

FMM 050 FHA 051

Maximum pressure
420 bar
Flow rate to
152 l/min

Maximum pressure
560 bar
Flow rate to
140 l/min



Technical data

FMM 050

Filter housing (Materials)

- Head: Cast iron (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Steel

FHA 051

Filter housing (Materials)

- Head: Steel (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Steel

FMM 050 - Pressure

- Working pressure: 420 bar (42 MPa)
- Test pressure: 630 bar (63 MPa)
- Burst pressure: 1260 bar (126 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 420 bar (42 MPa)

FHA 051 - Pressure

- Working pressure: 560 bar (56 MPa)
- Test pressure: 840 bar (84 MPa)
- Burst pressure: 1680 bar (168 MPa)
- Pulse pressure fatigue test: 1.000.000 cycles with pressure from 0 to 560 bar (56 MPa)

Temperature

- From -25 °C to +110 °C

Bypass valve

- Opening pressure 6 bar ±10%
- Other opening pressures on request.

FMM - FHA Δp Elements type

- Microfibre filter elements series N: 20 bar
- Microfibre filter elements series S: 210 bar
- Wire mesh filter elements series N: 20 bar
- Fluid flow through the filter element from OUT to IN.

Seals

- Standard NBR series A
- Optional FPM series V

FMM FILTERS ARE PROVIDED FOR VERTICAL MOUNTING
FHA FILTERS ARE PROVIDED FOR VERTICAL MOUNTING

Weights (kg)

| Length | 1 | 2 | 3 | 4 | 5 |
|----------|------|------|------|------|------|
| • FMM050 | 3.11 | 3.48 | 3.90 | 4.36 | 5.54 |
| • FHA051 | 3.28 | 3.65 | 4.06 | 4.54 | 5.74 |

Volumes (dm³)

| Length | 1 | 2 | 3 | 4 | 5 |
|----------|------|------|------|------|------|
| • FMM050 | 0.34 | 0.48 | 0.63 | 0.81 | 1.23 |
| • FHA051 | 0.33 | 0.47 | 0.62 | 0.79 | 1.23 |

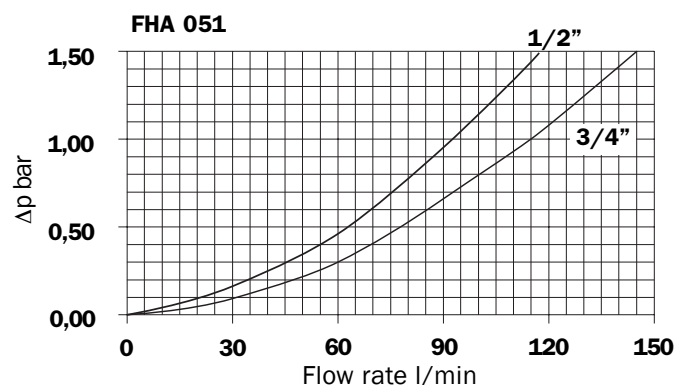
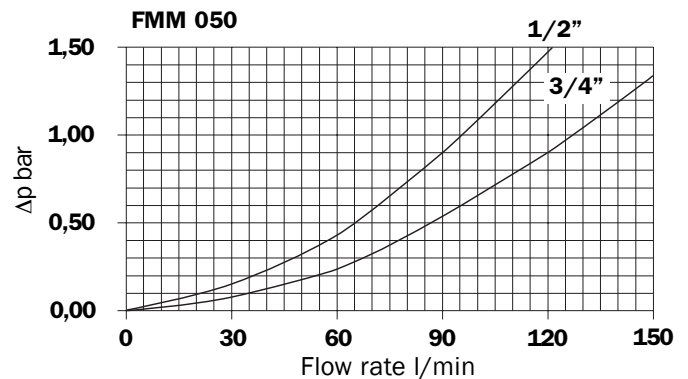
Connections

- FMM 050 - FHA 051: In-line Inlet/Outlet

Filter housings Δp pressure drop

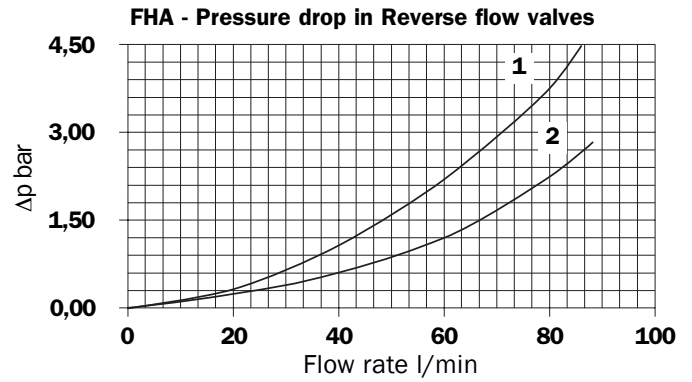
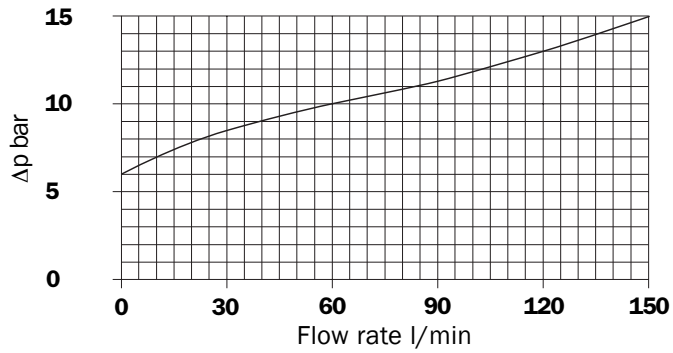
The curves are plotted utilising mineral oil with density of 0.86 kg/dm³ to ISO 3968.

Δp varies proportionally with density.



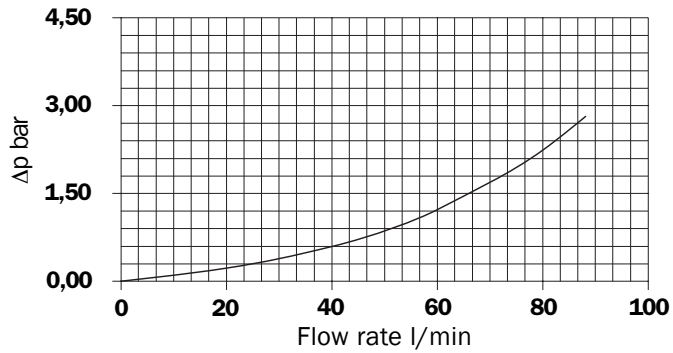
Valves (for FMM - FHA)

Bypass valve pressure drop



1 - Reverse flow
2 - In filter direction

FMM - Filter housing with check valve



Recommended maximum flow rate

- Pressure drop of filter assembly equal to Δp 1,5 bar.
- Oil kinematic viscosity 30 mm²/s (cSt).
- Density 0,86 kg/dm³.
- Connections of filter under test G 3/4".

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FMM 050 | 1 | 44 | 44 | 80 | 82 | 110 | 140 |
| | 2 | 53 | 58 | 87 | 100 | 125 | 140 |
| | 3 | 68 | 71 | 100 | 110 | 135 | 140 |
| | 4 | 85 | 92 | 118 | 120 | 135 | 145 |
| | 5 | 110 | 112 | 130 | 135 | 140 | 152 |

Serie N - Flow rate l/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FMM 050 | 1 | 30 | 40 | 58 | 60 | 75 |
| | 2 | 45 | 50 | 78 | 90 | 119 |
| | 3 | 59 | 62 | 92 | 100 | 130 |
| | 4 | 75 | 82 | 106 | 112 | 135 |
| | 5 | 94 | 98 | 112 | 120 | 140 |

Serie H - Flow rate l/min

Filtration

| | Length | A03 | A06 | A10 | A16 | A25 | M25 |
|----------------|--------|-----|-----|-----|-----|-----|-----|
| FHA 051 | 1 | 44 | 42 | 77 | 78 | 98 | 132 |
| | 2 | 52 | 55 | 82 | 91 | 112 | 135 |
| | 3 | 66 | 68 | 92 | 100 | 118 | 135 |
| | 4 | 80 | 85 | 105 | 108 | 120 | 135 |
| | 5 | 102 | 105 | 120 | 124 | 130 | 140 |

Serie N - Flow rate l/min

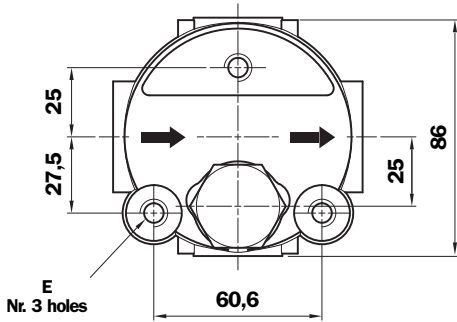
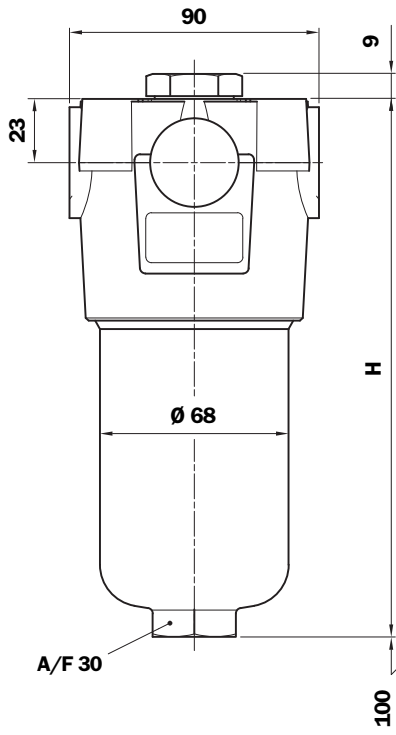
Filtration

| | Length | A03 | A06 | A10 | A16 | A25 |
|----------------|--------|-----|-----|-----|-----|-----|
| FHA 051 | 1 | 30 | 39 | 57 | 58 | 72 |
| | 2 | 45 | 49 | 74 | 84 | 105 |
| | 3 | 58 | 61 | 85 | 93 | 112 |
| | 4 | 75 | 78 | 98 | 105 | 115 |
| | 5 | 87 | 90 | 105 | 112 | 115 |

Serie H - Flow rate l/min

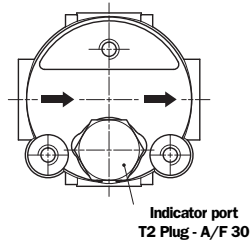
FMM 050 - FHA 051

FMM 050 - FHA 051

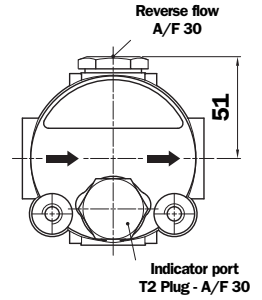


FHA 051 With Reverse flow

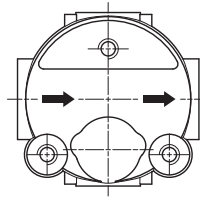
Option P01 Standard indicator port



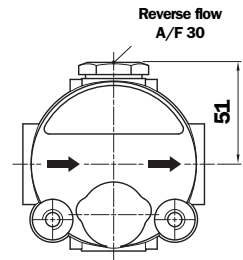
Option P01 Standard indicator port



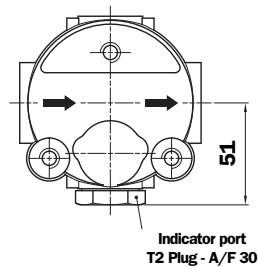
Option P02 Without indicator port



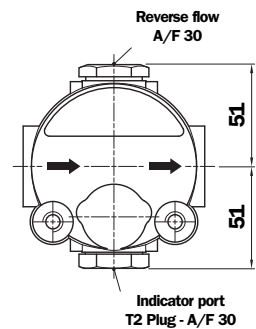
Option P02 Without indicator port



Option P03 Indicator port 90°



Option P03 Indicator port 90°

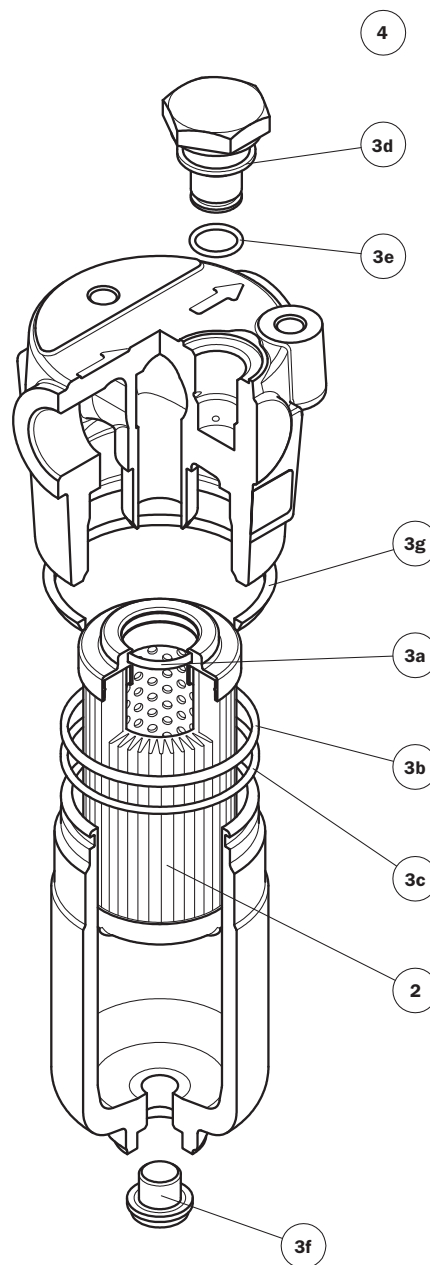


FMM - FHA

| Length Filter | H mm |
|---------------|------|
| 1 | 158 |
| 2 | 195 |
| 3 | 237 |
| 4 | 285 |
| 5 | 407 |

Thread connections

| Type | Size | E Depth 12 mm |
|------|--------------------------|---------------|
| A | M18x1,5 - ISO 6149 | M10 |
| B | M22x1,5 - ISO 6149 | M10 |
| C | G 1/2" | M10 |
| D | G 3/4" | M10 |
| E | 1/2" NPT | 3/8" UNC |
| F | 3/4" NPT | 3/8" UNC |
| G | SAE 8 - 3/4" - 16 UNF | 3/8" UNC |
| H | SAE 12 - 1 1/16" - 12 UN | 3/8" UNC |



| Item | Description | Q.ty | FILTER Series | | | |
|-----------|-------------------------------|------|------------------------------|-------------------|------------------------------|-------------------|
| | | | FMM 050 | | FHA 051 | |
| 1 | Filter assembly | 1 | See order table | | | |
| 2 | Filter element | 1 | See order table | | | |
| 3 | Seal Kit | 1 | NBR 02050314 | FPM 02050315 | NBR 02050288 | FPM 02050305 |
| 3a | Filter element seal | 1 | O-R 3093 Ø 23,67 x 2,62 | | O-R 3093 Ø 23,67 x 2,62 | |
| 3b | Bowl seal | 1 | O-R 3225 Ø 56,82 x 2,62 | | O-R 3227 Ø 60 x 2,62 | |
| 3c | Bowl seal anti-extrusion ring | 1 | Parbak 139 Ø 56,03 x 2,18 | | Parbak 141 Ø 59,21 x 2,18 | |
| 3d | Gasket | 1 | 01030058 (HNBR) | 01030046 (FPM) | 01030058 (HNBR) | 01030046 (FPM) |
| 3e | O-Ring indicator | 1 | O-R 2050 Ø 12,42 x 1,78 | | O-R 2050 Ø 12,42 x 1,78 | |
| 3f | Drain plug | 1 | G 1/4" with bonded seal | | G 1/4" with bonded seal | |
| 3g | Protective seal | 1 | 01026521 | | 01026521 | |
| 4 | Indicator connection plug | 1 | T2H | T2V | T2H | T2V |

Ordering information FMM 050 - FHA 051

Filter assembly FMM-FHA

| | | | | | | | | |
|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8a |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: FMM | 050 | 2 | B | A | C | A10 | N | P01 |

Filter element HP

| | | | | | | |
|--------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 1 | 2 | 6 | 4 | 7 | 8b |
| | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Example: HP | 050 | 2 | A10 | A | N | P01 |

1 - Style

| | |
|---------------------|-----------------------|
| FMM - Filter | Filter element |
| 050 | 050 |
| FHA - Filter | Filter element |
| 051 | 050 |

6 - Filter element

| | | |
|------------|-------------------------------|--|
| A03 | Inorganic microfibre 3 μ | } Absolute filtration Inorganic Microfibre |
| A06 | Inorganic microfibre 6 μ | |
| A10 | Inorganic microfibre 10 μ | |
| A16 | Inorganic microfibre 16 μ | |
| A25 | Inorganic microfibre 25 μ | } $\beta_x(c) \geq 1000$ |
| M25 | Wire mesh 25 μ | } Nominal Filtration Metal mesh |

2 - Filter length

| | | | | | |
|------------|----------|----------|----------|----------|----------|
| 050 | 1 | 2 | 3 | 4 | 5 |
| 051 | 1 | 2 | 3 | 4 | 5 |

7 - Max filter element differential pressure

| | |
|----------|---|
| N | Δp 20 bar |
| R | Δp 20 bar (filter with reverse flow + bypass) |
| S | Δp 210 bar |

3 - Valves

| | |
|----------|--|
| S | Without bypass |
| B | With bypass |
| T | Without bypass + check valve* |
| D | With bypass + check valve* |
| V | With reverse flow* (only for FHA 051) |
| Z | With reverse flow + bypass* (only for FHA 051) |

*Reduced cross-section oilways

8 - Option

a - Filter

| | |
|------------|--|
| P01 | Standard threaded connection for indicator |
| P02 | Without threaded connection for indicator |
| P03 | Threaded connection for 90° indicator (only for FHA) |
| Pxx | Customer request |

b - Filter element

| | |
|------------|--------------------|
| P01 | MP Filtri standard |
| Pxx | Customer request |

4 - Filter seals

| | |
|--------------------------|------------|
| A | NBR |
| V | FPM |
| <input type="checkbox"/> | On request |

5 - Connections

Threaded

FMM 050 - FHA 051

| Type | Size |
|----------|--------------------------|
| A | M18x1,5 - ISO 6149 |
| B | M22x1,5 - ISO 6149 |
| C | G 1/2" |
| D | G 3/4" |
| E | 1/2" NPT |
| F | 3/4" NPT |
| G | SAE 8 - 3/4" - 16 UNF |
| H | SAE 12 - 1 1/16" - 12 UN |

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