{1}{4}$ , G $\frac{3}{8}$                         | –                     | –  | –  | –   | –   | –   | – |
|   |      | 6                               | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ | G $\frac{1}{4}$ , G $\frac{3}{8}$ , G $\frac{1}{2}$ , G $\frac{3}{4}$       | –                     | –  | –  | –   | –   | –   | – |
|   |      | 9                               | G $\frac{3}{4}$ , G1                                | G $\frac{1}{2}$ , G $\frac{3}{4}$ , G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ | –                     | –  | –  | –   | –   | –   | – |
|   |      | 12                              | –   | G1, G1 $\frac{1}{4}$ , G1 $\frac{1}{2}$ , G2                                | –                     | –  | –  | –   | –   | –   | – |
| Distributor blocks<br><b>MS-FRM-FRZ</b>         |      | 4                               | G $\frac{1}{4}$                                     | –   | –                     | –  | –  | –   | –   | –   | – |
|   |      | 6                               | G $\frac{1}{2}$                                     | –   | –                     | –  | –  | –   | –   | –   | – |
|   |      | 9                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |
| Flow sensors<br><b>SFAM</b>                     |      | 4                               | –   |   |                       |  |  |   |   |   |   |
|   |      | 6                               | G $\frac{1}{2}$                                     | G $\frac{1}{2}$   | –                     | –  | –  | –   | –   | –   | – |
|   |      | 9                               | –   | G1, G1 $\frac{1}{2}$  | –                     | –  | –  | –   | –   | –   | – |
|   |      | 12                              | –   |   |                       |  |  |   |   |   |   |

# Service unit combinations MSB, MS series

Product range overview – MS series service units

| Type  | Size | Bowl guard                           |            | Pressure indicator                   |                              |  |  |                 | Switch output                                |   |          | Options                           |          | → Page/<br>Internet |
|---|------|--------------------------------------|------------|--------------------------------------|------------------------------|--|--|-----------------|--|---|----------|-----------------------------------|----------|---------------------|
|   |      | Plastic bowl with plastic bowl guard | Metal bowl | Cover plate (without pressure gauge) | Integrated MS pressure gauge | Adapter plate for EN pressure gauge G1/8 | Adapter plate for EN pressure gauge G1/4 | Pressure sensor | 2x PNP or NPN, 1 analogue output 4 ... 20 mA | 2x PNP or NPN, 1 analogue output 0 ... 10 V | Silencer | Flow direction from right to left |          |                     |
| Code  |      | R                                    | U          | VS                                   | AG                           | A8                                       | A4                                       | AD...           | 2SA  | 2SV   | S        | Z/R                               |          |                     |
| <b>Individual devices</b>                       |      |                                      |            |                                      |                              |  |  |                 |  |   |          |                                   |          |                     |
| Soft start and exhaust valves<br><b>MS-SV-C</b> | 4    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   |          |                     |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | ■        | ■                                 | ms6-sv   |                     |
|   | 9    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | ■        | ■                                 | ms9-sv   |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
| Soft start and exhaust valves<br><b>MS-SV-D</b> | 4    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | ■        | ■                                 | ms6-sv   |                     |
|   | 9    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
| Soft start and exhaust valves<br><b>MS-SV-E</b> | 4    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | ■        | ■                                 | ms6-sv   |                     |
|   | 9    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
| Membrane air dryers<br><b>MS-LDM1</b>           | 4    | -                                    | ■          | -                                    | -                            | -  | -  | -               | -  | -   | -        | ■                                 | ms4-ldm1 |                     |
|   | 6    | -                                    | ■          | -                                    | -                            | -  | -  | -               | -  | -   | -        | ■                                 | ms6-ldm1 |                     |
|   | 9    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
| Branching modules<br><b>MS-FRM</b>              | 4    | -                                    | -          | ■                                    | ■                            | ■  | ■  | ■               | -  | -   | -        | ■                                 | ms4-frm  |                     |
|   | 6    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | -        | ■                                 | ms6-frm  |                     |
|   | 9    | -                                    | -          | ■                                    | ■                            | -  | ■  | ■               | -  | -   | -        | ■                                 | ms9-frm  |                     |
|   | 12   | -                                    | -          | ■                                    | -                            | -  | -  | -               | -  | -   | -        | -                                 | ms12-frm |                     |
| Distributor blocks<br><b>MS-FRM-FRZ</b>         | 4    | -                                    | -          | -                                    | -                            | -  | -  | -               | -  | -   | -        | ■                                 | ms4-frm  |                     |
|   | 6    | -                                    | -          | -                                    | -                            | -  | -  | -               | -  | -   | -        | ■                                 | ms6-frm  |                     |
|   | 9    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
| Flow sensors<br><b>SFAM</b>                     | 4    | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |
|   | 6    | -                                    | -          | -                                    | -                            | -  | -  | -               | ■  | ■   | -        | ■                                 | sfam-62  |                     |
|   | 9    | -                                    | -          | -                                    | -                            | -  | -  | -               | ■  | ■   | -        | ■                                 | sfam-90  |                     |
|   | 12   | -                                    |            |                                      |                              |  |  |                 |  |   |          |                                   | -        |                     |

# Service unit combinations MSB, MS series

Key features

## Configurable service unit combinations MSB

Overview



- 3 sizes:  
MSB4 – grid dimension 40 mm  
MSB6 – grid dimension 62 mm  
MSB9 – grid dimension 90 mm
- Threaded connections in the product housing or with connecting plates
- Type of mounting and flow direction can be optionally selected
- Can be configured in accordance with the ATEX directive for explosive atmospheres

## Configurator

The configurator enables step-by-step configuration of complex service unit combinations. It is divided into a basic configuration and the individual service unit configurations.

The technical parameters for the entire service unit combination are defined

using the features of the basic configuration. All service unit configurations define the service unit along with the general technical conditions.

You can navigate through your configuration using the structure [1]. All of the features available for selection are

stored in drop-down lists [2]. Missing or incomplete information is indicated by an exclamation mark. Features shown against a grey background cannot be selected in the selected configuration → table "Conditions and exclusion of features".

If you select a feature shown against a grey background, red font will indicate that the configuration is incorrect.

A dynamic graphic [3] and the order code [4] (→ type codes) are created in accordance with your current configuration.

Close

## Service unit combination MSB6

Select features
Product list
My favourites

MSB6-AGD:D4:A1:J1:F1:I5-WP [4]

[1]

- Basic configuration
  - Basic function
  - Size
  - Connection size
  - Mounting type
  - EU certification
  - >>> Alternative flow dir.
- Service unit 1
  - Service unit equipment position
  - >>> Supply voltage 1
  - >>> Silencer 1
- Service unit 2
- Service unit 3
- Service unit 4
- Service unit 5
- Service unit 6
- Service unit 7

**Basic configuration**

|                                |                                   |
|--------------------------------|-----------------------------------|
| Basic function                 | MSB Standard manifold             |
| Size                           | 6 [2]                             |
| Connection size                | ACD Connecting plate C1/2         |
| Mounting type                  | WP Mounting bracket               |
| EU certification               | None                              |
| >>> Alternative flow direction | Flow direction from left to right |

Value Z: with LRB(O1-O6), LRPB(R1-R4) pressure output to the front

**Service unit 1**

|                                   |                             |
|-----------------------------------|-----------------------------|
| Service unit equipment position 1 | EF On-off valve, electrical |
| >>> Supply voltage 1              | V24 24 V DC                 |
| >>> Silencer 1                    | S Silencer                  |

Add to basket

2D/3D view

Accessories

Documentation

Data Sheet

Display Overview

Save as

Reset

---

Valid selection

request your price

# 531030

W - One week delivery time

Exemplary representation

[3]



# Service unit combinations MSB, MS series

Key features

## Information

### General

The adjacent columns and the product range overview provide a brief overview of the available service units of a specific size → 2.

You can find the breakdown of the service unit short code transferred in the order code for the size MSB4/MSB6 from page 12 onwards and for the size MSB9 from page 25 onwards.

You can find detailed information and all of the technical data in the documentation for the corresponding service unit. To do so, enter the code for the service unit (e.g. MS6-EE) in the search window in the product catalogue and select Documentation.

### Note

Individual devices with selected features are available for the configurable service unit combinations → Overview lists. Further feature options can be selected via the configurable individual device.

1) Not available in all markets.

### ISO: MSB4 (part no. 531029)

#### NPT: MSB4N (part no. 532306)<sup>1)</sup>

- Filter regulator MS4-LFR
- Pressure regulator MS4-LR
- Pressure regulator for manifold assembly MS4-LRB
- Filter MS4-LF
- Fine and micro filter MS4-LFM
- Activated carbon filter MS4-LFX
- Lubricator MS4-LOE
- Manual on-off valve MS4-EM1
- Electric on-off valve MS4-EE
- Pneumatic soft-start valve MS4-DL
- Electric soft-start valve MS4-DE
- Membrane air dryer MS4-LDM1
- Branching module MS4-FRM

### ISO: MSB6 (part no. 531030)

#### NPT: MSB6N (part no. 532307)<sup>1)</sup>

- Filter regulator MS6-LFR
- Pressure regulator MS6-LR
- Pressure regulator for manifold assembly MS6-LRB
- Precision pressure regulator MS6-LRP
- Precision pressure regulator for manifold assembly MS6-LRPB
- Electric pressure regulator MS6-LRE
- Filter MS6-LF
- Fine and micro filter MS6-LFM
- Activated carbon filter MS6-LFX
- Water separator MS6-LWS
- Lubricator MS6-LOE
- Manual on-off valve MS6-EM1
- Electric on-off valve MS6-EE
- Pneumatic soft-start valve MS6-DL
- Electric soft-start valve MS6-DE
- Soft-start and exhaust valve MS6-SV
- Membrane air dryer MS6-LDM1
- Branching module MS6-FRM
- Flow sensor SFAM-62

### ISO + NPT:

#### MSB9 (part no. 552938)

- Filter regulator MS9-LFR
- Pressure regulator MS9-LR
- Filter MS9-LF
- Fine and micro filter MS9-LFM
- Activated carbon filter MS9-LFX
- Water separator MS9-LWS
- Lubricator MS9-LOE
- Manual on-off valve MS9-EM
- Electric on-off valve MS9-EE
- Soft-start and exhaust valve MS9-SV
- Branching module MS9-FRM
- Flow sensor SFAM-90

## Notes on individual service units and their features

### MS-LFR and MS-LF:

- Grade of filtration with feature E (40 µm) or C (5 µm)

### MS-LFM:

- Grade of filtration with feature B (1 µm) or A (0.01 µm)
- Filter contamination sensor with feature DA is an optical differential pressure indicator with red-green range
- Filter contamination sensor with feature DP is an electric filter contamination indicator with switching output

### MS-LRB/LRPB:

- Pressure output is to the rear, the pressure output is to the front if the feature Z (alternative flow direction) is selected

### MS-EE and MS-DE:

- The supply voltage with feature 10V24 is only permissible up to an operating voltage of max. 10 bar
- With the supply voltages with feature V24/V110/V230 the solenoid head has a non-detenting/detenting manual override, with feature 10V24 just a non-detenting manual override

### MS-LDM1:

- Flow cartridge with feature P05, P10 only for MSB4; with feature P20, P30, P40 only for MSB6

# Service unit combinations MSB, MS series

Key features

FESTO

## Conditions and exclusions of features

### Note

If a service unit combination is configured with ISO thread then the individual devices also have ISO thread (e.g. the outlets of the branching module MS-FRM), individual devices with integrated MS pressure gauge (e.g. the pressure regulator MS-LR) have a display scale in [bar].

If you configure a service unit combination with NPT thread, the other pneumatic connections are equipped with NPT threads and integrated MS pressure gauges with the display unit [psi].

In addition to the conditions and exclusions mentioned here, you can also obtain information by selecting the information button beside some of the selection lists in the configurator.

## General rules

- Selection of at least 2 to at most 10 service units
- Lubricators MS-LOE are not permitted in the flow direction upstream of a filter MS-LFR/LFM/LF/LFX, water separator MS-LWS or membrane air dryer MS-LDM1
- A micro filter MS-LFM must be installed upstream of an activated carbon filter MS-LFX in the flow direction
- Mounting bracket for large wall gap WPB must be chosen if the combination contains the electric pressure regulator MS-LRE, the soft-start and exhaust valve MS-SV-E or the lockable regulator MS-LRB without angled outlet block
- Regulators MS-LFR/LR/LRP/LRE are only permissible in the flow direction with the same or decreasing pressure regulation range
- Filters MS-LFR/LF/LFM/LFX are only permissible in the flow direction with an increasing grade of filtration

## Service unit-specific rules

### MS-LFM:

- Only manual condensate drain permissible with MS4-LFM with plastic bowl

### MS-DL:

- No filter MS-LFR/LF/LFM with fully automatic condensate drain downstream of MS4-DL

### SFAM:

- Connection size of the service unit combination must be at least G $\frac{1}{2}$  for SFAM-62 and at least G $\frac{3}{4}$  for SFAM-90
- An SFAM cannot be installed directly downstream of a regulator MS-LFR/LR; a branching module MS-FRM must be positioned between them
- SFAM-90 only in flow direction from left to right

### MS-SV-E:

- Must be the last service unit in the flow direction

# Service unit combinations MSB, MS series

Key features

## ATEX certification

A configured service unit combination consisting of mechanical service units can be used in zones 1 and 2 of explosive gas atmospheres and in zones 21 and 22 of explosive dust atmospheres. The following service units are approved and can be selected using the code EX4 in the order section "EU certification":

- Filter regulator MS4/6/9-LFR
- Pressure regulator MS4/6/9-LR
- Pressure regulator for manifold assembly MS4/6-LRB
- Precision pressure regulator MS6-LRP
- Precision pressure regulator for manifold assembly MS6-LRPB

- Filter MS4/6/9-LF
- Fine and micro filter MS4/6/9-LFM
- Activated carbon filter MS4/6/9-LFX
- Water separator MS6/9-LWS
- Manual on-off valve MS4/6-EM1, MS9-EM
- Pneumatic soft-start valve MS4/6-DL
- Membrane air dryer MS4/6-LDM1
- Branching module MS4/6/9-FRM

A configured service unit combination consisting of mechanical and electric service units can be used in zone 2 of explosive gas atmospheres and in zone 22 of explosive dust atmospheres. In this case, the code EX2 must be selected in the order section "EU certification". The following electric service units are approved in addition to the mechanical service units:

- Electric on-off valve MS4/6/9-EE
- Electric soft-start valve MS4/6-DE
- Flow sensor SFAM

- Supplied with special accessories, e.g. mounting brackets, module connectors, connecting plates with earthing screws
- Only connecting plates with G thread possible
- Lubricated operation not permissible
- On-off valve MS-EE or soft-start valve MS-DE only with 24 V supply voltage

| EU certification                              | EX2   | EX4                                |
|---|---|------------------------------------|
| <b>MSB4/6</b>                                 |   |                                    |
| ATEX category for gas                         | II 3G                                       | II 2G                              |
| Explosion ignition protection type for gas    | Ex nA IIC T4 X Gc                           | c T6 X                             |
| ATEX category for dust                        | II 3D                                       | II 2D                              |
| Explosion ignition protection type for dust   | Ex tc IIIC T105°C X Dc IP65                 | c 60 °C X                          |
| Explosion-proof temperature rating            | -10 °C ≤ Ta ≤ +60 °C <sup>1)</sup>          |                                    |
|   | +5 °C ≤ Ta ≤ +60 °C <sup>2)</sup>           |                                    |
|   | +2 °C ≤ Ta ≤ +50 °C <sup>3)</sup>           |                                    |
| CE marking<br>(see declaration of conformity) | To EU Explosion Protection Directive (ATEX) |                                    |
|   | To EU EMC Directive                         | -                                  |
|   | To EU Low Voltage Directive                 | -                                  |
| <b>MSB9</b>                                   |   |                                    |
| ATEX category for gas                         | II 3G                                       | II 2G                              |
| Explosion ignition protection type for gas    | Ex nA IIC T5 X Gc                           | c T6 X                             |
| ATEX category for dust                        | II 3D                                       | II 2D                              |
| Explosion ignition protection type for dust   | Ex tc IIIB T95°C X Dc IP54                  | c 60 °C X                          |
| Explosion-proof temperature rating            | -10 °C ≤ Ta ≤ +50 °C <sup>1)</sup>          | -10 °C ≤ Ta ≤ +60 °C <sup>1)</sup> |
|   | +5 °C ≤ Ta ≤ +50 °C <sup>2)</sup>           | +5 °C ≤ Ta ≤ +60 °C <sup>2)</sup>  |
| CE marking<br>(see declaration of conformity) | To EU Explosion Protection Directive (ATEX) |                                    |

1) When using a service unit with manual condensate drain.  
 2) When using a service unit with fully automatic condensate drain.  
 3) When using a membrane air dryer MS4/6-LDM1.

## UL certification

Component certified by UL for the market in the USA and Canada for normal environments. To be selected using the code UL1 in the order section "UL certification",

- Operating pressure/pressure regulation range max. 10 bar
- Supply voltage for on-off valve MS-EE or soft-start valve MS-DE max. 24 V DC

# Service unit combinations MSB4/6, MS series

Type codes

MSB 6 - 1/2 : : ... : - WP - - -

| Series |                                   |
|--------|-----------------------------------|
| MSB    | Standard service unit combination |

| Size |                      |
|------|----------------------|
| 4    | Grid dimension 40 mm |
| 6    | Grid dimension 62 mm |

| Pneumatic connection |                       |
|----------------------|-----------------------|
| MSB4                 |                       |
| 1/8                  | Female thread G1/8    |
| 1/4                  | Female thread G1/4    |
| AGA                  | Connecting plate G1/8 |
| AGB                  | Connecting plate G1/4 |
| AGC                  | Connecting plate G3/8 |
| MSB6                 |                       |
| 1/4                  | Female thread G1/4    |
| 3/8                  | Female thread G3/8    |
| 1/2                  | Female thread G1/2    |
| AGB                  | Connecting plate G1/4 |
| AGC                  | Connecting plate G3/8 |
| AGD                  | Connecting plate G1/2 |
| AGE                  | Connecting plate G3/4 |

| Service unit equipment |                           |             |
|------------------------|---------------------------|-------------|
| Position 1             | Selection → Overview list | Position 1  |
| Position 2             |                           | Position 2  |
| ...                    |                           | ...         |
| Position 10            |                           | Position 10 |

| Type of mounting |                                     |
|------------------|-------------------------------------|
|                  | Without mounting bracket            |
| WP               | Mounting bracket                    |
| WPB              | Mounting bracket for large wall gap |
| WPM              | Mounting bracket                    |

| EU certification |  |
|------------------|--|
|                  | None   |
| EX2              | II 3GD in accordance with EU Directive 94/9/EC |
| EX4              | II 2GD in accordance with EU Directive 94/9/EC |

| UL certification |   |
|------------------|---|
|                  | None  |
| UL1              | cULus, ordinary location for Canada and USA |

| Flow direction |                    |
|----------------|--------------------|
|                | From left to right |
| Z              | From right to left |

# Service unit combinations MSB4/6, MS series

Type codes

MSB 6 N - 1/2 : : : ... : - WP -

**Series**

|     |                                   |
|-----|-----------------------------------|
| MSB | Standard service unit combination |
|-----|-----------------------------------|

**Size**

|   |                      |
|---|----------------------|
| 4 | Grid dimension 40 mm |
| 6 | Grid dimension 62 mm |

**Thread**

|   |     |
|---|-----|
| N | NPT |
|---|-----|

**Pneumatic connection**

| MSB4N |                         |
|-------|-------------------------|
| 1/8   | Female thread NPT1/8    |
| 1/4   | Female thread NPT1/4    |
| AQK   | Connecting plate NPT1/8 |
| AQN   | Connecting plate NPT1/4 |
| AQP   | Connecting plate NPT3/8 |
| MSB6N |                         |
| 1/4   | Female thread NPT1/4    |
| 3/8   | Female thread NPT3/8    |
| 1/2   | Female thread NPT1/2    |
| AQN   | Connecting plate NPT1/4 |
| AQP   | Connecting plate NPT3/8 |
| AQR   | Connecting plate NPT1/2 |
| AQS   | Connecting plate NPT3/4 |

**Service unit equipment**

|             |                           |             |
|-------------|---------------------------|-------------|
| Position 1  | Selection → Overview list | Position 1  |
| Position 2  |                           | Position 2  |
| ...         |                           | ...         |
| Position 10 |                           | Position 10 |

**Type of mounting**

|     |                                     |
|-----|-------------------------------------|
|     | Without mounting bracket            |
| WP  | Mounting bracket                    |
| WPB | Mounting bracket for large wall gap |
| WPM | Mounting bracket                    |

**Flow direction**

|   |                    |
|---|--------------------|
|   | From left to right |
| Z | From right to left |

# Service unit combinations MSB4/6, MS series

FESTO

Type codes

| Overview list – Service units MS4/6   |                 |                 |                  |  |
|---|-----------------|-----------------|------------------|--|
| Code  | Size            |                 | Type             | Description  |
|   | MS4             | MS6             |                  |  |
| Soft-start valve MS-DL, pneumatically actuated  |                 |                 |                  |  |
| A1  | ■               | ■               | MS-DL            | Cover plate  |
| Soft-start valve MS-DE, electrically actuated   |                 |                 |                  |  |
| B1  | ■               | ■               | MS-DE-V24        | Supply voltage 24 V DC, operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), cover plate  |
| B2  | ■               | ■               | MS-DE-V110       | Supply voltage 110 V AC, operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), cover plate   |
| B3  | ■               | ■               | MS-DE-V230       | Supply voltage 230 V AC, operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), cover plate   |
| B4  | ■               | ■               | MS-DE-10V24      | Supply voltage 24 V DC, operating pressure 4 ... 10 bar, cover plate   |
| B5  | ■               | ■               | MS-DE-V24-EX2    | Supply voltage 24 V DC, operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), cover plate, to EU Explosion Protection Directive (ATEX)   |
| On-off valve MS-EM1, manually actuated  |                 |                 |                  |  |
| C3  | ■               | ■               | MS-EM1           | Without silencer, cover plate  |
| C4  | ■               | ■               | MS-EM1-S         | Silencer, cover plate  |
| On-off valve MS-EE, electrically actuated   |                 |                 |                  |  |
| D1  | ■               | ■               | MS-EE-V24        | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), without silencer, cover plate  |
| D2  | ■               | ■               | MS-EE-V110       | Supply voltage 110 V AC (pin allocation to EN 175301), operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), without silencer, cover plate   |
| D3  | ■               | ■               | MS-EE-V230       | Supply voltage 230 V AC (pin allocation to EN 175301), operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), without silencer, cover plate   |
| D4  | ■               | ■               | MS-EE-V24-S      | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, silencer, cover plate   |
| D5  | ■               | ■               | MS-EE-V110-S     | Supply voltage 110 V AC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, silencer, cover plate  |
| D6  | ■               | ■               | MS-EE-V230-S     | Supply voltage 230 V AC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, silencer, cover plate  |
| D7  | ■               | ■               | MS-EE-10V24      | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, without silencer, cover plate   |
| D8  | ■               | ■               | MS-EE-10V24-S    | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, silencer, cover plate   |
| D9  | ■               | ■               | MS-EE-V24-EX2    | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 14 bar (MS4) / 4 ... 18 bar (MS6), without silencer, cover plate, to EU Explosion Protection Directive (ATEX)                   |
| D10   | ■               | ■               | MS-EE-V24-S-EX2  | Supply voltage 24 V DC (pin allocation to EN 175301), operating pressure 4 ... 10 bar, silencer, cover plate, to EU Explosion Protection Directive (ATEX)  |
| D14   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-EE-10V24P-AD7 | Supply voltage 24 V DC, M12x1 to IEC 61076-2-101, operating pressure 4 ... 10 bar, without silencer, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact) |
| 1) Female thread only with G <sup>1</sup> / <sub>4</sub> (MS4) or G <sup>1</sup> / <sub>2</sub> (MS6) |                 |                 |                  |  |
| Branching module MS-FRM/distributor block MS-FRM-FRZ  |                 |                 |                  |  |
| F1  | ■               | ■               | MS-FRM           | Cover plate  |
| F2  | ■               | ■               | MS-FRM-I         | Integrated non-return function, cover plate  |
| F3  | ■               | ■               | MS-FRM-Y         | Pressure switch without display (plug socket, EN 175 301, type A, cube), cover plate   |
| F6  | ■               | ■               | MS-FRM-AD1       | Pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin)  |
| F7  | ■               | ■               | MS-FRM-I-AD1     | Integrated non-return function, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin)  |
| F8  | ■               | ■               | MS-FRM-M12       | Pressure switch without display (plug socket, round, M12, 4-pin), cover plate  |
| F9  | ■               | ■               | MS-FRM-I-M12     | Integrated non-return function, pressure switch without display (plug socket, round, M12, 4-pin), cover plate  |
| F10   | ■               | ■               | MS-FRM-AD3       | Pressure sensor with LCD display (plug M12, 1 switching output PNP, 4-pin)   |
| F11   | ■               | ■               | MS-FRM-I-AD3     | Integrated non-return function, pressure sensor with LCD display (plug M12, 1 switching output PNP, 4-pin)   |

# Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6                         |      |     |               |   |
|---|------|-----|---------------|---|
| Code  | Size |     | Type          | Description   |
|   | MS4  | MS6 |               |   |
| <b>Branching module MS-FRM/distributor block MS-FRM-FRZ</b> |      |     |               |   |
| F12   | ■    | ■   | MS-FRM-AD7    | Pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact)                                 |
| F13   | ■    | ■   | MS-FRM-I-AD7  | Integrated non-return function, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact) |
| F14   | ■    | ■   | MS-FRM-FRZ    | Half grid dimension 20 mm   |
| <b>Membrane air dryer MS-LDM1</b>                           |      |     |               |   |
| G3  | ■    | –   | MS-LDM1-P05   | Flow cartridge 50 l/min   |
| G4  | ■    | –   | MS-LDM1-P10   | Flow cartridge 100 l/min  |
| G5  | –    | ■   | MS-LDM1-P20   | Flow cartridge 200 l/min  |
| G6  | –    | ■   | MS-LDM1-P30   | Flow cartridge 300 l/min  |
| G7  | –    | ■   | MS-LDM1-P40   | Flow cartridge 400 l/min  |
| <b>Filter MS-LF</b>   |      |     |               |   |
| H1  | ■    | ■   | MS-LF-ERV     | Grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain   |
| H2  | ■    | ■   | MS-LF-ERM     | Grade of filtration 40 µm, plastic bowl guard, manual condensate drain  |
| H3  | ■    | ■   | MS-LF-CRM     | Grade of filtration 5 µm, plastic bowl guard, manual condensate drain   |
| H4  | ■    | ■   | MS-LF-CRV     | Grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain  |
| H5  | ■    | ■   | MS-LF-CUM     | Grade of filtration 5 µm, metal bowl, manual condensate drain   |
| H6  | ■    | ■   | MS-LF-CUV     | Grade of filtration 5 µm, metal bowl, fully automatic condensate drain  |
| H7  | ■    | ■   | MS-LF-EUV     | Grade of filtration 40 µm, metal bowl, fully automatic condensate drain   |
| H8  | ■    | ■   | MS-LF-EUM     | Grade of filtration 40 µm, metal bowl, manual condensate drain  |
| <b>Fine and micro filter MS-LFM</b>                         |      |     |               |   |
| I1  | ■    | ■   | MS-LFM-BRM    | Grade of filtration 1 µm, plastic bowl guard, manual condensate drain   |
| I2  | –    | ■   | MS-LFM-BRV    | Grade of filtration 1 µm, plastic bowl guard, fully automatic condensate drain  |
| I3  | ■    | ■   | MS-LFM-ARM    | Grade of filtration 0.01 µm, plastic bowl guard, manual condensate drain  |
| I4  | –    | ■   | MS-LFM-ARV    | Grade of filtration 0.01 µm, plastic bowl guard, fully automatic condensate drain   |
| I5  | ■    | ■   | MS-LFM-ARM-DA | Grade of filtration 0.01 µm, plastic bowl guard, manual condensate drain, optical differential pressure indicator                         |
| I6  | –    | ■   | MS-LFM-ARV-DA | Grade of filtration 0.01 µm, plastic bowl guard, fully automatic condensate drain, optical differential pressure indicator                |
| I7  | ■    | ■   | MS-LFM-BUV    | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain  |
| I8  | ■    | ■   | MS-LFM-AUV    | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain   |
| I9  | ■    | ■   | MS-LFM-BUV-DA | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, optical differential pressure indicator                           |
| I10   | ■    | ■   | MS-LFM-BRM-DA | Grade of filtration 1 µm, plastic bowl guard, manual condensate drain, optical differential pressure indicator                            |
| I11   | –    | ■   | MS-LFM-BRV-DA | Grade of filtration 1 µm, plastic bowl guard, fully automatic condensate drain, optical differential pressure indicator                   |
| I12   | ■    | ■   | MS-LFM-AUV-DA | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, optical differential pressure indicator                        |
| I13   | ■    | ■   | MS-LFM-BRM-DP | Grade of filtration 1 µm, plastic bowl guard, manual condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)               |
| I14   | –    | ■   | MS-LFM-BRV-DP | Grade of filtration 1 µm, plastic bowl guard, fully automatic condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)      |
| I15   | ■    | ■   | MS-LFM-ARM-DP | Grade of filtration 0.01 µm, plastic bowl guard, manual condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)            |
| I16   | –    | ■   | MS-LFM-ARV-DP | Grade of filtration 0.01 µm, plastic bowl guard, fully automatic condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)   |
| I17   | ■    | ■   | MS-LFM-BUV-DP | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)              |
| I18   | ■    | ■   | MS-LFM-AUV-DP | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, filter contamination indicator (plug M8, PNP, 3-pin)           |

## Service unit combinations MSB4/6, MS series

FESTO

Type codes

| Overview list – Service units MS4/6 |      |                 |                  |  |
|-------------------------------------|------|-----------------|------------------|--|
| Code                                | Size |                 | Type             | Description  |
|                                     | MS4  | MS6             |                  |  |
| Fine and micro filter MS-LFM        |      |                 |                  |  |
| I23                                 | –    | ■               | MS-LFM-BUV-HF    | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, high flow rate   |
| I24                                 | –    | ■               | MS-LFM-AUV-HF    | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, high flow rate  |
| I25                                 | –    | ■               | MS-LFM-BUV-HF-DA | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, high flow rate, optical differential pressure indicator  |
| I26                                 | –    | ■               | MS-LFM-AUV-HF-DA | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, high flow rate, optical differential pressure indicator   |
| I27                                 | –    | ■               | MS-LFM-BUV-HF-DP | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, high flow rate, filter contamination indicator (plug M8, PNP, 3-pin)   |
| I28                                 | –    | ■               | MS-LFM-AUV-HF-DP | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, high flow rate, filter contamination indicator (plug M8, PNP, 3-pin)  |
| I29                                 | –    | ■ <sup>1)</sup> | MS-LFM-ARV-HP    | Grade of filtration 0.01 µm, plastic bowl guard, fully automatic condensate drain, low flow rate suitable for sealing air and cleaning air   |
| I30                                 | –    | ■ <sup>1)</sup> | MS-LFM-BRV-HP    | Grade of filtration 1 µm, plastic bowl guard, fully automatic condensate drain, low flow rate suitable for sealing air and cleaning air  |
| I31                                 | –    | ■ <sup>1)</sup> | MS-LFM-ARV-HP-DP | Grade of filtration 0.01 µm, plastic bowl guard, fully automatic condensate drain, low flow rate suitable for sealing air and cleaning air, filter contamination indicator (plug M8, PNP, 3-pin)                     |
| I32                                 | –    | ■ <sup>1)</sup> | MS-LFM-BRV-HP-DP | Grade of filtration 1 µm, plastic bowl guard, fully automatic condensate drain, low flow rate suitable for sealing air and cleaning air, filter contamination indicator (plug M8, PNP, 3-pin)                        |
| 1) Female thread only with G½ (MS6) |      |                 |                  |  |
| Filter regulator MS-LFR             |      |                 |                  |  |
| J1                                  | ■    | ■               | MS-LFR-D7-ERM-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories          |
| J2                                  | ■    | ■               | MS-LFR-D7-ERV-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories |
| J3                                  | ■    | ■               | MS-LFR-D7-CRM-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories           |
| J4                                  | ■    | ■               | MS-LFR-D7-CRV-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| J5                                  | ■    | ■               | MS-LFR-D6-ERM-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories           |
| J6                                  | ■    | ■               | MS-LFR-D6-ERV-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| J7                                  | ■    | ■               | MS-LFR-D6-CRM-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories            |
| J8                                  | ■    | ■               | MS-LFR-D6-CRV-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| J9                                  | ■    | ■               | MS-LFR-D7-CUM-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories                   |
| J10                                 | ■    | ■               | MS-LFR-D7-CUV-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories          |



## Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6 |      |     |                      |   |
|-------------------------------------|------|-----|----------------------|---|
| Code                                | Size |     | Type                 | Description   |
|                                     | MS4  | MS6 |                      |   |
| Filter regulator MS-LFR             |      |     |                      |   |
| J11                                 | ■    | ■   | MS-LFR-D7-EUM-AS     | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| J12                                 | ■    | ■   | MS-LFR-D7-EUV-AS     | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| J13                                 | ■    | ■   | MS-LFR-D7-ERM-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| J14                                 | ■    | ■   | MS-LFR-D7-ERV-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories                                 |
| J15                                 | ■    | ■   | MS-LFR-D7-CRM-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories   |
| J16                                 | ■    | ■   | MS-LFR-D7-CRV-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories                                  |
| J17                                 | ■    | ■   | MS-LFR-D6-ERM-AD1-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories   |
| J18                                 | ■    | ■   | MS-LFR-D6-ERV-AD1-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories                                  |
| J19                                 | ■    | ■   | MS-LFR-D6-CRM-AD1-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| J20                                 | ■    | ■   | MS-LFR-D6-CRV-AD1-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories                                   |
| J21                                 | ■    | ■   | MS-LFR-D7-EUM-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| J22                                 | ■    | ■   | MS-LFR-D7-EUV-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories   |
| J23                                 | ■    | ■   | MS-LFR-D7-CUM-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories   |
| J24                                 | ■    | ■   | MS-LFR-D7-CUV-AD1-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| J35                                 | ■    | ■   | MS-LFR-D7-ERM-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories          |
| J36                                 | ■    | ■   | MS-LFR-D7-ERV-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories |

## Service unit combinations MSB4/6, MS series

FESTO

Type codes

| Overview list – Service units MS4/6                          |      |                 |                      |  |
|--|------|-----------------|----------------------|--|
| Code   | Size |                 | Type                 | Description  |
|  | MS4  | MS6             |                      |  |
| <b>Filter regulator MS-LFR</b>                               |      |                 |                      |  |
| J37  | ■    | ■               | MS-LFR-D7-CRM-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories          |
| J38  | ■    | ■               | MS-LFR-D7-CRV-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories |
| J39  | ■    | ■               | MS-LFR-D6-ERM-AD7-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories          |
| J40  | ■    | ■               | MS-LFR-D6-ERV-AD7-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories |
| J41  | ■    | ■               | MS-LFR-D6-CRM-AD7-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories           |
| J42  | ■    | ■               | MS-LFR-D6-CRV-AD7-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, plastic bowl guard, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories  |
| J43  | ■    | ■               | MS-LFR-D7-EUM-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories                 |
| J44  | ■    | ■               | MS-LFR-D7-EUV-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories        |
| J45  | ■    | ■               | MS-LFR-D7-CUM-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories                  |
| J46  | ■    | ■               | MS-LFR-D7-CUV-AD7-AS | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories         |
| <b>Activated carbon filter MS-LFX</b>                        |      |                 |                      |  |
| L1   | ■    | ■               | MS-LFX-R             | Plastic bowl guard   |
| L2   | ■    | ■               | MS-LFX-U             | Metal bowl   |
| L3   | –    | ■               | MS-LFX-U-HF          | Metal bowl, high flow rate   |
| L4   | –    | ■ <sup>1)</sup> | MS-LFX-R-HP          | Plastic bowl guard, low flow rate suitable for sealing air and cleaning air  |
| 1) Female thread only with G½ (MS6)                          |      |                 |                      |  |
| <b>Lubricator MS-LOE (not with EX2/EX4 EU certification)</b> |      |                 |                      |  |
| M1   | ■    | ■               | MS-LOE-R             | Plastic bowl guard   |
| M2   | ■    | ■               | MS-LOE-U             | Metal bowl   |

## Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6 |      |     |                    |  |
|-------------------------------------|------|-----|--------------------|--|
| Code                                | Size |     | Type               | Description  |
|                                     | MS4  | MS6 |                    |  |
| Pressure regulator MS-LR            |      |     |                    |  |
| N1                                  | ■    | ■   | MS-LR-D5-AS        | Pressure regulation range 0.3 ... 4 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| N2                                  | ■    | ■   | MS-LR-D6-AS        | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| N3                                  | ■    | ■   | MS-LR-D7-AS        | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| N4                                  | ■    | ■   | MS-LR-D5-AD1-AS    | Pressure regulation range 0.3 ... 4 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| N5                                  | ■    | ■   | MS-LR-D6-AD1-AS    | Pressure regulation range 0.3 ... 7 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories  |
| N6                                  | ■    | ■   | MS-LR-D7-AD1-AS    | Pressure regulation range 0.5 ... 12 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories   |
| N7                                  | ■    | ■   | MS-LR-D5-KD-AS     | Pressure regulation range 0.3 ... 4 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories   |
| N8                                  | ■    | ■   | MS-LR-D6-KD-AS     | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories   |
| N9                                  | ■    | ■   | MS-LR-D7-KD-AS     | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories  |
| N10                                 | ■    | ■   | MS-LR-D5-AD1-KD-AS | Pressure regulation range 0.3 ... 4 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), rotary knob underneath, standard rotary knob with detent, lockable with accessories                                  |
| N11                                 | ■    | ■   | MS-LR-D6-AD1-KD-AS | Pressure regulation range 0.3 ... 7 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), rotary knob underneath, standard rotary knob with detent, lockable with accessories                                  |
| N12                                 | ■    | ■   | MS-LR-D7-AD1-KD-AS | Pressure regulation range 0.5 ... 12 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), rotary knob underneath, standard rotary knob with detent, lockable with accessories                                 |
| N19                                 | ■    | ■   | MS-LR-D5-AD7-AS    | Pressure regulation range 0.3 ... 4 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories                          |
| N20                                 | ■    | ■   | MS-LR-D6-AD7-AS    | Pressure regulation range 0.3 ... 7 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories                          |
| N21                                 | ■    | ■   | MS-LR-D7-AD7-AS    | Pressure regulation range 0.5 ... 12 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories                         |
| N22                                 | ■    | ■   | MS-LR-D5-AD7-KD-AS | Pressure regulation range 0.3 ... 4 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), rotary knob underneath, standard rotary knob with detent, lockable with accessories  |
| N23                                 | ■    | ■   | MS-LR-D6-AD7-KD-AS | Pressure regulation range 0.3 ... 7 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), rotary knob underneath, standard rotary knob with detent, lockable with accessories  |
| N24                                 | ■    | ■   | MS-LR-D7-AD7-KD-AS | Pressure regulation range 0.5 ... 12 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), rotary knob underneath, standard rotary knob with detent, lockable with accessories |
| N28                                 | –    | ■   | MS-LR-D5-VS-DM2    | Pressure regulation range 0.3 ... 4 bar, cover plate, large rotary knob pressure gauge   |
| N29                                 | –    | ■   | MS-LR-D6-VS-DM2    | Pressure regulation range 0.3 ... 7 bar, cover plate, large rotary knob pressure gauge   |
| N30                                 | –    | ■   | MS-LR-D7-VS-DM2    | Pressure regulation range 0.5 ... 12 bar, cover plate, large rotary knob pressure gauge  |
| N31                                 | ■    | –   | MS-LR-D5-VS-DM1    | Pressure regulation range 0.3 ... 4 bar, cover plate, small rotary knob pressure gauge   |
| N32                                 | ■    | –   | MS-LR-D6-VS-DM1    | Pressure regulation range 0.3 ... 7 bar, cover plate, small rotary knob pressure gauge   |
| N33                                 | ■    | –   | MS-LR-D7-VS-DM1    | Pressure regulation range 0.5 ... 12 bar, cover plate, small rotary knob pressure gauge  |

# Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6                 |                 |                 |                     |   |
|---|-----------------|-----------------|---------------------|---|
| Code  | Size            |                 | Type                | Description   |
|   | MS4             | MS6             |                     |   |
| Pressure regulator MS-LRB                           |                 |                 |                     |   |
| 01  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AS        | Pressure regulation range 0.3 ... 4 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block   |
| 02  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AS        | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block   |
| 03  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AS        | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block  |
| 04  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AS-BD     | Pressure regulation range 0.3 ... 4 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8   |
| 05  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AS-BD     | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8   |
| 06  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AS-BD     | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| 07  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-A8-AS     | Pressure regulation range 0.3 ... 4 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block                                      |
| 08  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-A8-AS     | Pressure regulation range 0.3 ... 7 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block                                      |
| 09  | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-A8-AS     | Pressure regulation range 0.5 ... 12 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block                                     |
| 010   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AD1-AS    | Pressure regulation range 0.3 ... 4 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block    |
| 011   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AD1-AS    | Pressure regulation range 0.3 ... 7 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block    |
| 012   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AD1-AS    | Pressure regulation range 0.5 ... 12 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block   |
| 013   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AD1-AS-BD | Pressure regulation range 0.3 ... 4 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| 014   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AD1-AS-BD | Pressure regulation range 0.3 ... 7 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| 015   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AD1-AS-BD | Pressure regulation range 0.5 ... 12 bar, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8 |
| 016   | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-VS-KD-AS  | Pressure regulation range 0.3 ... 4 bar, cover plate, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block  |
| 1) Female thread only with G3/4 (MS4) or G1/2 (MS6) |                 |                 |                     |   |

# Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6 |                 |                 |                     |   |
|-------------------------------------|-----------------|-----------------|---------------------|---|
| Code                                | Size            |                 | Type                | Description   |
|                                     | MS4             | MS6             |                     |   |
| Pressure regulator MS-LRB           |                 |                 |                     |   |
| O17                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-VS-KD-AS  | Pressure regulation range 0.3 ... 7 bar, cover plate, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block  |
| O18                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-VS-KD-AS  | Pressure regulation range 0.5 ... 12 bar, cover plate, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block   |
| O19                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-KD-AS-BD  | Pressure regulation range 0.3 ... 4 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8   |
| O20                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-KD-AS-BD  | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8   |
| O21                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-KD-AS-BD  | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| O22                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AD7-AS    | Pressure regulation range 0.3 ... 4 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block    |
| O23                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AD7-AS    | Pressure regulation range 0.3 ... 7 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block    |
| O24                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AD7-AS    | Pressure regulation range 0.5 ... 12 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front without angled outlet block   |
| O25                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D5-AD7-AS-BD | Pressure regulation range 0.3 ... 4 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| O26                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D6-AD7-AS-BD | Pressure regulation range 0.3 ... 7 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8  |
| O27                                 | ■ <sup>1)</sup> | ■ <sup>1)</sup> | MS-LRB-D7-AD7-AS-BD | Pressure regulation range 0.5 ... 12 bar, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact), standard rotary knob with detent, lockable with accessories, pressure output to rear/front with angled outlet block QS-8 |
| O28                                 | –               | ■ <sup>1)</sup> | MS-LRB-D5-VS-DM2    | Pressure regulation range 0.3 ... 4 bar, cover plate, large rotary knob pressure gauge, pressure output to rear/front without angled outlet block   |
| O29                                 | –               | ■ <sup>1)</sup> | MS-LRB-D6-VS-DM2    | Pressure regulation range 0.3 ... 7 bar, cover plate, large rotary knob pressure gauge, pressure output to rear/front without angled outlet block   |
| O30                                 | –               | ■ <sup>1)</sup> | MS-LRB-D7-VS-DM2    | Pressure regulation range 0.5 ... 12 bar, cover plate, large rotary knob pressure gauge, pressure output to rear/front without angled outlet block  |
| O31                                 | ■ <sup>1)</sup> | –               | MS-LRB-D5-VS-DM1    | Pressure regulation range 0.3 ... 4 bar, cover plate, small rotary knob pressure gauge, pressure output to rear/front without angled outlet block   |
| O32                                 | ■ <sup>1)</sup> | –               | MS-LRB-D6-VS-DM1    | Pressure regulation range 0.3 ... 7 bar, cover plate, small rotary knob pressure gauge, pressure output to rear/front without angled outlet block   |
| O33                                 | ■ <sup>1)</sup> | –               | MS-LRB-D7-VS-DM1    | Pressure regulation range 0.5 ... 12 bar, cover plate, small rotary knob pressure gauge, pressure output to rear/front without angled outlet block  |

1) Female thread only with G<sup>1</sup>/<sub>4</sub> (MS4) or G<sup>1</sup>/<sub>2</sub> (MS6)

## Service unit combinations MSB4/6, MS series

FESTO

Type codes

| Overview list – Service units MS4/6   |      |                 |                  |   |
|---|------|-----------------|------------------|---|
| Code  | Size |                 | Type             | Description   |
|   | MS4  | MS6             |                  |   |
| <b>Precision pressure regulator MS-LRP</b>                                    |      |                 |                  |   |
| P1  | –    | ■ <sup>1)</sup> | MS-LRP-D2-A8     | Pressure regulation range 0.05 ... 0.7 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent   |
| P2  | –    | ■               | MS-LRP-D4-A8     | Pressure regulation range 0.05 ... 2.5 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent   |
| P3  | –    | ■               | MS-LRP-D5-A8     | Pressure regulation range 0.1 ... 4 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent  |
| P4  | –    | ■               | MS-LRP-D7-A8     | Pressure regulation range 0.1 ... 12 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent   |
| <b>Precision pressure regulator MS-LRPB</b>                                   |      |                 |                  |   |
| R1  | –    | ■ <sup>1)</sup> | MS-LRPB-D2-A8    | Pressure regulation range 0.05 ... 0.7 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front without angled outlet block    |
| R2  | –    | ■ <sup>1)</sup> | MS-LRPB-D4-A8    | Pressure regulation range 0.05 ... 2.5 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front without angled outlet block    |
| R3  | –    | ■ <sup>1)</sup> | MS-LRPB-D5-A8    | Pressure regulation range 0.1 ... 4 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front without angled outlet block       |
| R4  | –    | ■ <sup>1)</sup> | MS-LRPB-D7-A8    | Pressure regulation range 0.1 ... 12 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front without angled outlet block      |
| R5  | –    | ■ <sup>1)</sup> | MS-LRPB-D2-A8-BD | Pressure regulation range 0.05 ... 0.7 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-8  |
| R6  | –    | ■ <sup>1)</sup> | MS-LRPB-D4-A8-BD | Pressure regulation range 0.05 ... 2.5 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-8  |
| R7  | –    | ■ <sup>1)</sup> | MS-LRPB-D5-A8-BD | Pressure regulation range 0.1 ... 4 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-8     |
| R8  | –    | ■ <sup>1)</sup> | MS-LRPB-D7-A8-BD | Pressure regulation range 0.1 ... 12 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-8    |
| R9  | –    | ■ <sup>1)</sup> | MS-LRPB-D2-A8-BE | Pressure regulation range 0.05 ... 0.7 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-10 |
| R10   | –    | ■ <sup>1)</sup> | MS-LRPB-D4-A8-BE | Pressure regulation range 0.05 ... 2.5 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-10 |
| R11   | –    | ■ <sup>1)</sup> | MS-LRPB-D5-A8-BE | Pressure regulation range 0.1 ... 4 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-10    |
| R12   | –    | ■ <sup>1)</sup> | MS-LRPB-D7-A8-BE | Pressure regulation range 0.1 ... 12 bar, adapter plate for EN pressure gauge 1/8, standard rotary knob with detent, pressure output to rear/front with angled outlet block QS-10   |
| 1) Female thread only with G1/2 (MS6)   |      |                 |                  |   |
| <b>Electric pressure regulator MS-LRE (not with EX2/EX4 EU certification)</b> |      |                 |                  |   |
| S1  | –    | ■               | MS-LRE-D6        | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge   |
| S2  | –    | ■               | MS-LRE-D7        | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge  |
| S3  | –    | ■               | MS-LRE-D6-PI     | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, electrical pressure output (integrated pressure sensor with current output, plug M8x1, 3-pin)                |
| S4  | –    | ■               | MS-LRE-D7-PI     | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, electrical pressure output (integrated pressure sensor with current output, plug M8x1, 3-pin)               |
| S5  | –    | ■               | MS-LRE-D6-PU     | Pressure regulation range 0.3 ... 7 bar, integrated MS pressure gauge, electrical pressure output (integrated pressure sensor with voltage output, plug M8x1, 3-pin)                |
| S6  | –    | ■               | MS-LRE-D7-PU     | Pressure regulation range 0.5 ... 12 bar, integrated MS pressure gauge, electrical pressure output (integrated pressure sensor with voltage output, plug M8x1, 3-pin)               |

# Service unit combinations MSB4/6, MS series

Type codes

| Overview list – Service units MS4/6                                    |      |                 |                          |   |
|--|------|-----------------|--------------------------|---|
| Code   | Size |                 | Type                     | Description   |
|  | MS4  | MS6             |                          |   |
| Flow sensor SFAM   |      |                 |                          |   |
| U5   | –    | ■ <sup>1)</sup> | SFAM-1000-M-2SA-M12      | Flow measuring range 10 ... 1,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U6   | –    | ■ <sup>1)</sup> | SFAM-1000-M-2SV-M12      | Flow measuring range 10 ... 1,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |
| U7   | –    | ■ <sup>1)</sup> | SFAM-3000-M-2SA-M12      | Flow measuring range 30 ... 3,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U8   | –    | ■ <sup>1)</sup> | SFAM-3000-M-2SV-M12      | Flow measuring range 30 ... 3,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |
| U9   | –    | ■ <sup>1)</sup> | SFAM-5000-M-2SA-M12      | Flow measuring range 50 ... 5,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U10  | –    | ■ <sup>1)</sup> | SFAM-5000-M-2SV-M12      | Flow measuring range 50 ... 5,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |
| Soft-start and exhaust valve MS-SV (not with EX2/EX4 EU certification) |      |                 |                          |   |
| V1   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AG      | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, integrated MS pressure gauge, without multi-pin plug socket  |
| V2   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AG         | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, integrated MS pressure gauge, without multi-pin plug socket   |
| V3   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AD1        | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), without multi-pin plug socket  |
| V4   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AD1     | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), without multi-pin plug socket   |
| V5   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AG-MP1  | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, integrated MS pressure gauge, multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static)   |
| V6   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AG-MP1     | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, integrated MS pressure gauge, multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static)  |
| V7   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AD1-MP1    | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static) |
| V8   | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AD1-MP1 | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static)    |
| V12  | –    | ■ <sup>1)</sup> | MS-SV-C-10V24-S          | Performance level "c", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, silencer, cover plate   |
| V22  | –    | ■ <sup>1)</sup> | MS-SV-C-10V24-S-AD7      | Performance level "c", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, silencer, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact)   |
| V27  | –    | ■ <sup>1)</sup> | MS-SV-E-ASIS-AG          | Performance level "e", supply voltage 22 ... 31.6 V DC (AS-I Safety at Work, SPEC 3.0, Profile 7.5.5), operating pressure 3.5 ... 10 bar, without silencer, integrated MS pressure gauge  |
| V28  | –    | ■ <sup>1)</sup> | MS-SV-E-ASIS-SO-AG       | Performance level "e", supply voltage 22 ... 31.6 V DC (AS-I Safety at Work, SPEC 3.0, Profile 7.5.5), operating pressure 3.5 ... 10 bar, open silencer, integrated MS pressure gauge   |

1) Female thread only with G½ (MS6)

## Service unit combinations MSB4/6, MS series

FESTO

Type codes

| Overview list – Service units MS4/6                                    |      |                 |                           |  |
|--|------|-----------------|---------------------------|--|
| Code   | Size |                 | Type                      | Description  |
|  | MS4  | MS6             |                           |  |
| Soft-start and exhaust valve MS-SV (not with EX2/EX4 EU certification) |      |                 |                           |  |
| V31  | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AG-MP3   | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, integrated MS pressure gauge, multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static, short-circuit detection possible)  |
| V32  | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AG-MP3      | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, integrated MS pressure gauge, multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static, short-circuit detection possible)   |
| V33  | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-AD1-MP3     | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, without silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static, short-circuit detection possible)        |
| V34  | –    | ■ <sup>1)</sup> | MS-SV-E-10V24-SO-AD1-MP3  | Performance level "e", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, open silencer, pressure sensor with LCD display (plug M8, 1 switching output PNP, 3-pin), multi-pin plug socket (Sub-D, 9-pin, screw terminal, without cable, enable signals static, short-circuit detection possible)           |
| V37  | –    | ■ <sup>1)</sup> | MS-SV-D-10V24-2M8         | Performance level "d", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, electrical connection to EN 175301-803 (2 x plug connectors, 2-pin, type C), 2 proximity sensors SMT with cable (plug connector M8x1, 3-pin, rotatable thread, cable length 0.3 m), without silencer, cover plate                |
| V38  | –    | ■ <sup>1)</sup> | MS-SV-D-10V24-2M8-SO-AG   | Performance level "d", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, electrical connection to EN 175301-803 (2 x plug connectors, 2-pin, type C), 2 proximity sensors SMT with cable (plug connector M8x1, 3-pin, rotatable thread, cable length 0.3 m), open silencer, integrated MS pressure gauge  |
| V39  | –    | ■ <sup>1)</sup> | MS-SV-D-10V24P-2M12-SO-AG | Performance level "d", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, electrical connection to IEC 61076-2-101 (2 x plug connectors M12x1, 2-pin), 2 proximity sensors SMT with cable (plug connector M12x1, 3-pin, rotatable thread, cable length 0.3 m), open silencer, integrated MS pressure gauge |
| V40  | –    | ■ <sup>1)</sup> | MS-SV-D-10V24-20E-SO-AG   | Performance level "d", supply voltage 24 V DC, operating pressure 3.5 ... 10 bar, electrical connection to EN 175301-803 (2 x plug connectors, 2-pin, type C), 2 proximity sensors SMT with cable (open end, 3-wire, cable length 5 m), open silencer, integrated MS pressure gauge                                |
| 1) Female thread only with G½ (MS6)                                    |      |                 |                           |  |
| Water separator MS-LWS   |      |                 |                           |  |
| W1   | –    | ■               | MS-LWS-U-V                | Metal bowl, fully automatic condensate drain   |



# Service unit combinations MSB9, MS series

Type codes

MSB 9 - G : : : ... : - WP - - -

| Series |                                   |
|--------|-----------------------------------|
| MSB    | Standard service unit combination |

| Size |                      |
|------|----------------------|
| 9    | Grid dimension 90 mm |

| Pneumatic connection |   |
|----------------------|---|
| 3/4                  | Female thread G3/4  |
| 1                    | Female thread G1  |
| AGD                  | Connecting plate G1/2   |
| AGE                  | Connecting plate G3/4   |
| AGF                  | Connecting plate G1   |
| AGG                  | Connecting plate G1 1/4   |
| AGH                  | Connecting plate G1 1/2   |
| N3/4                 | Female thread NPT3/4  |
| N1                   | Female thread NPT1  |
| AQR                  | Connecting plate NPT1/2   |
| AQS                  | Connecting plate NPT3/4   |
| AQT                  | Connecting plate NPT1   |
| AQU                  | Connecting plate NPT1 1/4   |
| AQV                  | Connecting plate NPT1 1/2   |
| G                    | Module without connecting thread, without connecting plate                      |
| NG                   | Module without connecting thread, without connecting plate (port 2 or 3 in NPT) |

| Service unit equipment |                           |             |
|------------------------|---------------------------|-------------|
| Position 1             | Selection → Overview list | Position 1  |
| Position 2             |                           | Position 2  |
| ...                    |                           | ...         |
| Position 10            |                           | Position 10 |

| Type of mounting |                                     |
|------------------|-------------------------------------|
|                  | Without mounting bracket            |
| WP               | Mounting bracket                    |
| WPB              | Mounting bracket for large wall gap |
| WPM              | Mounting bracket                    |

| EU certification |                                |
|------------------|--------------------------------|
|                  | None                           |
| EX2              | II 3GD to EU Directive 94/9/EG |
| EX4              | II 2GD to EU Directive 94/9/EG |

| UL certification |   |
|------------------|---|
|                  | None  |
| UL1              | cULus, ordinary location for Canada and USA |

| Flow direction |                    |
|----------------|--------------------|
|                | From left to right |
| Z              | From right to left |

## Service unit combinations MSB9, MS series

FESTO

Type codes

| Overview list – Service units MS9         |                        |   |
|---|------------------------|---|
| Code                                      | Type                   | Description   |
| On-off valve MS-EM, manually actuated     |                        |   |
| C2  | MS-EM-S-VS             | Silencer, cover plate   |
| On-off valve MS-EE, electrically actuated |                        |   |
| D4  | MS-EE-V24-S-VS         | Supply voltage 24 V DC, operating pressure 3.5 ... 16 bar, silencer, cover plate  |
| Branching module MS-FRM                   |                        |   |
| F1  | MS-FRM-VS              | Cover plate   |
| F3  | MS-FRM-VS-Y            | Cover plate, pressure switch PEV without display (plug socket, EN 175 301, type A, cube)  |
| F8  | MS-FRM-VS-M12          | Cover plate, pressure switch PEV without display (plug socket, round, M12, 4-pin)   |
| Filter MS-LF                              |                        |   |
| H5  | MS-LF-CUM              | Grade of filtration 5 µm, metal bowl, manual condensate drain   |
| H6  | MS-LF-CUV              | Grade of filtration 5 µm, metal bowl, fully automatic condensate drain  |
| H7  | MS-LF-EUV              | Grade of filtration 40 µm, metal bowl, fully automatic condensate drain   |
| H8  | MS-LF-EUM              | Grade of filtration 40 µm, metal bowl, manual condensate drain  |
| Fine and micro filter MS-LFM              |                        |   |
| I7  | MS-LFM-BUV             | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain  |
| I8  | MS-LFM-AUV             | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain   |
| I9  | MS-LFM-BUV-DA          | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, optical differential pressure indicator   |
| I12                                       | MS-LFM-AUV-DA          | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, optical differential pressure indicator  |
| I23                                       | MS-LFM-BUV-HF          | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, high flow rate  |
| I24                                       | MS-LFM-AUV-HF          | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, high flow rate   |
| I25                                       | MS-LFM-BUV-HF-DA       | Grade of filtration 1 µm, metal bowl, fully automatic condensate drain, high flow rate, optical differential pressure indicator   |
| I26                                       | MS-LFM-AUV-HF-DA       | Grade of filtration 0.01 µm, metal bowl, fully automatic condensate drain, high flow rate, optical differential pressure indicator  |
| Filter regulator MS-LFR                   |                        |   |
| J47                                       | MS-LFR-D6-EUM-DI-AG-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, directly actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories          |
| J50                                       | MS-LFR-D6-EUV-DI-AG-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, directly actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories |
| J53                                       | MS-LFR-D6-CUM-DI-AG-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, directly actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories           |
| J56                                       | MS-LFR-D6-CUV-DI-AG-AS | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, directly actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| J59                                       | MS-LFR-D6-EUM-AG-AS    | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories             |
| J62                                       | MS-LFR-D6-EUV-AG-AS    | Pressure regulation range 0.3 ... 7 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories    |
| J65                                       | MS-LFR-D6-CUM-AG-AS    | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories              |
| J68                                       | MS-LFR-D6-CUV-AG-AS    | Pressure regulation range 0.3 ... 7 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories     |

## Service unit combinations MSB9, MS series

Type codes

| Overview list – Service units MS9                                   |                       |   |
|---|-----------------------|---|
| Code  | Type                  | Description   |
| <b>Filter regulator MS-LFR</b>                                      |                       |   |
| J71   | MS-LFR-D7-CUM-AG-AS   | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, manual condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories           |
| J72   | MS-LFR-D7-CUV-AG-AS   | Pressure regulation range 0.5 ... 12 bar, grade of filtration 5 µm, metal bowl, fully automatic condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| J73   | MS-LFR-D7-EUM-AG-AS   | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, manual condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories          |
| J74   | MS-LFR-D7-EUV-AG-AS   | Pressure regulation range 0.5 ... 12 bar, grade of filtration 40 µm, metal bowl, fully automatic condensate drain, pilot actuated filter diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories |
| <b>Activated carbon filter MS-LFX</b>                               |                       |   |
| L2  | MS-LFX-U              | Metal bowl  |
| <b>Lubricator MS-LOE (not with EX2/EX4 EU certification)</b>        |                       |   |
| M2  | MS-LOE-U              | Metal bowl  |
| <b>Pressure regulator MS-LR</b>                                     |                       |   |
| N1  | MS-LR-D5-DI-AG-AS     | Pressure regulation range 0.3 ... 4 bar, directly actuated diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| N2  | MS-LR-D6-DI-AG-AS     | Pressure regulation range 0.3 ... 7 bar, directly actuated diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| N7  | MS-LR-D5-DI-AG-KD-AS  | Pressure regulation range 0.3 ... 4 bar, directly actuated diaphragm regulator, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories   |
| N8  | MS-LR-D6-DI-AG-KD-AS  | Pressure regulation range 0.3 ... 7 bar, directly actuated diaphragm regulator, integrated MS pressure gauge, rotary knob underneath, standard rotary knob with detent, lockable with accessories   |
| N35   | MS-LR-D5-AG-AS        | Pressure regulation range 0.3 ... 4 bar, pilot actuated diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| N36   | MS-LR-D6-AG-AS        | Pressure regulation range 0.3 ... 7 bar, pilot actuated diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories  |
| N37   | MS-LR-D7-AG-AS        | Pressure regulation range 0.5 ... 12 bar, pilot actuated diaphragm regulator, integrated MS pressure gauge, standard rotary knob with detent, lockable with accessories   |
| <b>Flow sensor SFAM (only in flow direction from left to right)</b> |                       |   |
| U9  | SFAM-5000L-M-2SA-M12  | Flow measuring range 50 ... 5,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U10   | SFAM-5000L-M-2SV-M12  | Flow measuring range 50 ... 5,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |
| U11   | SFAM-10000L-M-2SA-M12 | Flow measuring range 100 ... 10,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U12   | SFAM-10000L-M-2SV-M12 | Flow measuring range 100 ... 10,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |
| U13   | SFAM-15000L-M-2SA-M12 | Flow measuring range 150 ... 15,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 4 ... 20 mA), electrical connection (plug M12x1, 5-pin)  |
| U14   | SFAM-15000L-M-2SV-M12 | Flow measuring range 150 ... 15,000 l/min, electrical output (2x PNP or NPN, 1 analogue output 0 ... 10 V), electrical connection (plug M12x1, 5-pin)   |

## Service unit combinations MSB9, MS series

Type codes

| Overview list – Service units MS9  |                   |  |
|--|-------------------|--|
| Code   | Type              | Description  |
| Soft-start/quick exhaust valve MS-SV (not with EX2/EX4 EU certification) |                   |  |
| V12  | MS-SV-C-V24-S-VS  | Performance Level "c", supply voltage 24 V DC, silencer, cover plate   |
| V22  | MS-SV-C-V24-S-AD7 | Performance Level "c", supply voltage 24 V DC, silencer, pressure sensor with operational status indicator (plug M8, threshold value comparator, PNP, N/O contact) |
| Water separator MS-LWS   |                   |  |
| W1   | MS-LWS-U-V        | Metal bowl, fully automatic condensate drain   |

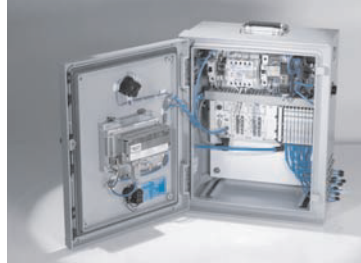
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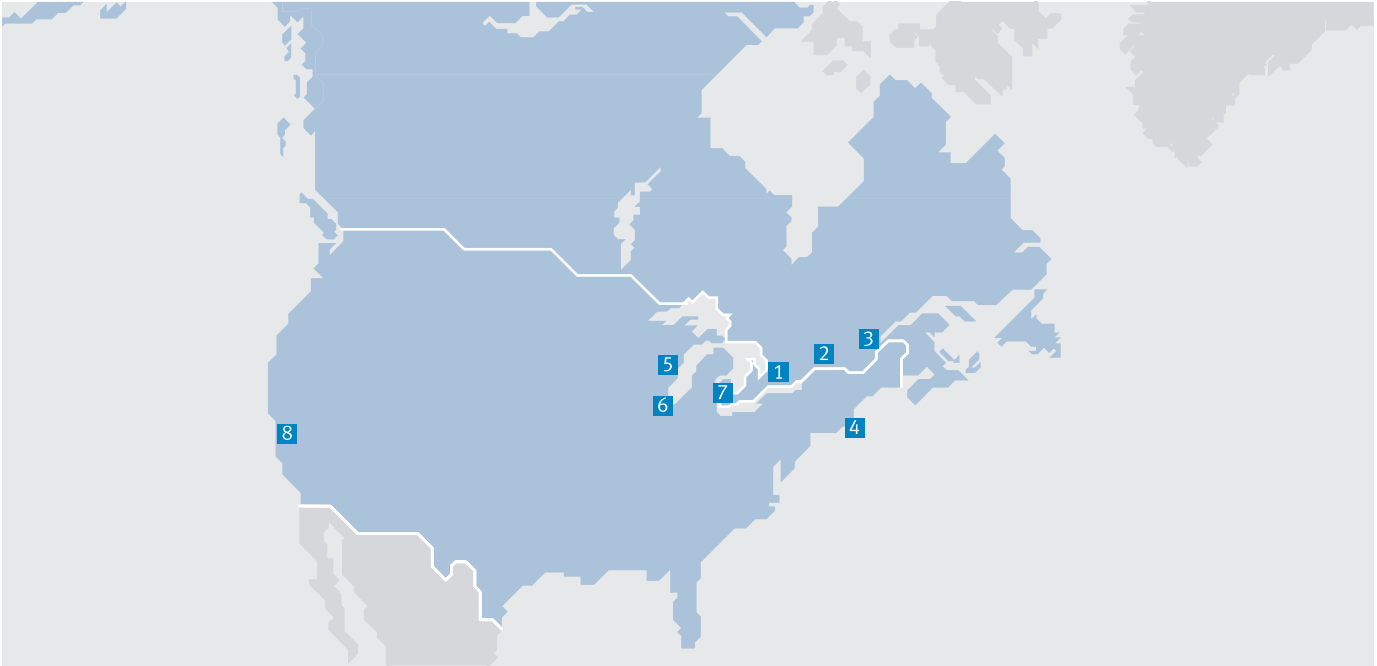


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