# FMP series

**Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 500 l/min**



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

FMP065 FMP135 FMP320

*For all the QR codes: Scan or click me!*

# FMP GENERAL INFORMATION

## Description

High Pressure filters

**In-line**
**Maximum working pressure up to 32 MPa (320 bar)**
**Flow rate up to 500 l/min**

FMP is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the industrial equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

### Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 500 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

### Common applications:

Delivery lines, in any high pressure industrial equipment or mobile machines

## Technical data

### Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Brass
- Reverse Flow: Steel (only for series FMP 320)
- Check valve: Steel

### Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

### Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

### Filter element features

| Filter<br>FMP | | Filter element<br>HP | |
|---|---|---|---|
| Δp Element type | | | |
| **Element media** | **Construction** | **Δp Series** | **Δp** |
| A - Microfiber | Standard | N | 20 bar |
| | With external support | R | 20 bar |
| | High Δp | H | 210 bar |
| | High Δp with external support | S | 210 bar |
| M - Wire mesh | Standard | N | 20 bar |
| *Please see ordering code tables to check element Δp series availability based on filter features.* | | | |
| **Flow direction through the filter element:**<br>From OUT to IN | | | |

### Seals

- Standard NBR series A
- Optional FPM series V

### Temperature

From -25 °C to +110 °C

### Connections

In-line Inlet/Outlet

### Note

FMP filters are provided for vertical mounting

## Weights [kg] and volumes [dm³]

| Filter series | Weights [kg] | | | | | Volumes [dm³] | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Length | 1 | 2 | 3 | 4 | Length | 1 | 2 | 3 | 4 |
| **FMP 065** | | 3.26 | 3.62 | 4.83 | - | | 0.36 | 0.47 | 0.84 | - |
| **FMP 135** | | 5.61 | 7.21 | 8.27 | - | | 0.45 | 0.78 | 1.00 | - |
| **FMP 320** | | 10.95 | 13.08 | 15.37 | 17.85 | | 1.03 | 1.75 | 2.52 | 3.35 |

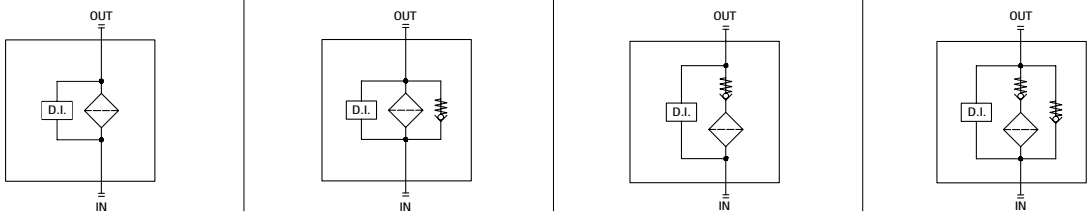
## Flow rates [l/min]

| | | Filter element design - N Series | | | | | |
|---|---|---|---|---|---|---|---|
| Filter series | Length | A03 | A06 | A10 | A16 | A25 | M25 |
| FMP 065 | 1 | 23 | 30 | 48 | 54 | 72 | 105 |
| | 2 | 31 | 45 | 60 | 65 | 82 | 106 |
| | 3 | 52 | 60 | 80 | 84 | 94 | 108 |
| FMP 135 | 1 | 69 | 73 | 120 | 129 | 171 | 201 |
| | 2 | 110 | 117 | 149 | 152 | 211 | 232 |
| | 3 | 151 | 152 | 192 | 195 | 212 | 233 |
| FMP 320 | 1 | 130 | 144 | 244 | 296 | 361 | 477 |
| | 2 | 267 | 291 | 417 | 438 | 492 | 509 |
| | 3 | 348 | 390 | 476 | 493 | 503 | 519 |
| | 4 | 389 | 415 | 483 | 502 | 525 | 534 |

**Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.**
The reference fluid has a kinematic viscosity of 30 $mm^2/s$ (cSt) and a density of 0.86 $kg/dm^3$.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

## Hydraulic diagram

| Filter series | Style S - E | Style B - C | Style T | Style D |
|---|---|---|---|---|
| FMP 065 | • | • | • | • |
| FMP 135 | • | • | • | • |
| FMP 320 | • | • | • | • |



## Designation & Ordering code

### COMPLETE FILTER

Configuration example: FMP065 | 3 | T | A | G1 | M25 | S | P01

**Series and size**

**FMP065** | **FMP135** | **FMP320**

| Length | FMP065 | FMP135 | FMP320 |
|---|---|---|---|
| **1** | • | • | • |
| **2** | • | • | • |
| **3** | • | • | • |
| **4** | - | - | • |

**Valves**

| | | | |
|---|---|---|---|
| **S** | Without bypass | **C** | With bypass 6 bar, plug on the opposite side |
| **E** | Without bypass, plug on the opposite side | **T** | With check valve, without bypass |
| **B** | With bypass 6 bar | **D** | With check valve, with bypass |

**Seals**

| | | | |
|---|---|---|---|
| **A** | NBR | **V** | FPM |

| Connections | FMP065 | FMP135 | FMP320 |
|---|---|---|---|
| **G1** | G 1/2" | G 3/4" | G 1 1/4" |
| **G2** | G 3/4" | G 1" | G 1 1/2" |
| **G3** | 1/2" NPT | 3/4" NPT | 1 1/4" NPT |
| **G4** | 3/4" NPT | 1" NPT | 1 1/2" NPT |
| **G5** | SAE 8 - 3/4" - 16 UNF | SAE 12 - 1 1/16" - 12 UN | SAE 20 - 1 5/8" - 12 UN |
| **G6** | SAE 12 - 1 1/16" - 12 UN | SAE 16 - 1 5/16" - 12 UN | SAE 24 - 1 7/8" - 12 UN |
| **F1** | - | 3/4" SAE 3000 psi/M | 1 1/4" SAE 3000 psi/M |
| **F2** | - | 1" SAE 3000 psi/M | 1 1/2" SAE 3000 psi/M |
| **F3** | - | 3/4" SAE 3000 psi/UNC | 1 1/4" SAE 3000 psi/UNC |
| **F4** | - | 1" SAE 3000 psi/UNC | 1 1/2" SAE 3000 psi/UNC |

**Filtration rating (filter media)**

| | | |
|---|---|---|
| **A03** | Inorganic microfiber | 3 µm |
| **A06** | Inorganic microfiber | 6 µm |
| **A10** | Inorganic microfiber | 10 µm |
| **A16** | Inorganic microfiber | 16 µm |
| **A25** | Inorganic microfiber | 25 µm |
| **M25** | Wire mesh | 25 µm |

| Element Δp | | Valves S | E | B | C | T | D |
|---|---|---|---|---|---|---|---|
| **N** | 20 bar | - | - | • | • | - | - |
| **R** | 20 bar | - | - | - | - | - | • |
| **H** | 210 bar | • | • | - | - | - | - |
| **S** | 210 bar | - | - | - | - | • | - |

| Execution | | Filter length 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| **P01** | MP Filtri standard | • | • | • | • |
| **P02** | Maintenance from the bottom of the housing | - | - | - | • |
| **Pxx** | Customized | - | - | - | - |

### FILTER ELEMENT

Configuration example: HP065 | 3 | M25 | A | S | P01

**Element series and size**

**HP065** | **HP135** | **HP320**

| Element length | HP065 | HP135 | HP320 |
|---|---|---|---|
| **1** | • | • | • |
| **2** | • | • | • |
| **3** | • | • | • |
| **4** | - | - | • |

**Filtration rating (filter media)**

| | | |
|---|---|---|
| **A03** | Inorganic microfiber | 3 µm |
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| **A10** | Inorganic microfiber | 10 µm |
| **A16** | Inorganic microfiber | 16 µm |
| **A25** | Inorganic microfiber | 25 µm |
| **M25** | Wire mesh | 25 µm |

**Seals**

| | |
|---|---|
| **A** | NBR |
| **V** | FPM |

**Element Δp**

| | |
|---|---|
| **N** | 20 bar |
| **R** | 20 bar |
| **H** | 210 bar |
| **S** | 210 bar |

**Execution**

| | |
|---|---|
| **P01** | MP Filtri standard |
| **Pxx** | Customized |

### CLOGGING INDICATORS

See page 786

| | | | |
|---|---|---|---|
| **DEA** | Electrical differential pressure indicator | **DTA** | Electronic differential pressure indicator |
| **DEM** | Electrical differential pressure indicator | **DTI** | I-O Link electronic differential pressure indicator |
| **DEU** | Electrical differential pressure indicator | **DVA** | Visual differential pressure indicator |
| **DLA** | Electrical / visual differential pressure indicator | **DVM** | Visual differential pressure indicator |
| **DLE** | Electrical / visual differential pressure indicator | | |

### PLUGS

See page 807

**T2** Plug (not included)