



THE X CONCEPT FOR OUR FILTERS

Protect the performance of your system with MYclean.

Quality and efficiency are fundamental for MP Filtri:

this exclusive new filter element possesses polygon shape geometry and specific seal that ensures only original spare parts can be used - ensuring correct operation and higher system reliability.

FMMX series

with  HPX Filter Element



- **Protects the machine from improper use of non-original products.**
- **Safety of constant quality protection & reliability**

With exclusive filter element you are sure that only MP Filtri filter elements can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.



The products identified as FMMX series are protected by:

- Italian Patent n° 102014902261205
- Canadian Patent n° 2,937,258
- European Patent n° 3 124 092 B1
- US Patent n° 20170030384 A1

TOGETHER WITH  , AS OPTION, FMMX SERIES CAN BE PROVIDED WITH

zerospark®
THE ANTI-STATIC FILTERS

THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.



FMMX series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS



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Description

Technical data

High Pressure filters

In-line

Maximum working pressure up to 42 MPa (420 bar)

Flow rate up to 300 l/min

FMMX is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.

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

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 300 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
- Low collapse filter element "N", for use with filters provided with bypass valve
- Visual, electrical and electronic differential clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts.
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

- Agricultural machines
- Mobile machines

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 600 kPa (6 bar) $\pm 10\%$
- Other opening pressures on request.

Δp element type

- Microfiber filter elements - series N: 20 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

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FMMX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]						
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMMX 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23
FMMX 150		7.50	9.50	10.90	-	-		0.60	1.00	1.25	-	-

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25
FMMX 050	1	42	43	79	82	106	147
	2	52	57	85	96	121	149
	3	66	69	97	106	130	150
	4	83	89	113	115	134	152
	5	107	110	130	134	141	154
FMMX 150	1	81	88	156	163	179	295
	2	142	145	227	230	236	312
	3	170	180	242	245	263	315

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

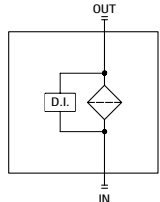
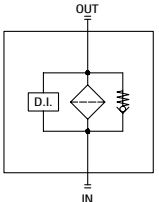
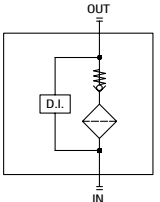
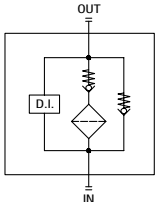
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

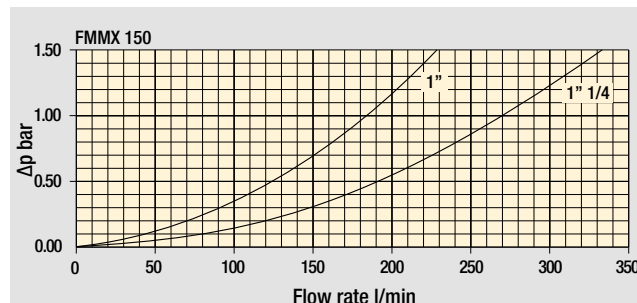
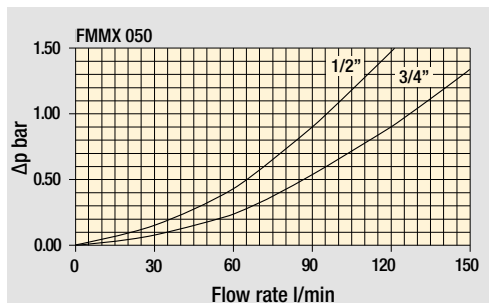
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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 symbols

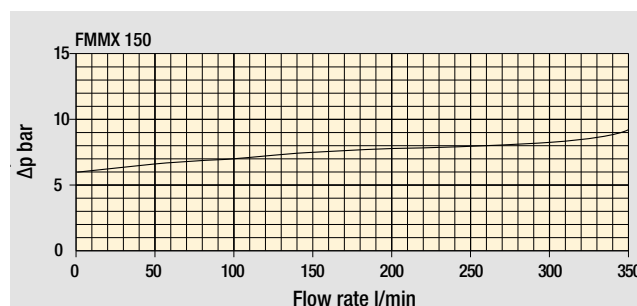
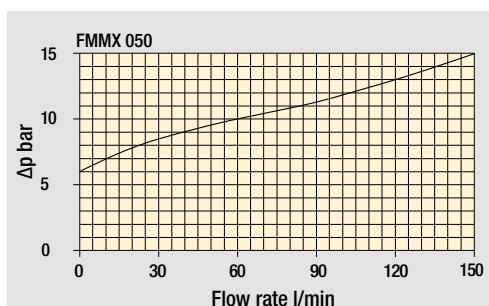
Filter series	Style S	Style B	Style T	Style D
FMMX 050	•	•	•	•
FMMX 150	•	•	•	•

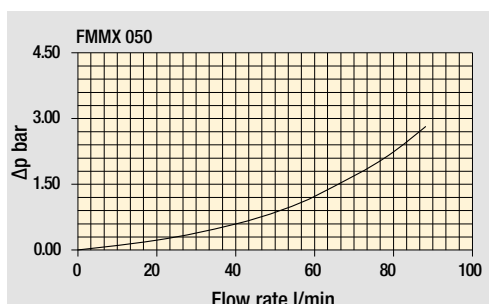


Pressure drop

Filter housings
 Δp pressure drop



Bypass valve
pressure drop



Filter housing
with check valve

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Series and size Configuration example: **FMMX050** **3** **B** **A** **G** **A10** **N** **P01**

FMMX050 Filter featuring **MY CLEAN** Filter Element

Length **1** **2** **3** **4** **5**

Valves **B** With bypass 6 bar
D With check valve, with bypass 6 bar

Seals **A** NBR
V FPM

Connections **A** M18x1.5 - ISO 6149 **E** 1/2" NPT
B M22x1.5 - ISO 6149 **F** 3/4" NPT
C G 1/2" **G** SAE 8 - 3/4" - 16 UNF
D G 3/4" **H** SAE 12 - 1 1/16" - 12 UN

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
N 20 bar

Executions

Base	zero spark	
P01	Z01 *	Upper connection for clogging indicator
P02	Z02 *	Without connection for clogging indicator
P03	Z03 *	Frontal connection for clogging indicator
Pxx	Zxx *	Customized

* Not for Mxx filter media

FILTER ELEMENT

Element series and size Configuration example: **HPX050** **3** **A10** **A** **N** **P01**

HPX050 Filter Element with **MY CLEAN** feature

Element length **1** **2** **3** **4** **5**

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

Seals **A** NBR
V FPM

Element Δp
N 20 bar

Executions

Base	zero spark	
P01	Z01 *	MP Filtri standard
Pxx	Zxx *	Customized

* Not for Mxx filter media

CLOGGING INDICATORS

See page 727

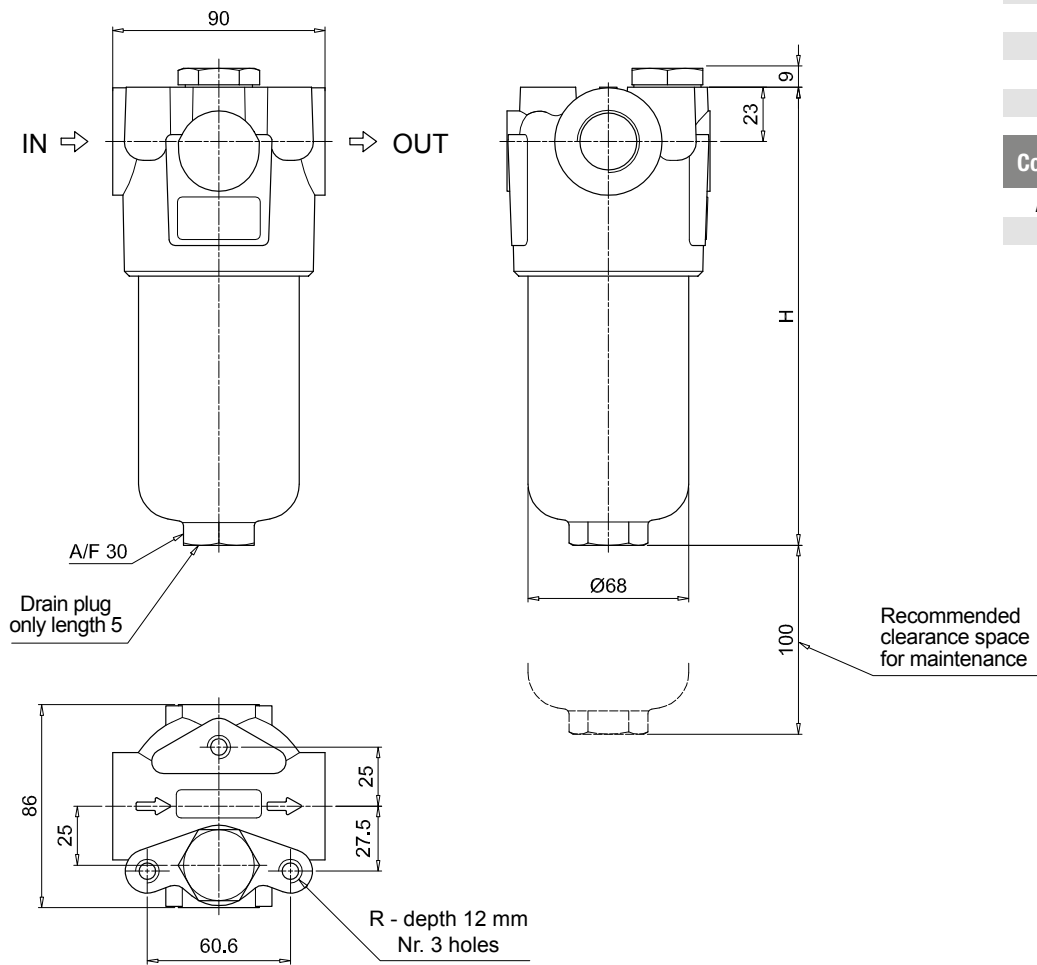
DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

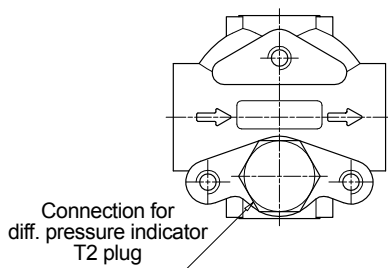
See page 747

T2 Plug

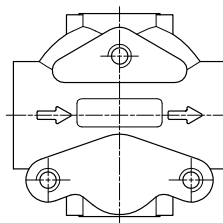


FMMX050	
Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC

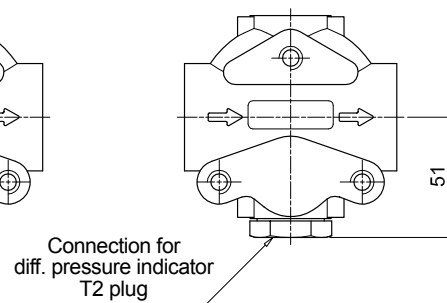
Execution P01



Execution P02



Execution P03



Designation & Ordering code

COMPLETE FILTER

Series and size Configuration example: **FMMX150** **2** **B** **A** **D** **2** **M25** **N** **P01**

FMMX150 Filter featuring **MY CLEAN** Filter Element

Length **1** | **2** | **3** |

Valves **S** Without bypass **B** With bypass 6 bar

Seals **A** NBR **V** FPM

Connections **C** G1" **F** 1 1/4" NPT **D** G1 1/4" **G** SAE 16 - 1 5/16" - 12 UN **E** 1" NPT **H** SAE 20 - 1 5/8" - 12 UN

Connections for differential indicator **1** Without connection **2** Upper connection **3** Frontal connection

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 **N** 20 bar

Executions **Base** **zero****spark** **P01** **Z01 *** MP Filtri standard **Pxx** **Zxx *** Customized

* Not for Mxx filter media

FILTER ELEMENT

Element series and size Configuration example: **HPX150** **3** **A10** **A** **N** **P01**

HPX150 Filter Element with **MY CLEAN** feature

Element length **1** | **2** | **3** |

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

Seals **A** NBR **V** FPM

Element Δp **N** 20 bar

Executions **Base** **zero****spark** **P01** **Z01 *** MP Filtri standard **Pxx** **Zxx *** Customized

* Not for Mxx filter media

CLOGGING INDICATORS

See page 727

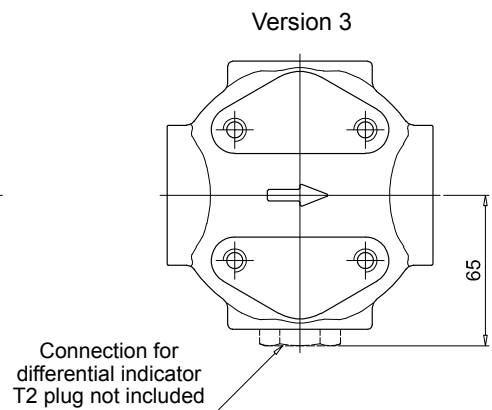
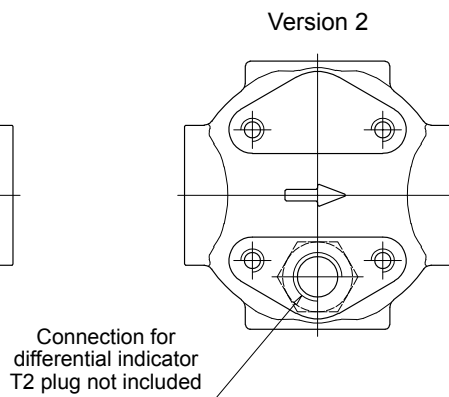
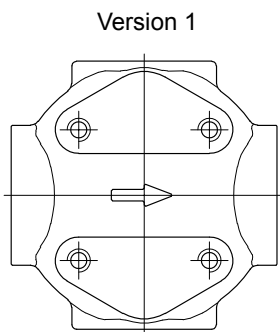
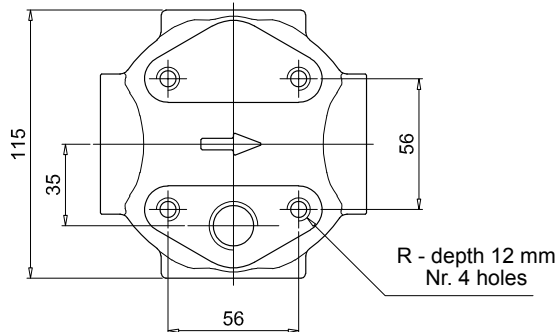
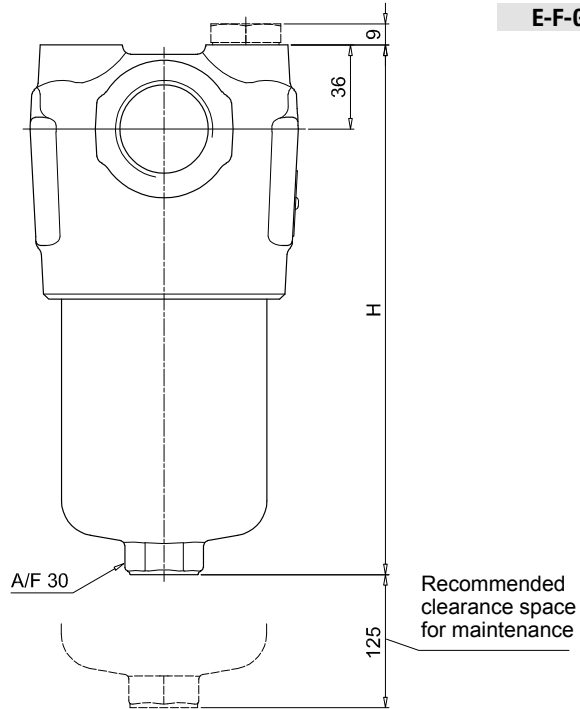
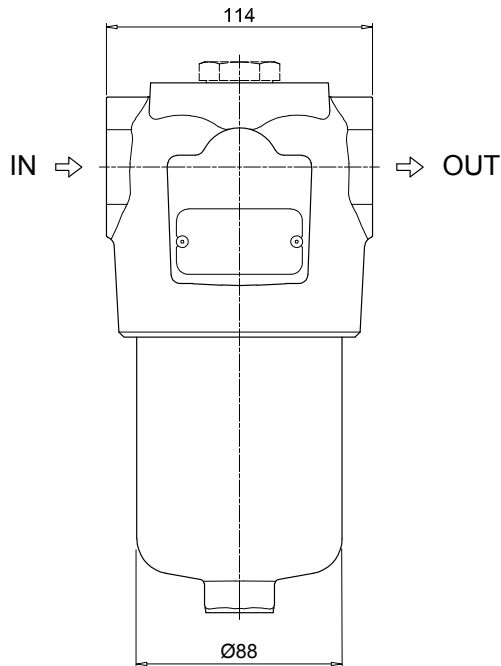
DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 747

T2 Plug



FMMX150

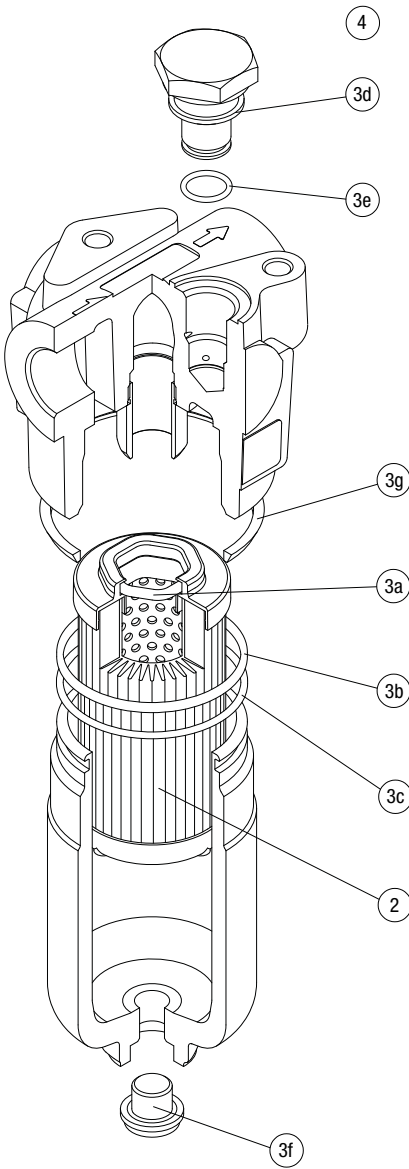
Filter length	H [mm]
1	230
2	340
3	415

Connections	R
C-D	M10
E-F-G-H	3/8" UNC

FMMX SPARE PARTS

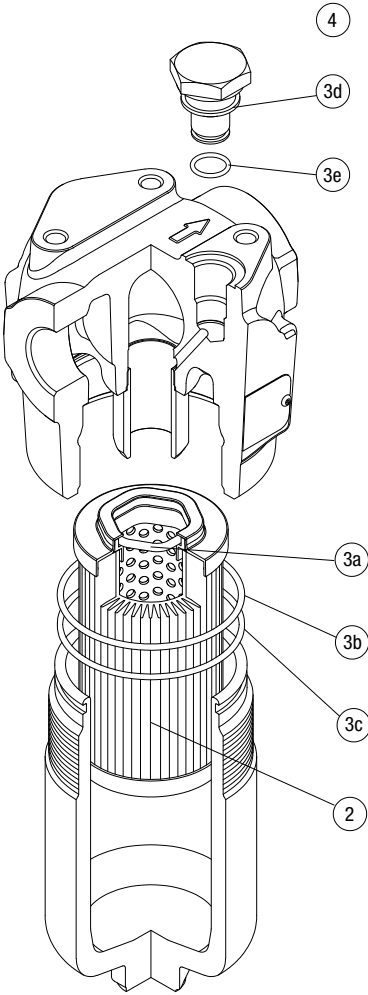
Order number for spare parts

FMMX 050



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.
Filter series	Filter element	Seal Kit code number	Indicator connection plug
FMMX 050	See order table	NBR	NBR
		FPM	FPM
		02050864	T2H
		02050865	T2V

FMMX 150



Item:		Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
		2		3 (3a ÷ 3e)		4	
Filter series	Filter element	Seal Kit code number		Indicator connection plug			
		NBR	FPM	NBR	FPM		
FMMX 150	See order table	02050868	02050869	T2H	T2V		

DIFFERENTIAL PRESSURE INDICATORS

Series					Configuration example 1:					Configuration example 2:					Configuration example 3:					Configuration example 4:					Configuration example 5:																																		
DE Electrical differential pressure indicator										DE					U					50					V					A					50					P01					UL														
DL Electrical/Visual differential pressure indicator										DL					E					20					V					A					71					P01																			
DT Electronic differential pressure indicator										DT					A					50					H					F					70					P01																			
DV Visual differential pressure indicator										DV					M					70					V															P01																			
Type		DE	DL	DT	DV																																																						
A	Standard type	•	•	•	A	With automatic reset																																																					
M	With wired electrical connection	•	-	-	M	With manual reset																																																					
U	Standard type 210 bar, UL certified	•	-	-																																																							
E	For high power supply	-	•	-																																																							
Pressure setting		DEA	DEM	DEU	DLA	DLE	DTA	DVA	DVM																																																		
50	5.0 bar	•	•	•	•	•	•	•	•																																																		
70	7.0 bar	•	•	•	•	•	•	•	•																																																		
95	9.5 bar	•	•	-	•	•	•	•	•																																																		
Seals		DEA	DEM	DEU	DLA	DLE	DTA	DVA	DVM																																																		
H	HNBR	•	•	-	•	•	•	•	•																																																		
V	FPM	•	•	•	•	•	•	•	•																																																		
Thermostat		DEA	DEM	DEU	DLA	DLE	DT																																																				
A	Without thermostat	•	•	•	•	•	-																																																				
F	With thermostat	-	•	-	-	•	•																																																				
Electrical connections		DEA	DEM	DEU	DLA	DLE	DT																																																				
10	Connection AMP Superseal series 1.5	-	•	-	-	-	-																																																				
20	Connection AMP Timer Junior	-	•	-	-	-	-																																																				
30	Connection Deutsch DT-04-2-P	-	•	-	-	-	-																																																				
35	Connection Deutsch DT-04-3-P	-	•	-	-	-	-																																																				
50	Connection EN 175301-803	•	-	•	-	•	-																																																				
51	Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•	-	-																																																				
52	Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•	-	-																																																				
70	Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	•																																																				
71	Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•	-	-																																																				
Option																																																											
P01		MP Filtri standard																																																									
Pxx		Customized																																																									
Certifications		DEU	OTHERS																																																								
Without		-	•																																																								
UL	UL certification	•	-																																																								

PLUGS

Series		Configuration example	
T2	Plug	T2	H
Seals			
H	HNBR		
V	FPM		