



MP Filter  
FZX ATEX  
Series



 HYDRAULIC  
COMPONENTS  
& FLUID CONTAMINATION  
CONTROL

# FZX series

Maximum working pressure up to 100 Mpa (1000 bar) - Flow rate up to 10 l/min



## INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



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## Description

## Technical data

### Filters for potentially explosive atmosphere

#### In-line

**Maximum working pressure up to 100 Mpa (1000 bar)**

**Flow rate up to 10 l/min**

FZX is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.

They are directly connected to the lines of the system through the hydraulic fittings.

#### Available features:

- 1/2" female threaded connections, for a maximum flow rate of 10 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- High collapse filter element "H", for use with filters not provided with bypass valve
- High collapse filter element "U", for use with aggressive fluids

#### Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

#### Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

#### Pressure

- Test pressure: 150 MPa (1500 bar)
- Min. Burst pressure: 300 MPa (3000 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 100 MPa (1000 bar)

#### Bypass valve

Opening pressure 6 bar  $\pm$ 10%

#### Filter element features

| Filter<br><b>FZX</b>  |  | Filter element<br><b>HP</b> |            |
|---|--|-----------------------------|------------|
| <b><math>\Delta p</math> Element type</b>   |  |                             |            |
| Element media   | Construction                                       | $\Delta p$ Series           | $\Delta p$ |
| A - Microfiber  | High $\Delta p$                                    | H                           | 210 bar    |
|   | High $\Delta p$<br>with stainless steel components | U                           | 210 bar    |
| <i>Please see ordering code tables to check element <math>\Delta p</math> series availability based on filter features.</i> |  |                             |            |
| <b>Flow direction through the filter element:</b>   |  |                             |            |
| From OUT to IN  |  |                             |            |
| Filter element components materials   | <b><math>\Delta p</math> Series</b>                |                             |            |
|   | H  | U                           |            |
| End cap   | Tinned Steel                                       | Stainless steel             |            |
| Core tube   | Tinned Steel                                       | Stainless steel             |            |
| External support  | Wire mesh epoxy painted                            | Stainless steel             |            |
| Internal support  | Stainless steel                                    | Stainless steel             |            |
| Pre-filter  | Synthetic  | Synthetic                   |            |

#### Temperature

| Seals     | Ambient Temperature | Max fluid Temperature | Temperature Class | Max surface temperature |
|-----------|---------------------|-----------------------|-------------------|-------------------------|
| NBR       | -15 °C ÷ +80 °C     | +80 °C                | T6                | T85 °C                  |
| FPM / MFQ | -15 °C ÷ +80 °C     | +80 °C                | T6                | T85 °C                  |
|           | -15 °C ÷ +95 °C     | +95 °C                | T5                | T100 °C                 |
|           | -15 °C ÷ +110 °C    | +110 °C               | T4                | T115 °C                 |

#### Seals

- Standard NBR series A
- Optional FPM series V
- Optional MFQ series F

#### Note

FZX filters are provided for vertical mounting

#### Filter with:

NBR seal in configuration **zerospark<sup>+</sup>**



**II 3G Ex h IIC T6 Gc X**  
**II 3D Ex h IIIC T85°C Dc X**

FPM / MFQ seal in configuration **zerospark<sup>+</sup>**



**II 3G Ex h IIC T6... T4 Gc X**  
**II 3D Ex h IIIC T85°C...T115°C Dc X**

## Weights [kg] and volumes [dm<sup>3</sup>]

| Filter series  | Weights [kg] |   |     |   | Volumes [dm <sup>3</sup> ] |        |   |      |   |   |
|----------------|--------------|---|-----|---|----------------------------|--------|---|------|---|---|
|                | Length       | 1 | 2   | 3 | 4                          | Length | 1 | 2    | 3 | 4 |
| <b>FZX 011</b> | -            | - | 6.5 | - | -                          | -      | - | 0.15 | - | - |

Flow rates [l/min]

| Filter series  | Length   | Filter element design - H-U Series |      |      |      |      |
|----------------|----------|------------------------------------|------|------|------|------|
|                |          | A03                                | A06  | A10  | A16  | A25  |
| <b>FZX 011</b> | <b>3</b> | 1.57                               | 1.63 | 1.73 | 1.74 | 1.77 |

### Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop $\Delta p = 1.5$ bar.

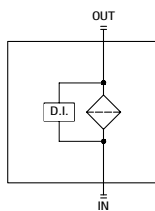
The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://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.

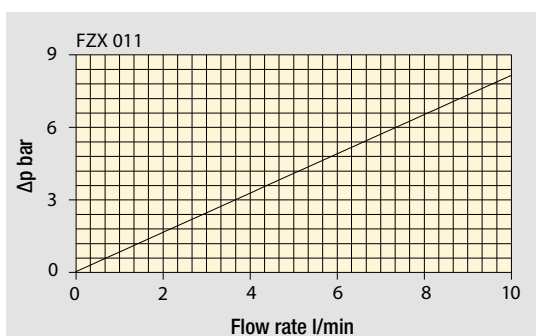
Hydraulic symbols

| Filter series  | Style S |
|----------------|---------|
| <b>FZX 011</b> | •       |



Pressure drop

Filter housings  $\Delta p$  pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

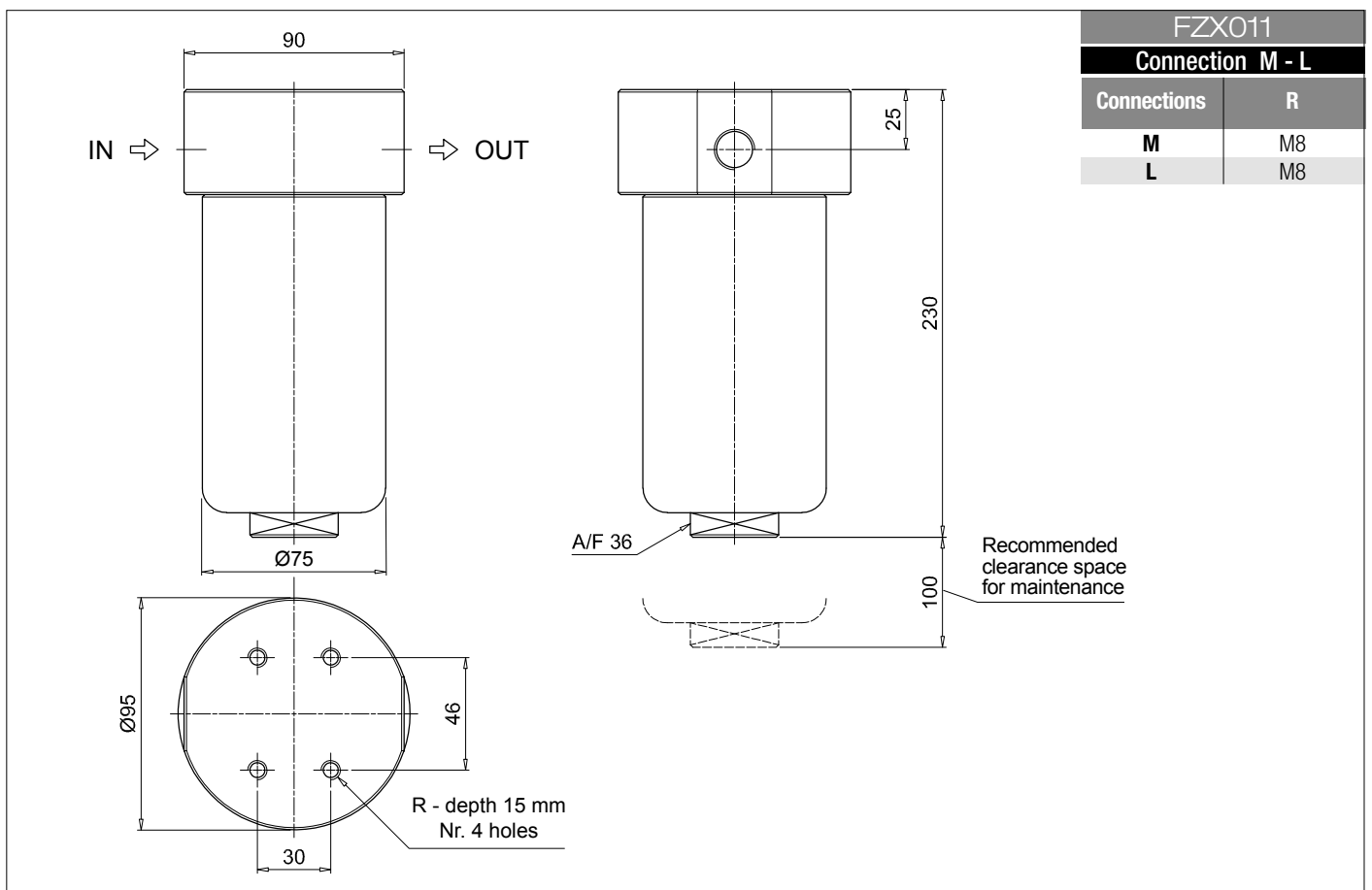
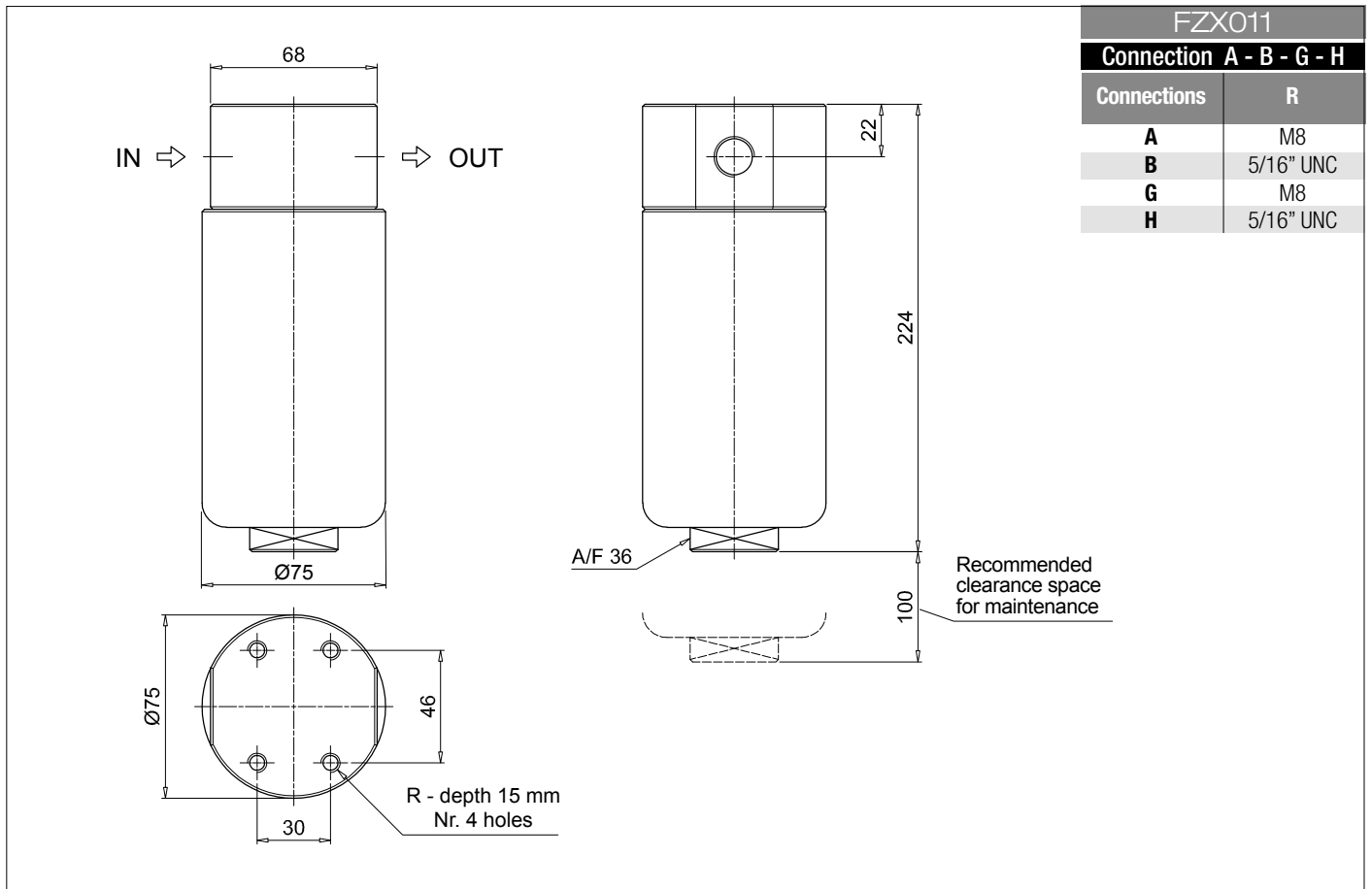
## Designation & Ordering code

### COMPLETE FILTER

|   |                                      |          |          |          |          |          |            |          |            |           |
|---|--------------------------------------|----------|----------|----------|----------|----------|------------|----------|------------|-----------|
| <b>Filter series and size</b>                         | Configuration example: <b>FZX011</b> | <b>3</b> | <b>S</b> | <b>V</b> | <b>B</b> | <b>1</b> | <b>A03</b> | <b>U</b> | <b>Z01</b> | <b>EX</b> |
| <b>FZX011</b>   |                                      |          |          |          |          |          |            |          |            |           |
| <b>Filter length</b>                                  |                                      |          |          |          |          |          |            |          |            |           |
| <b>3</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>Bypass valve</b>                                   |                                      |          |          |          |          |          |            |          |            |           |
| <b>S Without bypass</b>                               |                                      |          |          |          |          |          |            |          |            |           |
| <b>Seals</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>A NBR</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>V FPM</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>F MFQ</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>Connections</b>                                    |                                      |          |          |          |          |          |            |          |            |           |
| <b>700 bar</b>  |                                      |          |          |          |          |          |            |          |            |           |
| <b>A G 1/4"</b>                                       |                                      |          |          |          |          |          |            |          |            |           |
| <b>B 1/4" NPT</b>                                     |                                      |          |          |          |          |          |            |          |            |           |
| <b>G G 1/2"</b>                                       |                                      |          |          |          |          |          |            |          |            |           |
| <b>H 1/2" NPT"</b>                                    |                                      |          |          |          |          |          |            |          |            |           |
| <b>Autoclave 1000 bar</b>                             |                                      |          |          |          |          |          |            |          |            |           |
| <b>M 9/16" - 18 UNF</b>                               |                                      |          |          |          |          |          |            |          |            |           |
| <b>L 3/4" - 14 NPS</b>                                |                                      |          |          |          |          |          |            |          |            |           |
| <b>Connection for differential pressure indicator</b> |                                      |          |          |          |          |          |            |          |            |           |
| <b>1 Without connection</b>                           |                                      |          |          |          |          |          |            |          |            |           |
| <b>Filtration rating (filter media)</b>               |                                      |          |          |          |          |          |            |          |            |           |
| <b>A03 Inorganic microfiber 3 µm</b>                  |                                      |          |          |          |          |          |            |          |            |           |
| <b>A06 Inorganic microfiber 6 µm</b>                  |                                      |          |          |          |          |          |            |          |            |           |
| <b>A10 Inorganic microfiber 10 µm</b>                 |                                      |          |          |          |          |          |            |          |            |           |
| <b>A16 Inorganic microfiber 16 µm</b>                 |                                      |          |          |          |          |          |            |          |            |           |
| <b>A25 Inorganic microfiber 25 µm</b>                 |                                      |          |          |          |          |          |            |          |            |           |
| <b>Element Δp</b>                                     |                                      |          |          |          |          |          |            |          |            |           |
| <b>H 210 bar</b>                                      |                                      |          |          |          |          |          |            |          |            |           |
| <b>U 210 bar, stainless steel filter element</b>      |                                      |          |          |          |          |          |            |          |            |           |
| <b>Execution</b>                                      |                                      |          |          |          |          |          |            |          |            |           |
| <b>zerospark®</b>                                     |                                      |          |          |          |          |          |            |          |            |           |
| <b>Z01 MP Filtri standard</b>                         |                                      |          |          |          |          |          |            |          |            |           |
| <b>Zxx Customized</b>                                 |                                      |          |          |          |          |          |            |          |            |           |
| <b>Certifications</b>                                 |                                      |          |          |          |          |          |            |          |            |           |
| <b>EX ATEX certifications</b>                         |                                      |          |          |          |          |          |            |          |            |           |

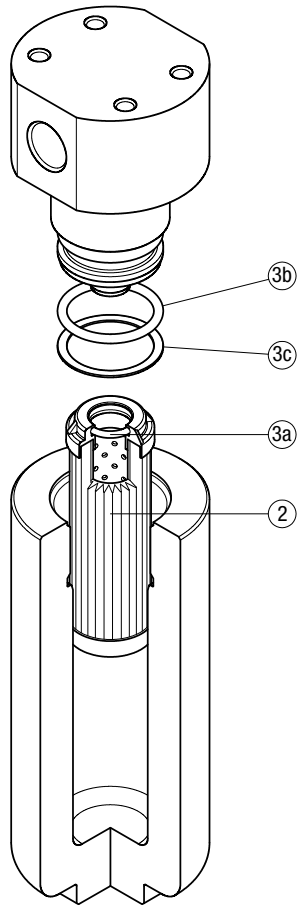
### FILTER ELEMENT

|  |                       |          |            |          |          |            |
|--|-----------------------|----------|------------|----------|----------|------------|
| <b>Element series and size</b>                   | Example: <b>HP011</b> | <b>3</b> | <b>A03</b> | <b>V</b> | <b>U</b> | <b>Z01</b> |
| <b>HP011</b>                                     |                       |          |            |          |          |            |
| <b>Element length</b>                            |                       |          |            |          |          |            |
| <b>3</b>   |                       |          |            |          |          |            |
| <b>Filtration rating (filter media)</b>          |                       |          |            |          |          |            |
| <b>A03 Inorganic microfiber 3 µm</b>             |                       |          |            |          |          |            |
| <b>A06 Inorganic microfiber 6 µm</b>             |                       |          |            |          |          |            |
| <b>A10 Inorganic microfiber 10 µm</b>            |                       |          |            |          |          |            |
| <b>A16 Inorganic microfiber 16 µm</b>            |                       |          |            |          |          |            |
| <b>A25 Inorganic microfiber 25 µm</b>            |                       |          |            |          |          |            |
| <b>Seals</b>                                     |                       |          |            |          |          |            |
| <b>A NBR</b>                                     |                       |          |            |          |          |            |
| <b>V FPM</b>                                     |                       |          |            |          |          |            |
| <b>F MFQ</b>                                     |                       |          |            |          |          |            |
| <b>Element Δp</b>                                |                       |          |            |          |          |            |
| <b>H 210 bar</b>                                 |                       |          |            |          |          |            |
| <b>U 210 bar, stainless steel filter element</b> |                       |          |            |          |          |            |
| <b>Execution</b>                                 |                       |          |            |          |          |            |
| <b>zerospark®</b>                                |                       |          |            |          |          |            |
| <b>Z01 MP Filtri standard</b>                    |                       |          |            |          |          |            |
| <b>Zxx Customized</b>                            |                       |          |            |          |          |            |



Order number for spare parts

**FZX 011**



| Item:         | Q.ty: 1 pc.     | Q.ty: 1 pc.          |          |
|---------------|-----------------|----------------------|----------|
| Filter series | Filter element  | Seal Kit code number |          |
| FZX 011       | See order table | NBR                  | FPM      |
|               | <b>2</b>        | <b>3</b> (3a ÷ 3c)   |          |
|               |                 | 02050643             | 02050644 |

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