



Donaldson  
FILTRATION SOLUTIONS

# Compressed Air Filtration

## Ultra-Filter

DF

### MAIN FEATURES & BENEFITS:

- Innovative filtration technology, high retention rate, low pressure loss
- Validated performance data acc. to ISO 12500-1, ISO 12500-2 and ISO 12500-3, reliable achievement of compressed air quality acc. to ISO 8573-1
- Intelligent overall concept meet requirements of industrial air purification
- Flow-optimised design, minimum pressure loss for economic compressed air purification (saving of energy costs)
- Compact, service friendly construction due to bayonet fixing, low space requirement and simply handling during exchange of filter element
- Unrivalled flexibility, changing the coding clip inside the filter bowl allows the change of the flow direction, combination of several filters possible due to an adapter

### INDUSTRIES



- Chemical and pharmaceutical industry



- PCB assembly and CD manufacturing



- Surface finishing



- Machine building industry and plant engineering / construction



- Energy and power generation



Version  
Superplus

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Donaldson®  
Ultrafilter

## PRODUCT DESCRIPTION

The filters Ultra-Filter DF are intended for the processing of compressed air or other gases in different areas of applications.

The intelligent overall concept of the filter unites the following characteristics:

- high performance
- efficiency
- compactness
- easy of use
- flexibility
- safety

Validated performance data acc. to ISO 12500-1, ISO 12500-2 and ISO 12500-3 for reliable achievement of compressed air quality suitable to the application acc. to ISO 8573-1.

Besides energy cost savings by the filter design, the use of the Economizer offers further saving achievements through timely replacement of the used filter elements. The most cost-effective replacement time for the filter element is calculated and LEDs then signal that the „filter exchange“ is necessary.

With 9 sizes the Ultra-Filter covers the performance range from 35 to 1100 m<sup>3</sup>/h flow rate and hence conventional compressor capacities between 2 and 120 KW.

Three versions are available:

### Standard

Float condensate drain and Econometer / with element A with plug, without Econometer.

### Plus

Float condensate drain and Economizer / with element A with plug and Economizer.

### Superplus

Level-controlled condensate drain UFM-D and Economizer.



**Filter combination with adapter**

A selection of appropriate filter grades by filter element types S, M, V, B, P, A ensure that the right product for the filtration task is always available to the user.

The filter housing design allows an easy replacement of the filter element. The filter bowl is rotated slightly via a bayonet lock and can be removed together with the filter element.

For this a installation height of only a few centimetres of ground clearance is necessary.

### The DF filter is designed and developed for the following applications:

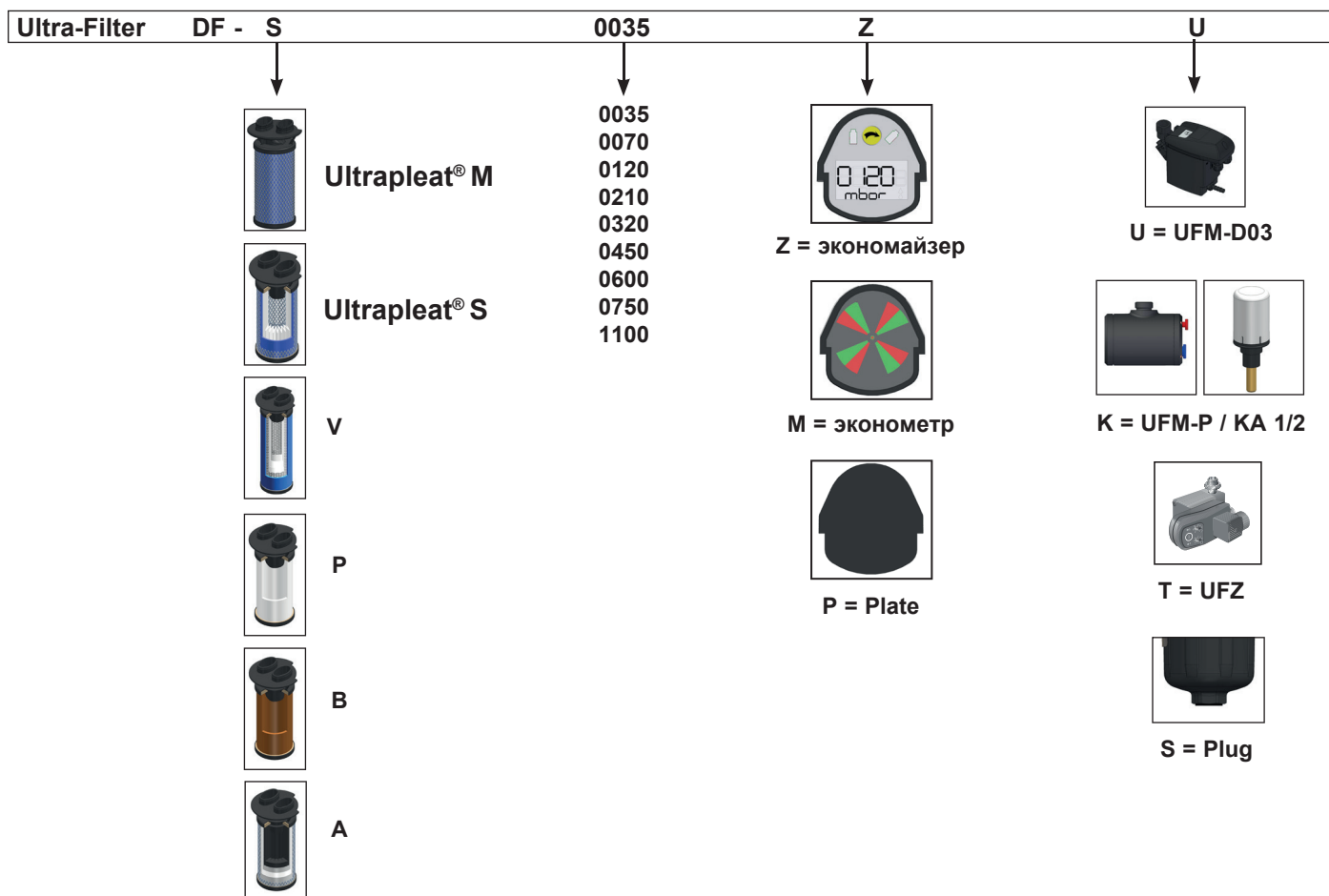
- **Central compressed air processing:**  
Pre-filter for the protection of fridge dryers, high performance coalescence filter for the removal of oil and water aerosols as well as particles
- **Downstream applications:**  
Final filtration for control and process air
- **Adsorption dryers:**  
Pre-filter to protect adsorption dryers (M), dust filter downstream adsorption dryers (M)
- **Automotive industry:**  
Purification of paint and lacquering finishing air

## PRODUCT SPECIFICATIONS

| Features   | Benefits   |
|--|--|
| Validated performance data acc. to ISO 12500-1, ISO 12500-2 and ISO 12500-3  | Reliable achievement of compressed air quality acc. to ISO 8573-1  |
| Intelligent overall concept  | Flow range, filtration grades, efficiencies and available options perfectly meet requirements of industrial air purification |
| Flow-optimised filter housing and filter element design  | Low pressure losses, thereby saving of energy costs  |
| Bayonet fixing between filter head and filter bowl; element can be removed together with filter bowl; filter head with integrated differential pressure indicator can be rotated | Easy to use construction - simplified filter replacement; simple installation and assembly                                   |
| Little installation height for the filter element exchange, differential pressure indicator integrated in filter head  | Compact, space-saving construction - installation within smallest space possible   |
| Changing the coding clip inside the filter cover allows the filter element to be rotated and thus change the flow direction  | High flexibility - filters can be either used as coalescence filters or particulate filters                                  |
| Filter cannot be opened under pressure due to bayonet lock   | High safety during operation   |
| Filter housings immersion-laquererd on the inside and outside surface  | Ensures long-term corrosion protection, also against aggressive condensates  |

| Filter Elements (for detailed performance data see separate data sheet)   |  |        |
|---|--|--------|
| P-filter<br>Particle filter   | Initial differential pressure : 0,15 bar<br>Efficiency : 100% related to 25 µm                         | 1      |
| B-filter<br>Particle filter   | Initial differential pressure : 0,12 bar<br>Efficiency : 100% bezogen auf 25 µm                        | 1      |
| A-filter<br>Activated carbon filter   | Initial differential pressure : 0,13 bar<br>Residual oil content (total) : 0,003 mg/m <sup>3</sup>     | 1<br>3 |
| V-filter<br>Coalescence filter / particle filter  | Initial differential pressure : 0,11 bar<br>Residual oil content (aerosols) : < 0,2 mg/m <sup>3</sup>  | 1<br>2 |
| M-Filter / Ultrapleat® M<br>Coalescence filter / particle filter  | Initial differential pressure : 0,08 bar<br>Residual oil content (aerosols) : < 0,02 mg/m <sup>3</sup> | 1<br>2 |
| S-Filter / Ultrapleat® S<br>Coalescence filter / particle filter  | Initial differential pressure : 0,10 bar<br>Residual oil content (aerosols) : < 0,01 mg/m <sup>3</sup> | 1<br>2 |
| 1 related to nominal performance at 7 bar, dry condition<br>2 related to a inlet concentration of 3 mg/m <sup>3</sup><br>3 when upstream connected a M- or S-filter |  |        |

OPTIONS



| Options            |  |
|--------------------|--|
| Econometer         | Mechanical differential pressure indicator   |
| Economizer         | Differential pressure indicator for the determination of the most economical time for replacement of the filter element; Possibility of remote data transmission |
| KA ½ / UFM-P       | Float drain, pneumatically   |
| UFM-D              | Electronic level-controlled condensate drain without compressed air losses   |
| UFZ                | Time-controlled condensate drain   |
| S                  | Plug   |
| Filter elements    | V / Ultrapleat® M / Ultrapleat® S (Coalescence filter / particle filter)<br>P / B (Pre-filter / particulate filter)<br>A (Activated carbon filter)               |
| Wall bracket       | Distance to the wall gradelessly adjustable (except DF-0035)   |
| Connection adapter | Intelligent adapter solution for filter combination  |

MATERIALS/ DIMENSIONS

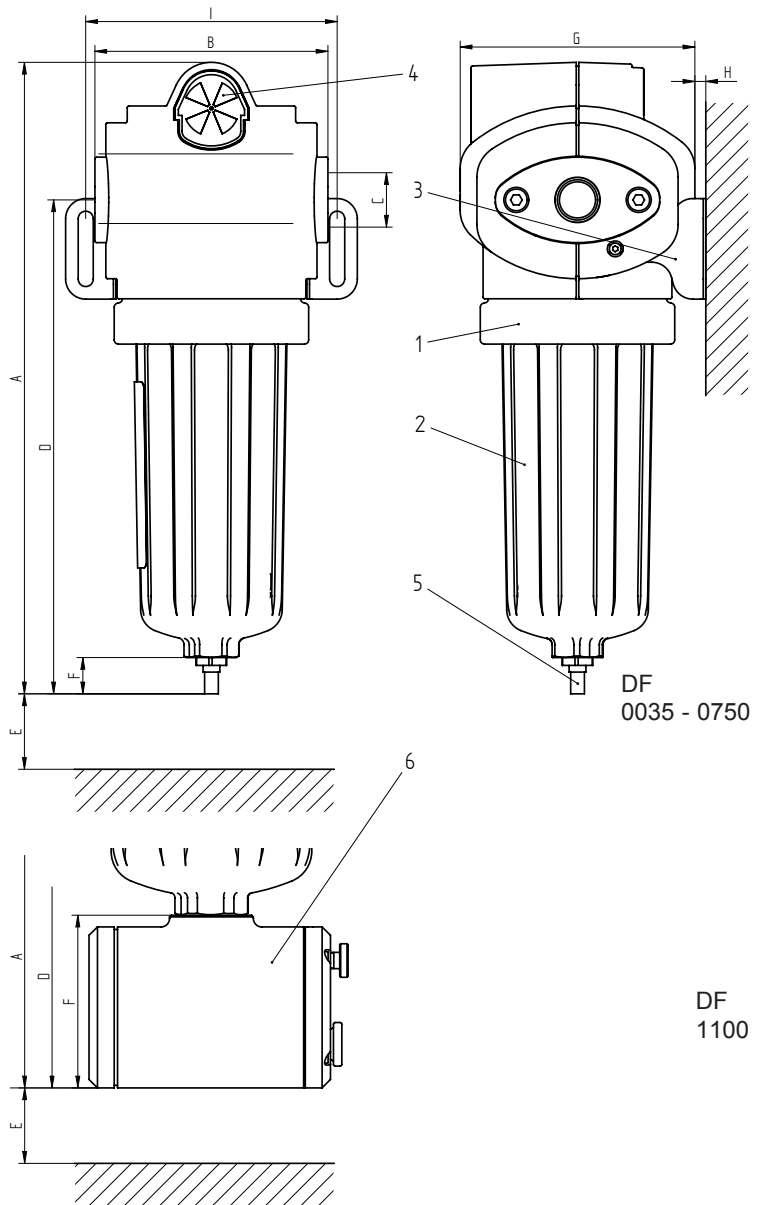
STANDARD

| Pos.                     | Pcs. | Description                        |
|--------------------------|------|------------------------------------|
| 1                        | 1    | Filter head                        |
| 2                        | 1    | Lower housing bowl                 |
| 3                        | 2    | Wall bracket (option)              |
| 4                        | 1    | Econometer                         |
| 5<br>DF 0035-<br>DF 0750 | 1    | Internal automatic<br>drain KA 1/2 |
| 6<br>DF 1100             | 1    | External automatic<br>drain UFM-P  |

| Materials filter housing |                                  |
|--------------------------|----------------------------------|
| Filter housing           | Aluminium die cast               |
| Econometer               | Polymer                          |
| Float drain              | Polymer /<br>aluminium mold cast |
| Sealings                 | Viton                            |

| Classification acc. to 2014 / 68 / EU<br>for fluids group 2 |                |
|---|----------------|
| DF 0035 - DF 0320   | Art. 4, par. 3 |
| DF 0450 - DF 1100   | Cat. I         |

|                             |              |
|-----------------------------|--------------|
| Max. operating pressure     | 16 bar       |
| Test pressure               | 22,9 bar     |
| Perm. operating temperature | +1°C / +65°C |



| Size housing/<br>element | Flow rate*<br>m³/h | Volume<br>(l) | Weight**<br>(kg) | A<br>mm | B<br>mm | C       | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>min./ max.<br>mm | I<br>mm |
|--------------------------|--------------------|---------------|------------------|---------|---------|---------|---------|---------|---------|---------|-----------------------|---------|
| 0035                     | 35                 | 0,20          | 0,5              | 255     | 76      | G 1/4   | 185     | 100     | 27      | 85      | 5                     | 84      |
| 0070                     | 70                 | 0,40          | 0,9              | 297     | 103     | G 3/8   | 222     | 115     | 27      | 107     | 5 / 34                | 107     |
| 0120                     | 120                | 0,50          | 1,0              | 340     | 103     | G 1/2   | 265     | 150     | 27      | 107     | 5 / 34                | 107     |
| 0210                     | 210                | 1,15          | 2,0              | 382     | 139     | G 3/4   | 300     | 180     | 27      | 140     | 5 / 53                | 150     |
| 0320                     | 320                | 1,50          | 2,2              | 442     | 139     | G 1     | 360     | 250     | 27      | 140     | 5 / 53                | 150     |
| 0450                     | 450                | 5             | 5,2              | 585     | 190     | G 1 1/4 | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 0600                     | 600                | 5             | 5,2              | 585     | 190     | G 1 1/2 | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 0750                     | 750                | 5             | 5,2              | 585     | 190     | G 2     | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 1100                     | 1100               | 6             | 7,2              | 765     | 190     | G 2     | 665     | 250     | 103     | 203     | 5 / 73                | 190     |

\* Nominal flow at 7 bar g, m³/h related to 1 bar abs. and 20°C

\*\* without filter element

MATERIALS/ DIMENSIONS

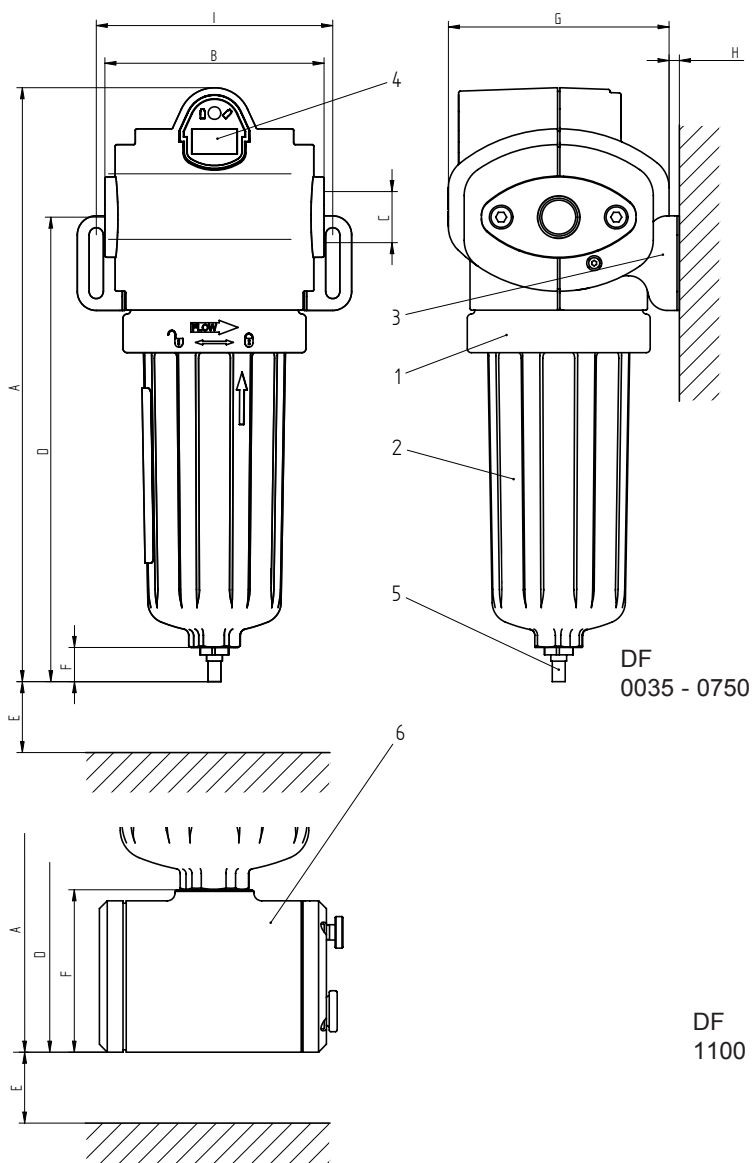
PLUS

| Pos.                    | Pcs. | Description                        |
|-------------------------|------|------------------------------------|
| 1                       | 1    | Filter head                        |
| 2                       | 1    | Lower housing bowl                 |
| 3                       | 2    | Wall bracket (option)              |
| 4                       | 1    | Economizer                         |
| 5<br>DF 0035-DF<br>0750 | 1    | Internal automatic<br>drain KA 1/2 |
| 6<br>DF 1100            | 1    | External automatic<br>drain UFM-P  |

| Materials filter housing |                                  |
|--------------------------|----------------------------------|
| Filter housing           | Aluminium die cast               |
| Economizer               | Polymer                          |
| Float drain              | Polymer /<br>aluminium mold cast |
| Sealings                 | Viton                            |

| Classification acc. to 2014 / 68 / EU<br>for fluids group 2 |                |
|---|----------------|
| DF 0035 - DF 0320   | Art. 4, par. 3 |
| DF 0450 - DF 1100   | Cat. I         |

|                             |              |
|-----------------------------|--------------|
| Max. operating pressure     | 16 bar       |
| Test pressure               | 22,9 bar     |
| Perm. operating temperature | +1°C / +65°C |



| Size housing/<br>element | Flow rate*<br>m³/h | Volume<br>(l) | Weight**<br>(kg) | A<br>mm | B<br>mm | C    | D<br>mm | E<br>mm | F<br>mm | G<br>mm | H<br>min./ max.<br>mm | I<br>mm |
|--------------------------|--------------------|---------------|------------------|---------|---------|------|---------|---------|---------|---------|-----------------------|---------|
| 0035                     | 35                 | 0,20          | 0,5              | 255     | 76      | G ¼  | 185     | 100     | 27      | 85      | 5                     | 84      |
| 0070                     | 70                 | 0,40          | 0,9              | 297     | 103     | G ⅜  | 222     | 115     | 27      | 107     | 5 / 34                | 107     |
| 0120                     | 120                | 0,50          | 1,0              | 340     | 103     | G ½  | 265     | 150     | 27      | 107     | 5 / 34                | 107     |
| 0210                     | 210                | 1,15          | 2,0              | 382     | 139     | G ¾  | 300     | 180     | 27      | 140     | 5 / 53                | 150     |
| 0320                     | 320                | 1,50          | 2,2              | 442     | 139     | G 1  | 360     | 250     | 27      | 140     | 5 / 53                | 150     |
| 0450                     | 450                | 5             | 5,2              | 585     | 190     | G 1¼ | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 0600                     | 600                | 5             | 5,2              | 585     | 190     | G 1½ | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 0750                     | 750                | 5             | 5,2              | 585     | 190     | G 2  | 487     | 250     | 27      | 203     | 5 / 73                | 190     |
| 1100                     | 1100               | 6             | 7,2              | 765     | 190     | G 2  | 665     | 250     | 103     | 203     | 5 / 73                | 190     |

\* Nominal flow at 7 bar g, m³/h related to 1 bar abs. and 20°C

\*\* without filter element

MATERIALS/ DIMENSIONS

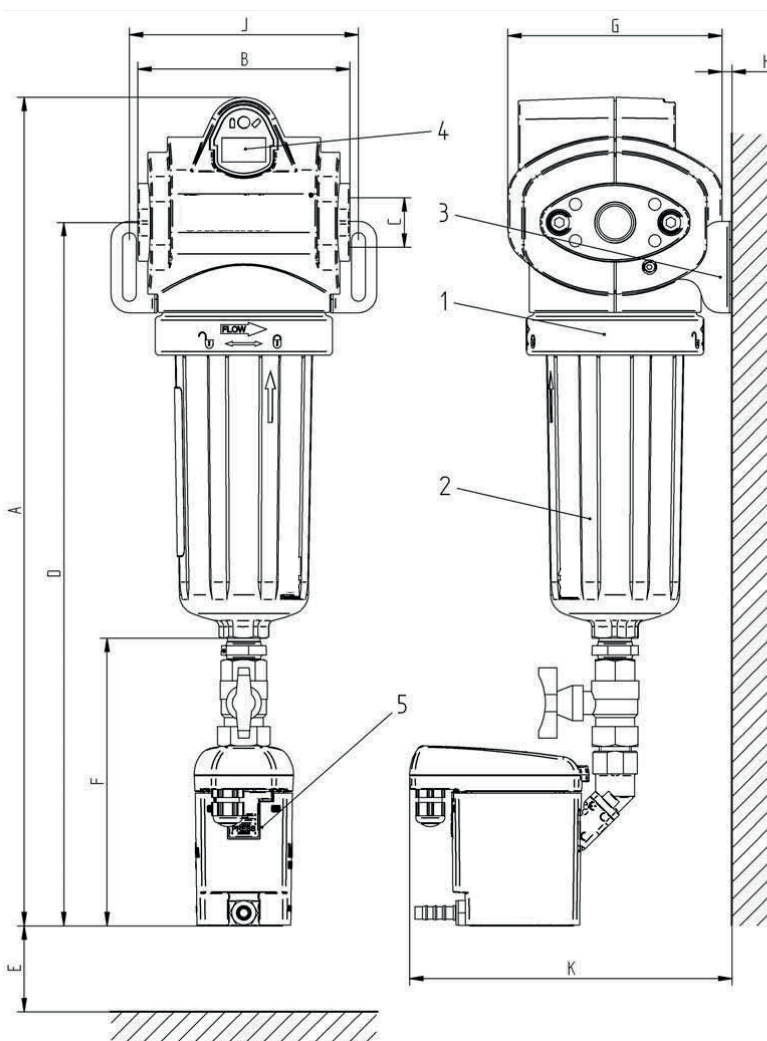
SUPERPLUS

| Pos. | Pcs. | Description              |
|------|------|--------------------------|
| 1    | 1    | Filter head              |
| 2    | 1    | Lower housing bowl       |
| 3    | 2    | Wall bracket (option)    |
| 4    | 1    | Economizer               |
| 5    | 1    | Condensate drain UFM-D03 |

| Materials filter housing |  |
|--------------------------|--|
| Filter housing           | Aluminium die cast                         |
| Economizer               | Polymer                                    |
| UFM-D                    | Aluminium / fiber-glass reinforced plastic |
| Sealings                 | Viton                                      |

| Classification acc. to 2014 / 68 / EU for fluids group 2 |                |
|--|----------------|
| DF 0035 - DF 0320  | Art. 4, par. 3 |
| DF 0450 - DF 1100  | Cat. I         |

|                             |              |
|-----------------------------|--------------|
| Max. operating pressure     | 16 bar       |
| Test pressure               | 22,9 bar     |
| Perm. operating temperature | +1°C / +65°C |



| Size housing/ element | Flow rate* m³/h | Volume (l) | Weight** (kg) | A mm | B mm | C    | D mm | E mm | F mm | G mm | H min./ max. mm | J mm | K mm |
|-----------------------|-----------------|------------|---------------|------|------|------|------|------|------|------|-----------------|------|------|
| 0035                  | 35              | 0,20       | 1,6           | 405  | 76   | G ¼  | 340  | 100  | 180  | 85   | 5               | 84   | 182  |
| 0070                  | 70              | 0,40       | 2,0           | 450  | 103  | G ⅜  | 375  | 115  | 180  | 107  | 5 / 34          | 107  | 193  |
| 0120                  | 120             | 0,50       | 2,1           | 495  | 103  | G ½  | 420  | 150  | 180  | 107  | 5 / 34          | 107  | 193  |
| 0210                  | 210             | 1,15       | 3,1           | 535  | 139  | G ¾  | 453  | 180  | 180  | 140  | 5 / 53          | 150  | 210  |
| 0320                  | 320             | 1,50       | 3,3           | 595  | 139  | G 1  | 513  | 250  | 180  | 140  | 5 / 53          | 150  | 210  |
| 0450                  | 450             | 5          | 6,7           | 740  | 190  | G 1¼ | 640  | 250  | 180  | 203  | 5 / 73          | 190  | 242  |
| 0600                  | 600             | 5          | 6,7           | 740  | 190  | G 1½ | 640  | 250  | 180  | 203  | 5 / 73          | 190  | 242  |
| 0750                  | 750             | 5          | 6,7           | 740  | 190  | G 2  | 640  | 250  | 180  | 203  | 5 / 73          | 190  | 242  |
| 1100                  | 1100            | 6          | 6,9           | 840  | 190  | G 2  | 740  | 250  | 180  | 203  | 5 / 73          | 190  | 242  |

\* Nominal flow at 7 bar g, m³/h related to 1 bar abs. and 20°C

\*\* without filter element