

# HYDRAULIC FILTRATION PRODUCTS

LOW & MEDIUM PRESSURE FILTERS



PASSION TO PERFORM



# FILTER SIZING

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## THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING BY THE APPLICATION.

FOR EXAMPLE, THE MAXIMUM TOTAL PRESSURE DROP ALLOWED BY A NEW AND CLEAN RETURN FILTER HAVE TO BE IN THE RANGE 0.4 - 0.6 bar / 5.80 - 8.70 psi.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop  $\Delta p_c$  of the housing is proportional to the fluid density ( $\text{kg}/\text{dm}^3$  /  $\text{lb}/\text{ft}^3$ ). The filter element pressure drop  $\Delta p_e$  is proportional to its viscosity ( $\text{mm}^2/\text{s}$  / SUS), the corrective factor Y have to be used in case of an oil viscosity different than  $30 \text{ mm}^2/\text{s}$  (cSt) / 150 SUS.

### Sizing data for single filter element, head at top

$\Delta p_c$  = Filter housing pressure drop [bar / psi]

$\Delta p_e$  = Filter element pressure drop [bar / psi]

Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media

Q = flow rate (l/min - gpm)

V1 reference oil viscosity =  $30 \text{ mm}^2/\text{s}$  (cSt) / 150 SUS

V2 = operating oil viscosity in  $\text{mm}^2/\text{s}$  (cSt) / SUS

### Filter element pressure drop calculation with an oil viscosity different than $30 \text{ mm}^2/\text{s}$ (cSt) / 150 SUS

International system:

$$\Delta p_e = Y : 1000 \times Q \times (V2:V1)$$

Imperial system:

$$\Delta p_e = Y : 17.2 \times Q \times (V2:V1)$$

$$\Delta p_{\text{Tot.}} = \Delta p_c + \Delta p_e$$

### Verification formula

$$\Delta p_{\text{Tot.}} \leq \Delta p_{\text{max allowed}}$$

### Maximum total pressure drop ( $\Delta p_{\text{max}}$ ) allowed by a new and clean filter

Application	Range:[ bar ]	[ psi ]
Suction filters	0.08 - 0.10 bar	1.16 - 1.45 psi
Return filters	0.4 - 0.6 bar	5.80 - 8.70 psi
Return - Suction filters (*)	0.8 - 1.0 bar	11.60 - 14.50 psi
Low & Medium Pressure filters	0.4 - 0.6 bar	5.80 - 8.70 psi return lines
	0.3 - 0.5 bar	4.35 - 7.25 psi lubrication lines
	0.3 - 0.4 bar	4.35 - 5.80 psi off-line in power systems
	0.1 - 0.3 bar	1.45 - 4.35 psi off-line in test benches
	0.4 - 0.6 bar	5.80 - 8.7 psi over-boost
High Pressure filters	0.8 - 1.5 bar	11.60 - 21.75 psi
Stainless Steel filters	0.8 - 1.5 bar	11.60 - 21.75 psi

(\*)The suction flow rate should not exceed 30% of the return flow rate

### Generic filter calculation example

Application data:

Tank top return filter

Pressure  $P_{\text{max}} = 10$  bar

Flow rate  $Q = 120$  l/min

Viscosity  $V2 = 46 \text{ mm}^2/\text{s}$  (cSt)

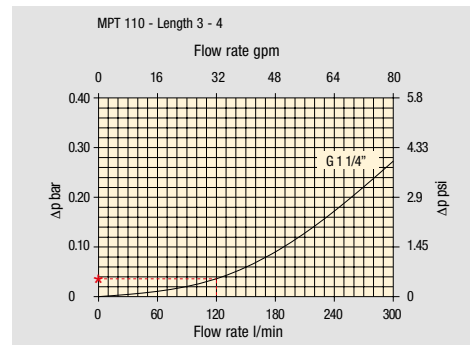
Oil density =  $0.86 \text{ kg}/\text{dm}^3$

Required filtration efficiency =  $25 \mu\text{m}$  with absolute filtration

With bypass valve and G 1 1/4" inlet connection

Calculation:

$\Delta p_c = 0.03 \text{ bar} / 0.43 \text{ psi}$  (see graphic below)



Filter housings  $\Delta p$  pressure drop. The curves are plotted using mineral oil with density of  $0.86 \text{ kg}/\text{dm}^3$  in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

$$\Delta p_e = (2.00 : 1000) \times 120 \times (46 : 30) = 0.37 \text{ bar}$$

$$\Delta p_e = (2.00 : 17.2) \times 32 \times (216 : 150) = 5.36 \text{ psi}$$

Filter element	Absolute filtration H Series					Nominal filtration N Series		
	A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
Return filters	74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
MF 020	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44
MF 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51
MFX 030	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96
MF 100	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96

$$\Delta p_{\text{Tot.}} = 0.03 + 0.37 = 0.4 \text{ bar}$$

$$\Delta p_{\text{Tot.}} = 0.43 + 5.36 = 5.79 \text{ psi}$$

The selection is correct because the total pressure drop value is inside the admissible range for top tank return filters.

In case the allowed max total pressure drop is not verified, it is necessary to repeat the calculation changing the filter length/size.

# FILTER SIZING Corrective factor

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.  
Reference oil viscosity 30 mm<sup>2</sup>/s

## Return filters

Filter element	Absolute filtration H Series					Nominal filtration N Series			
	Type	A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
MF 020	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	4.40
	2	29.20	24.12	8.00	7.22	5.00	3.33	2.85	2.00
	3	22.00	19.00	6.56	5.33	4.33	1.68	1.44	1.30
MF 030 MFX 030	1	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MF 100 MFX 100	1	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	2	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	3	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	4	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82
MF 180 MFX 180	1	3.67	3.05	1.64	1.56	1.24	1.18	1.06	0.26
	2	1.69	1.37	0.68	0.54	0.51	0.43	0.39	0.12
MF 190 MFX 190	2	1.69	1.37	0.60	0.49	0.44	0.35	0.31	0.11
MF 400 MFX 400	1	3.20	2.75	1.39	1.33	1.06	0.96	0.87	0.22
	2	2.00	1.87	0.88	0.85	0.55	0.49	0.45	0.13
	3	1.90	1.60	0.63	0.51	0.49	0.39	0.35	0.11
MF 750 MFX 750	1	1.08	0.84	0.49	0.36	0.26	0.21	0.19	0.06
MLX 250	2	3.00	3.04	1.46	1.25	1.17	-	-	M25 0.20
MLX 660	2	1.29	1.26	0.52	0.44	0.38	-	-	M25 0.10
CU 025		78.00	48.00	28.00	24.00	9.33	9.33	8.51	1.25
CU 040		25.88	20.88	10.44	10.00	3.78	3.78	3.30	1.25
CU 100		15.20	14.53	5.14	4.95	2.00	2.00	0.17	1.10
CU 250		3.25	2.55	1.55	1.35	0.71	0.71	0.59	0.25
CU 630		1.96	1.68	0.85	0.72	0.42	0.42	0.36	0.09
CU 850		1.06	0.84	0.42	0.33	0.17	0.17	0.13	0.04
DH 250	2	3.61	4.08	1.81	1.71	1.35	-	-	M25 0.55
	4	2.10	1.70	1.14	0.77	0.53	-	-	0.60
MR 100	1	19.00	17.00	6.90	6.30	4.60	2.94	2.52	1.60
	2	11.70	10.80	4.40	4.30	3.00	2.94	2.52	1.37
	3	7.80	6.87	3.70	3.10	2.70	2.14	1.84	1.34
	4	5.50	4.97	2.60	2.40	2.18	1.72	1.47	1.34
	5	4.20	3.84	2.36	2.15	1.90	1.60	1.37	1.34
MR 250	1	5.35	4.85	2.32	1.92	1.50	1.38	1.20	0.15
	2	4.00	3.28	1.44	1.10	1.07	0.96	0.83	0.13
	3	2.60	2.20	1.08	1.00	0.86	0.77	0.64	0.12
	4	1.84	1.56	0.68	0.56	0.44	0.37	0.23	0.11
MR 630	1	3.10	2.48	1.32	1.14	0.92	0.83	0.73	0.09
	2	2.06	1.92	0.82	0.76	0.38	0.33	0.27	0.08
	3	1.48	1.30	0.60	0.56	0.26	0.22	0.17	0.08
	4	1.30	1.20	0.48	0.40	0.25	0.21	0.16	0.08
	5	0.74	0.65	0.30	0.28	0.13	0.10	0.08	0.04
MR 850	1	0.60	0.43	0.34	0.25	0.13	0.12	0.09	0.03
	2	0.37	0.26	0.23	0.21	0.11	0.08	0.07	0.03
	3	0.27	0.18	0.17	0.17	0.05	0.04	0.04	0.02
	4	0.23	0.16	0.13	0.12	0.04	0.03	0.03	0.02

## Return / Suction filters

Filter element	Absolute filtration			
	Type	A10	A16	A25
RSX 116	1	5.12	4.33	3.85
	2	2.22	1.87	1.22
RSX 165 RSX 166	1	2.06	1.75	1.46
	2	1.24	1.05	0.96
	3	0.94	0.86	0.61

Filter element	Absolute filtration N Series								
	Type	A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.16	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05

## Low & Medium pressure filters

Filter element	Absolute filtration N-W Series					Nominal filtration N Series			
	Type	A03	A06	A10	A16	A25	P10	P25	M25
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.15	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05
CU 210	1	5.30	4.80	2.00	1.66	1.32	0.56	0.43	0.12
	2	3.44	2.95	1.24	1.09	0.70	0.42	0.35	0.09
	3	2.40	1.70	0.94	0.84	0.54	0.33	0.23	0.05
DN	016	7.95	7.20	3.00	2.49	1.98	0.84	0.65	0.18
	025	5.00	4.53	1.89	1.57	1.25	0.53	0.41	0.11
	040	3.13	2.66	1.12	0.98	0.63	0.38	0.32	0.08
CU 400	2	3.13	2.55	1.46	1.22	0.78	0.75	0.64	0.19
	3	2.15	1.70	0.94	0.78	0.50	0.40	0.34	0.10
	4	1.60	1.28	0.71	0.61	0.40	0.34	0.27	0.08
	5	1.00	0.83	0.47	0.34	0.20	0.24	0.19	0.06
	6	0.82	0.58	0.30	0.27	0.17	0.22	0.18	0.05
CU 900	1	0.86	0.63	0.32	0.30	0.21	-	-	0.05
CU 950	2	1.03	0.80	0.59	0.40	0.26	-	-	0.05
	3	0.44	0.40	0.27	0.18	0.15	-	-	0.02
MR 630	7	0.88	0.78	0.36	0.34	0.16	0.12	0.96	0.47

**Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.**  
Reference oil viscosity 30 mm<sup>2</sup>/s

## High pressure filters

Filter element	Absolute filtration N - R Series					Nominal filtration N Series	
	Type	A03	A06	A10	A16		A25
HP 011	1	332.71	250.07	184.32	152.36	128.36	-
	2	220.28	165.56	74.08	59.13	37.05	-
	3	123.24	92.68	41.48	33.08	20.72	-
	4	77.76	58.52	28.37	22.67	16.17	-
HP 039	2	70.66	53.20	25.77	20.57	14.67	4.90
	3	36.57	32.28	18.00	13.38	8.00	2.90
	4	26.57	23.27	12.46	8.80	5.58	2.20
HP 050	1	31.75	30.30	13.16	12.3	7.29	1.60
	2	24.25	21.26	11.70	9.09	4.90	1.40
	3	17.37	16.25	8.90	7.18	3.63	1.25
	4	12.12	10.75	6.10	5.75	3.08	1.07
	5	7.00	6.56	3.60	3.10	2.25	0.80
HP 065	1	58.50	43.46	23.16	19.66	10.71	1.28
	2	42.60	25.64	16.22	13.88	7.32	1.11
	3	20.50	15.88	8.18	6.81	3.91	0.58
HP 135	1	20.33	18.80	9.71	8.66	4.78	2.78
	2	11.14	10.16	6.60	6.38	2.22	1.11
	3	6.48	6.33	3.38	3.16	2.14	1.01
HP 150	1	17.53	15.91	7.48	6.96	5.94	1.07
	2	8.60	8.37	3.54	3.38	3.15	0.58
	3	6.53	5.90	2.93	2.79	2.12	0.49
HP 320	1	10.88	9.73	5.02	3.73	2.54	1.04
	2	4.40	3.83	1.75	1.48	0.88	0.71
	3	2.75	2.11	1.05	0.87	0.77	0.61
	4	2.12	1.77	0.98	0.78	0.55	0.47
HP 500	1	4.44	3.67	2.30	2.10	1.65	0.15
	2	3.37	2.77	1.78	1.68	1.24	0.10
	3	2.22	1.98	1.11	1.09	0.75	0.08
	4	1.81	1.33	0.93	0.86	0.68	0.05
	5	1.33	1.15	0.77	0.68	0.48	0.04
Absolute filtration - N Series							
Type	A03	A06	A10	A16	A25	M25	
HF 325	1	3.65	2.95	2.80	1.80	0.90	0.38
	2	2.03	1.73	1.61	1.35	0.85	0.36
	3	1.84	1.42	1.32	1.22	0.80	0.35

## Suction filters

Nominal filtration - N Series						
Type	P10	P25	M25	M60	M90	M250
SF 250	0.65	0.20	0.10	0.08	0.05	0.03
SF 503	-	-	0.17	0.11	0.11	0.11
SF 504	-	-	0.11	0.08	0.08	0.08
SF 505	-	-	0.23	0.18	0.18	0.18
SF 510	-	-	0.18	0.14	0.14	0.14
SF 535	-	-	0.08	0.05	0.05	0.05
SF 540	-	-	0.05	0.04	0.04	0.04

## Stainless steel high pressure filters

Filter element	Absolute filtration N Series					
	Type	A03	A06	A10	A16	A25
HP 011	1	332.71	250.07	184.32	152.36	128.36
	2	220.28	165.56	74.08	59.13	37.05
	3	123.24	92.68	41.48	33.08	20.72
	4	77.76	58.52	28.37	22.67	16.17
HP 039	2	70.66	53.20	25.77	20.57	14.67
	3	36.57	32.28	18.00	13.38	8.00
	4	26.57	23.27	12.46	8.80	5.58
HP 050	1	31.75	30.30	13.16	12.3	7.29
	2	24.25	21.26	11.70	9.09	4.90
	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25
HP 135	1	20.33	18.80	9.71	8.66	4.78
	2	11.14	10.16	6.60	6.38	2.22
	3	6.48	6.33	3.38	3.16	2.14
Absolute filtration H - U Series						
Type	A03	A06	A10	A16	A25	
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.53	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 050	1	47.33	34.25	21.50	20.50	14.71
	2	29.10	25.95	14.04	10.90	5.88
	3	20.85	19.50	10.68	8.61	4.36
	4	14.55	12.90	7.32	6.90	3.69
	5	9.86	9.34	6.40	4.80	2.50
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.60	4.44
	3	8.96	7.46	4.89	4.16	3.07

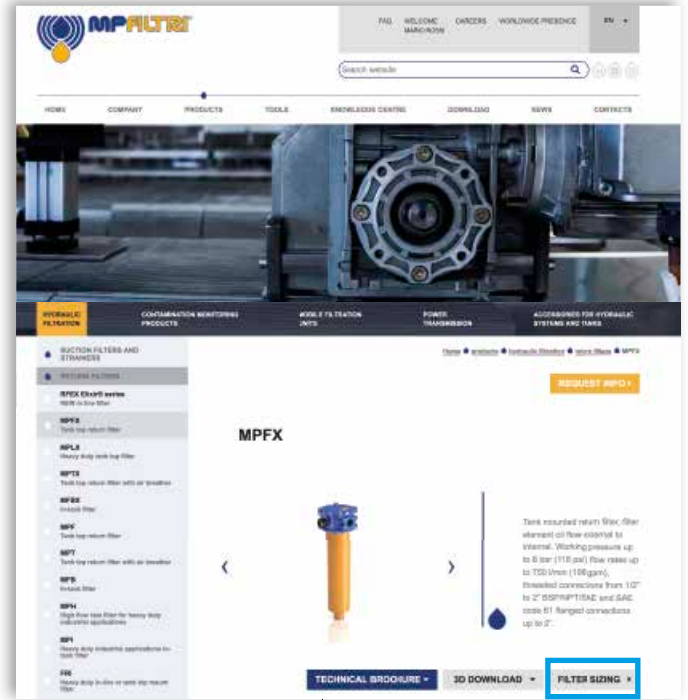
# TYPICAL FILTER SIZING Selection Software

## Step ①

Select "FILTER SIZING SOFTWARE" after login

OR

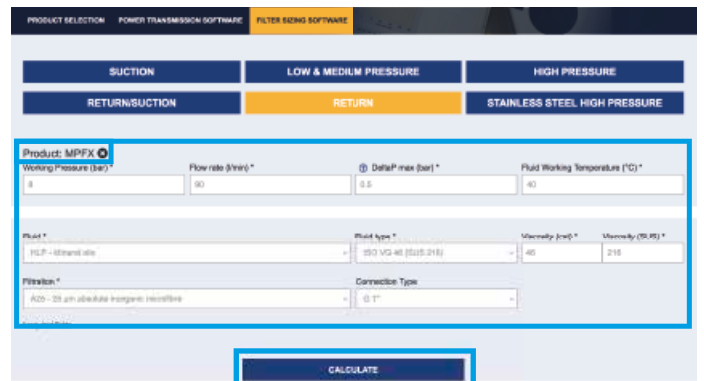
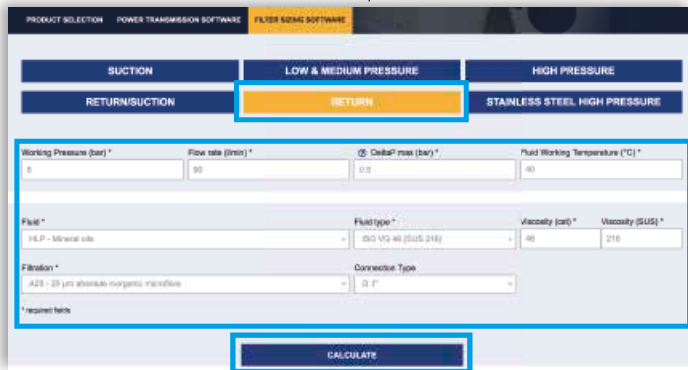
Select "FILTER SIZING" after login from a product page



Choose the type of filter family.  
Enter the main data for sizing the filter  
then push CALCULATE.

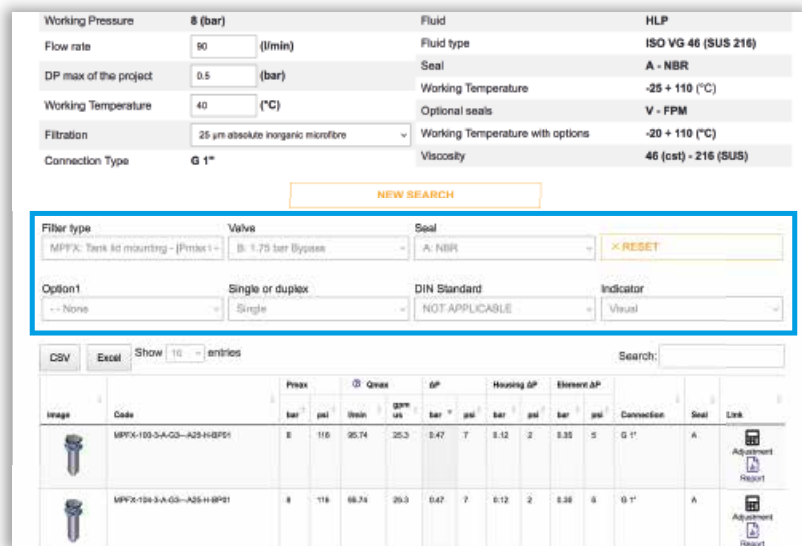
## Step ②

Enter the main data for sizing the filter  
then push CALCULATE.



## Step ③

Select the desired options to choose the appropriate filter type for the application.



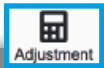
## Step 4

Choose the most suitable filter from the proposed list.

Image	Code	Peak bar	Qmax gpm	ΔP psi	Housing ΔP bar	Element ΔP psi	Connection	Seal	Link					
	MPFX-103-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	T	0.12	2	0.33	5	G 1"	A	Adjustment Report
	MPFX-104-3-A-Q3-A25-H-BPFI	8	116	25.74	25.3	0.47	T	0.12	2	0.33	5	G 1"	A	Adjustment Report

## Step 5

It is possible to change the filter modifying every parameter.



### A SAVE YOUR FILTER'S REPORT



### B MANUAL EDIT



SAVE IN YOUR ARCHIVE  
typing your reference data and then SAVE AS PDF



A new browser window displays the pdf

see **A**

Close the report window



By clicking your WELCOME button, the SHOW REPORTS is displayed: select it to see your filters list.

**LMP - low and medium pressure filters are used as process filters to protect pumps, pressure reducers and hydraulic circuits from damage due to oil contamination as per ISO 4406.**

**LMP series is available in 5 different sizes: 100, 200, 400, 900 and 950 and a wide range of versions.**

**LMP filters are available with several working pressures suitable for all hydraulic circuits as:**

- **return filters in external tank mounting construction for medium and high flow rates in single and duplex versions**
- **in-line filters for low and medium pressures for off-line applications**
- **in-line process filters for medium pressures, for example, for forced lubrication applications, in single or duplex versions**
- **in-line filters for medium pressures for filtering hydraulic boost circuits**
- **in-line filters as high holding capacity filters on test beds**

**LMP filters are thus specifically designed to be suitable for a wide range of application: from steel plants to mobile equipments, from test benches to naval application, providing the right solution for filtering requirements in all sectors.**

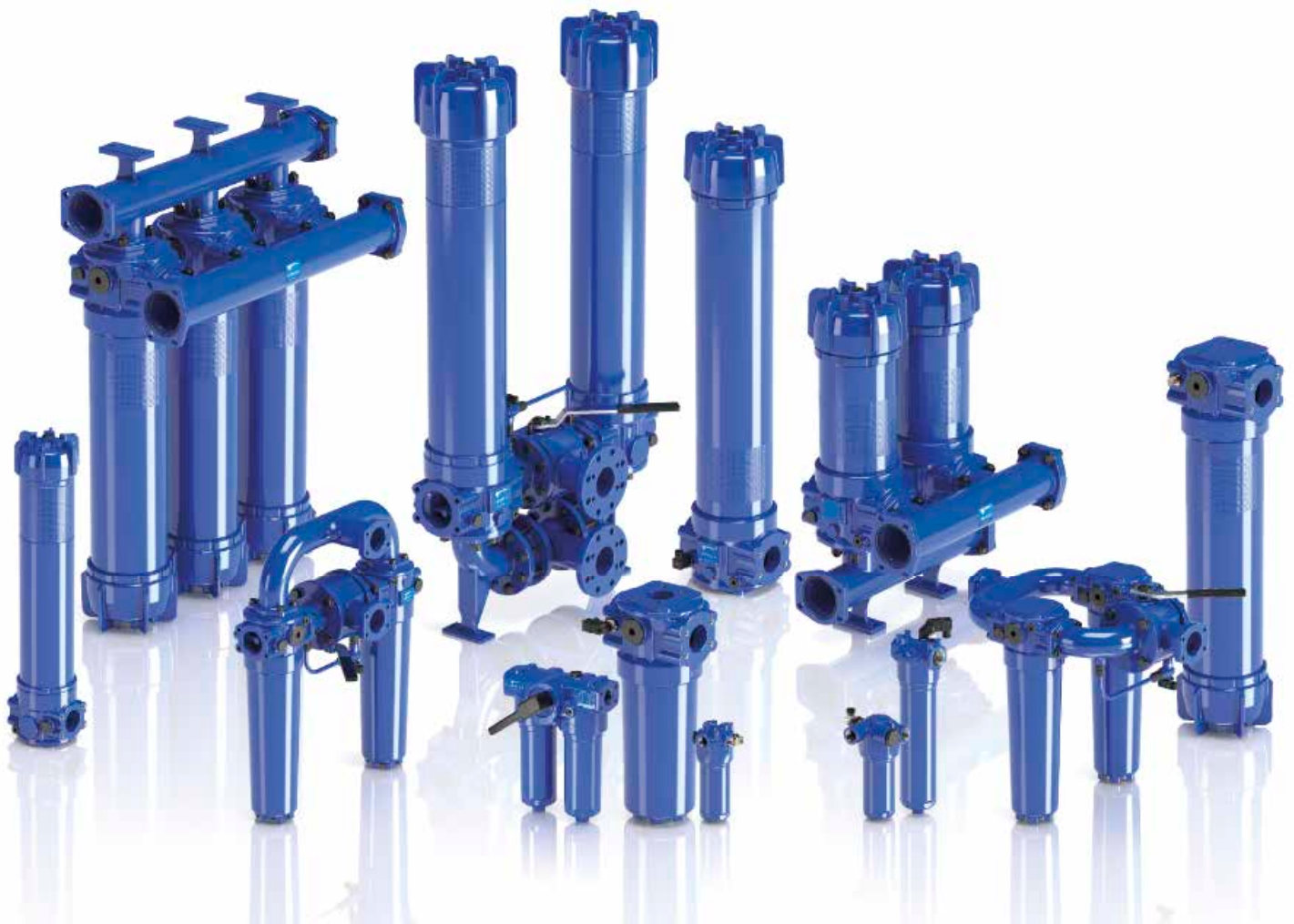
**LMP filters are available in single, manifold and duplex versions (LMD series).**

## FILTER SIZING

For the proper corrective factor Y see chapter at page 24



# Low & Medium Pressure filters



LFEX ELIXIR®	page 349
LMP 110 - 120 - 123 MULTIPORT	359
LMP 210 - 211	375
LMP 400 - 401 & 430 - 431	385
LMP 950 - 951	397
LMP 952 - 953 - 954	405
LMD 211	417
LMD 400 - 401 & 431	425

LMD 951	page 441
Filter element according to DIN 24550	449
LDP - LDD	451
LMP 900 - 901	461
LMP 902 - 903	469
INDICATORS	478
ACCESSORIES	486



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.

LFEX series

with MYCLEAN FEX 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 LFEX are protected by:

- Italian Patent n° 102014902261205
- Canadian Patent n° 2,937,258
- European Patent n° 16181725.9
- US Patent n° 15/224,337

# LFEX series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 300 l/min



## Description

## Technical data

### Low & Medium Pressure filters

**Maximum working pressure up to 1.6 MPa (16 bar)**  
**Flow rate up to 300 l/min**

LFEX is a range of low pressure filter for protection of sensitive components in low pressure hydraulic systems. They are also suitable for the off-line filtration of small reservoirs. They are directly connected to the lines of the system through the hydraulic fittings.

#### Available features:

- Female threaded connections up to 1 1/4" and SAE connections up to 1 5/8", for a maximum flow rate of 300 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid
- Bypass valve, to relieve excessive pressure drop across the filter media
- NEW Visual and electrical differential clogging indicators, capable to hold the overall dimension
- 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:

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

### Filter housing materials

- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Bowl: Polyamide

### Bypass valve

Opening pressure 350 kPa (3.5 bar)  $\pm$ 10%

### $\Delta p$ element type

- Microfibre filter elements - series N: 8 bar
- Fluid flow through the filter element from OUT to IN

### Seals

Standard NBR series A

### Temperature

From -25 °C to +110 °C

### Note

LFEX filters are provided for vertical mounting

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

Filter series	Weights [kg]	Volumes [dm <sup>3</sup> ]
<b>LFEX 060</b>	1.00	0.60
<b>LFEX 080</b>	1.15	0.80
<b>LFEX 110</b>	1.90	1.60
<b>LFEX 160</b>	2.10	2.00

## Hydraulic symbols

Filter series	Style S	Style B
<b>LFEX 060</b>	•	•
<b>LFEX 080</b>	•	•
<b>LFEX 110</b>	•	•
<b>LFEX 160</b>	•	•

### Filter element design - N Series

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
<b>LFE<sup>X</sup> 060</b>	45	47	65	66	68	84	84	86	67	73
<b>LFE<sup>X</sup> 080</b>	58	59	73	72	76	86	87	88	79	82

Connections of filter under test G 3/4"

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
<b>LFE<sup>X</sup> 060</b>	49	51	75	77	80	104	105	107	74	95
<b>LFE<sup>X</sup> 080</b>	67	67	86	87	92	107	108	110	96	112

Connections of filter under test G 1"

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
<b>LFE<sup>X</sup> 110</b>	107	115	182	195	216	295	298	300	232	242
<b>LFE<sup>X</sup> 160</b>	146	150	210	212	237	300	303	304	254	262

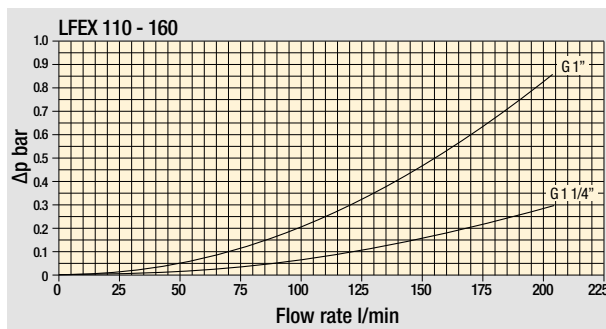
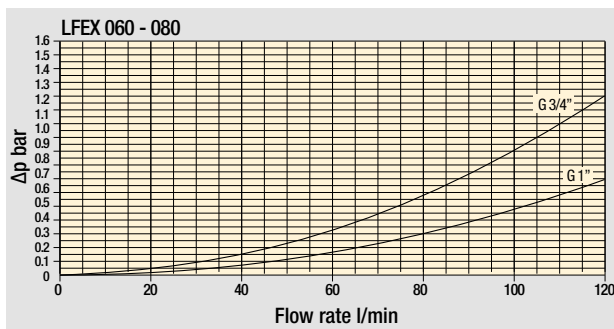
Connections of filter under test G 1 1/4"

### Maximum flow rate for a complete delivery filter with a pressure drop $\Delta p = 0.7$ bar.

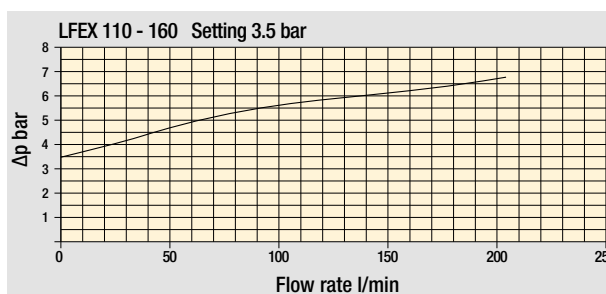
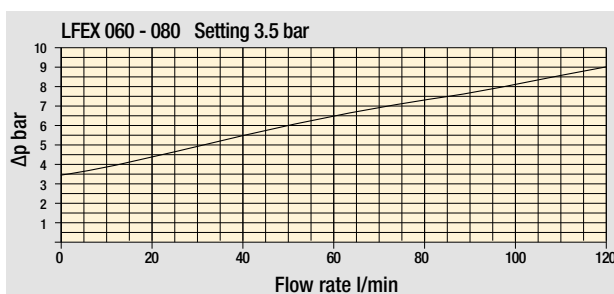
The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

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

Please, contact our Sales Department for further additional information.



Pressure drop  
Filter housings  
 $\Delta p$  pressure drop



Bypass valve  
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.

# LFEX LFEX060 - LFEX080

## Designation & Ordering code

### COMPLETE FILTER

Series and size Configuration example: **LFEX060** **B** **A** **A** **6** **A10** **N** **P01**

**LFEX060** | **LFEX080** Filter featuring **MY CLEAN** Filter Element

**Bypass valve**

**S** Without bypass

**B** With bypass 3.5 bar

**Seals and treatments**

**A** NBR

**Connections**

**A** G 3/4"

**B** G 1"

**C** 3/4" NPT

**D** 1" NPT

**E** SAE 12 - 1 1/16" - 12 UN

**F** SAE 16 - 1 5/16" - 12 UN

**Connection for clogging indicator**

**1** Without

**6** With plugged connections

**Filtration rating**

<b>A03</b> Inorganic microfiber	3 µm	<b>M25</b> Wire mesh	25 µm
<b>A06</b> Inorganic microfiber	6 µm	<b>M60</b> Wire mesh	60 µm
<b>A10</b> Inorganic microfiber	10 µm	<b>M90</b> Wire mesh	90 µm
<b>A16</b> Inorganic microfiber	16 µm	<b>P10</b> Resin impregnated paper	10 µm
<b>A25</b> Inorganic microfiber	25 µm	<b>P25</b> Resin impregnated paper	25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 8 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### FILTER ELEMENT

Element series and size Configuration example: **FEX060** **A10** **A** **N** **P01**

**FEX060** | **FEX080** Filter Element with **MY CLEAN** feature

**Filtration rating**

<b>A03</b> Inorganic microfiber	3 µm	<b>M25</b> Wire mesh	25 µm
<b>A06</b> Inorganic microfiber	6 µm	<b>M60</b> Wire mesh	60 µm
<b>A10</b> Inorganic microfiber	10 µm	<b>M90</b> Wire mesh	90 µm
<b>A16</b> Inorganic microfiber	16 µm	<b>P10</b> Resin impregnated paper	10 µm
<b>A25</b> Inorganic microfiber	25 µm	<b>P25</b> Resin impregnated paper	25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Seals and treatments**

**A** NBR

**Element Δp**  
**N** 8 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

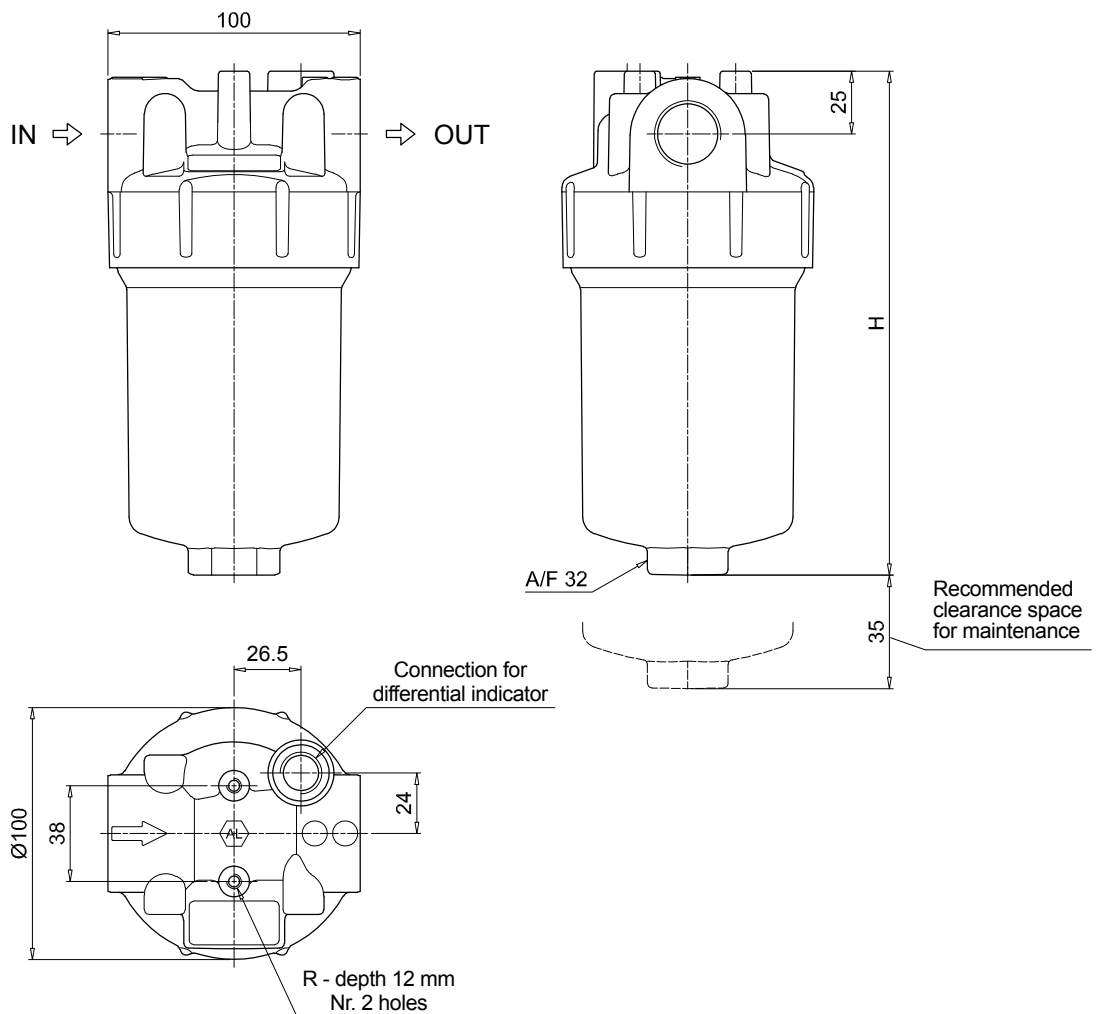
See page 478

- DES** Electrical differential indicator
- DVS** Visual differential indicator

Filter size	H [mm]
<b>060</b>	202
<b>080</b>	265

Connections	R
<b>A</b>	M6
<b>B</b>	M6
<b>C</b>	1/4" UNC
<b>D</b>	1/4" UNC
<b>E</b>	1/4" UNC
<b>F</b>	1/4" UNC



# LFEX LFEX110 - LFEX160

## Designation & Ordering code

### COMPLETE FILTER

Series and size Configuration example: **LFEX110** **B** **A** **A** **6** **A10** **N** **P01**

**LFEX110** | **LFEX160** Filter featuring **MY CLEAN** Filter Element

#### Bypass valve

- S** Without bypass
- B** With bypass 3.5 bar

#### Seals and treatments

- A** NBR

#### Connections

- A** G 1"
- B** G 1 1/4"
- C** 1" NPT
- D** 1 1/4" NPT
- E** SAE 16 - 1 5/16" - 12 UN
- F** SAE 20 - 1 5/8" - 12 UN

#### Connection for clogging indicator

- 1** Without
- 6** With plugged connections

#### Filtration rating

<b>A03</b> Inorganic microfiber	3 µm	<b>M25</b> Wire mesh	25 µm
<b>A06</b> Inorganic microfiber	6 µm	<b>M60</b> Wire mesh	60 µm
<b>A10</b> Inorganic microfiber	10 µm	<b>M90</b> Wire mesh	90 µm
<b>A16</b> Inorganic microfiber	16 µm	<b>P10</b> Resin impregnated paper	10 µm
<b>A25</b> Inorganic microfiber	25 µm	<b>P25</b> Resin impregnated paper	25 µm

**WA025** Water absorber inorganic microfiber 25 µm

Element Δp  
**N** 8 bar

Execution  
**P01** MP Filtri standard  
**Pxx** Customized

### FILTER ELEMENT

Element series and size Configuration example: **FEX110** **A10** **A** **N** **P01**

**FEX110** | **FEX160** Filter Element with **MY CLEAN** feature

#### Filtration rating

<b>A03</b> Inorganic microfiber	3 µm	<b>M25</b> Wire mesh	25 µm
<b>A06</b> Inorganic microfiber	6 µm	<b>M60</b> Wire mesh	60 µm
<b>A10</b> Inorganic microfiber	10 µm	<b>M90</b> Wire mesh	90 µm
<b>A16</b> Inorganic microfiber	16 µm	<b>P10</b> Resin impregnated paper	10 µm
<b>A25</b> Inorganic microfiber	25 µm	<b>P25</b> Resin impregnated paper	25 µm

**WA025** Water absorber inorganic microfiber 25 µm

#### Seals and treatments

- A** NBR

Element Δp  
**N** 8 bar

Execution  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

See page 478

**DES** Electrical differential indicator

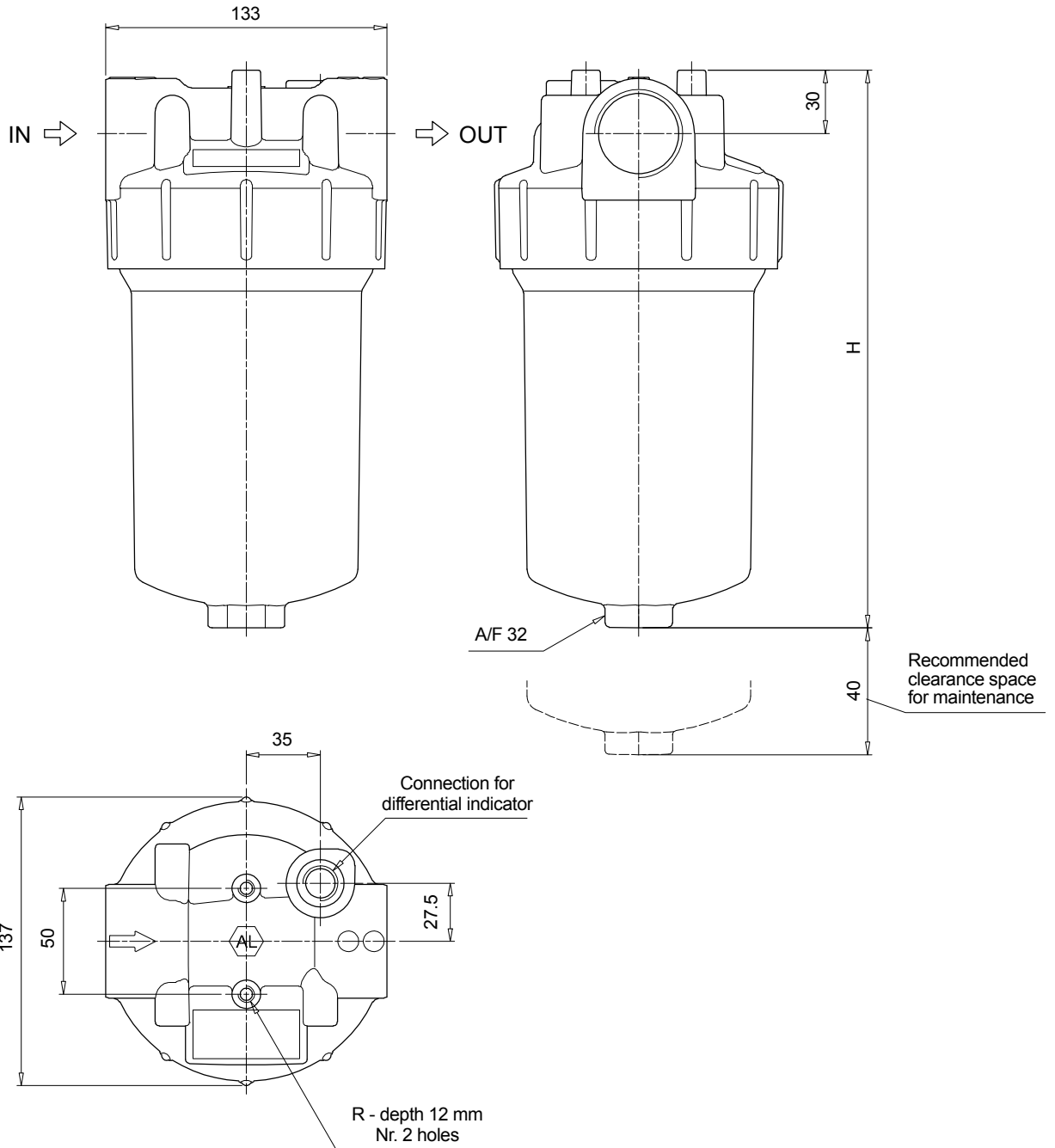
**DVS** Visual differential indicator



Filter size	H [mm]
<b>110</b>	266
<b>160</b>	315

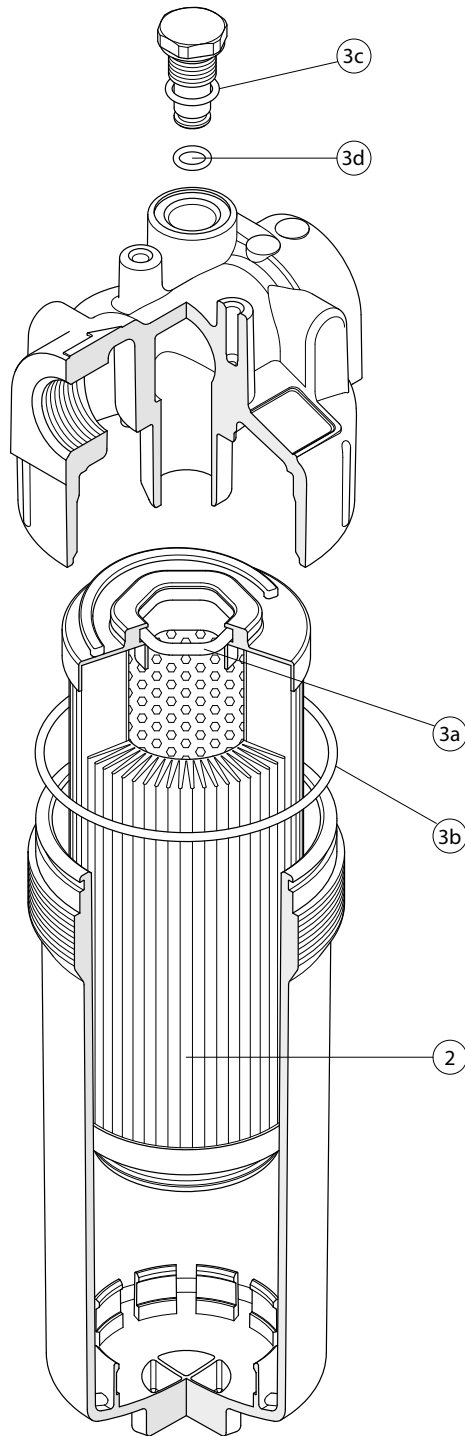
  

Connections	R
<b>A</b>	M8
<b>B</b>	M8
<b>C</b>	5/16" UNC
<b>D</b>	5/16" UNC
<b>E</b>	5/16" UNC
<b>F</b>	5/16" UNC



# LFEX SPARE PARTS

Order number for spare parts



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.
	<b>2</b>	<b>3</b> (3a ÷ 3d)	<b>4</b>
Filter series	Filter element	Seal Kit code number NBR	Indicator connection plug NBR
<b>LFEX 060-080</b>	See order table	02050771	T3H
<b>LFEX 110-160</b>		02050772	





# LMP 110-120-123 series

MULTIPOINT

Maximum working pressure up to 8 MPa (80 bar) - Flow rate up to 175 l/min



### Description

### Technical data

#### Low & Medium Pressure filters

**Maximum working pressure up to 8 MPa (80 bar)**  
**Flow rate up to 175 l/min**

LMP110 is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.

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

#### Available features:

- Female threaded connections up to 1", for a maximum return flow rate of 175 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
- Visual, electrical and electronic differential clogging indicators
- Multiport and multifunction schemes, to meet any type of application.
- LMP112: 3/4" additional input port
- LMP116: 3/4" additional output port
- LMP118: 3/4" bypass port, to send the bypass flow to the reservoir instead of the system
- LMP119: 3/4" relief port, to relief the input pressure in the filter, protecting the components downstream the filter against back pressure caused by the pressure drop (cold starts)
- LMP120: connections placed in the same side
- LMP122: connections placed in the same side and 1" additional output port
- LMP123: 2 and 3 bar integrated relief valve

#### Common applications:

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

#### Filter housing materials

- Head: Aluminium
- Housing: Cataphoresis - Painted steel
- Bypass valve: Brass - Aluminium

#### Pressure

- Test pressure: 12 MPa (120 bar)
- Burst pressure:
  - LMP 110: 29 MPa (290 bar)
  - LMP 120/130: 38 MPa (380 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 8 MPa (80 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

#### Δp element type

- Microfibre filter elements - series N - W: 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

#### Note

LMP MULTIPOINT filters are provided for vertical mounting

### 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>LMP 110-112-116-118-119</b>		1.60	1.80	2.10	2.60		0.75	0.81	1.11	1.53
<b>LMP 120-122</b>		1.90	2.10	2.40	2.90		0.75	0.81	1.11	1.53
<b>LMP 123</b>		1.70	1.90	2.20	2.70		0.75	0.81	1.11	1.53

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
<b>LMP 110</b>	<b>1</b>	40	42	65	69	85	163	117	120
	<b>2</b>	49	57	83	83	101	163	136	138
	<b>3</b>	66	70	92	102	124	164	142	144
	<b>4</b>	86	102	118	124	144	165	148	149
<b>LMP 112</b>	<b>1</b>	36	38	55	57	67	105	84	86
	<b>2</b>	44	49	66	66	76	105	93	94
	<b>3</b>	56	58	71	77	87	106	96	97
	<b>4</b>	67	77	85	88	97	106	99	99
<b>LMP 116</b>	<b>1</b>	36	38	54	56	64	96	79	80
	<b>2</b>	43	49	63	64	72	96	86	87
	<b>3</b>	54	57	68	73	82	96	88	89
	<b>4</b>	65	73	79	82	89	96	91	91
<b>LMP 118</b>	<b>1</b>	40	42	65	69	85	163	117	120
	<b>2</b>	49	57	83	83	101	163	136	138
	<b>3</b>	66	70	92	102	124	164	142	144
	<b>4</b>	86	102	118	124	144	165	148	149
<b>LMP 120</b>	<b>1</b>	40	43	66	70	87	172	121	125
	<b>2</b>	50	58	85	85	104	172	142	144
	<b>3</b>	67	71	94	105	129	173	149	151
	<b>4</b>	88	106	122	129	151	174	155	157
<b>LMP 122</b>	<b>1</b>	39	42	64	67	81	146	109	111
	<b>2</b>	49	56	80	80	96	146	124	126
	<b>3</b>	65	68	88	96	114	146	129	130
	<b>4</b>	82	97	110	115	131	147	134	135

**Maximum flow rate for a complete low and medium pressure filter with a pressure drop  $\Delta p = 0.7$  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.

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
<b>LMP 123</b>	<b>1</b>	35	37	50	52	59	83	70	71
	<b>2</b>	41	46	58	58	65	83	76	76
	<b>3</b>	51	53	62	65	72	83	77	78
	<b>4</b>	59	65	70	72	78	83	79	79

**Maximum flow rate for a complete low and medium pressure filter with a pressure drop  $\Delta p = 2.7$  bar.**

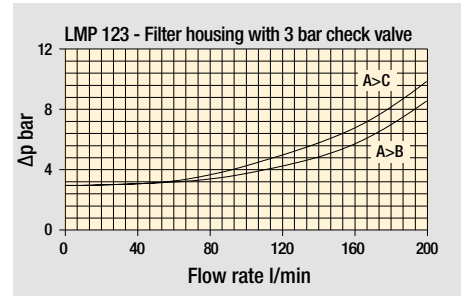
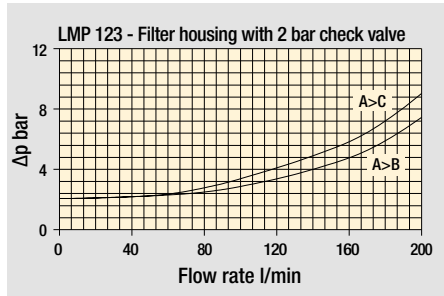
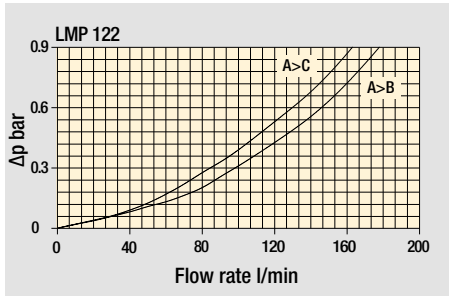
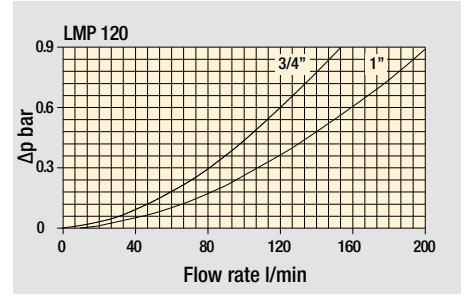
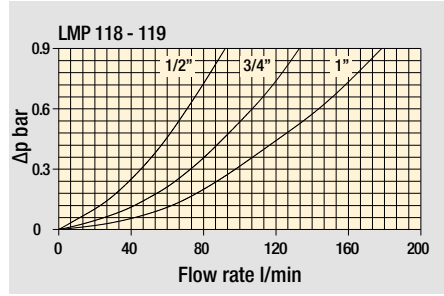
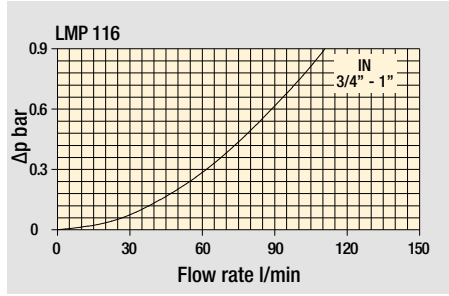
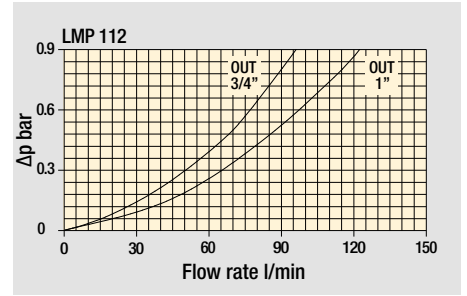
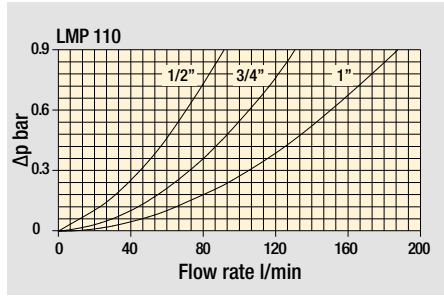
The reference fluid has a kinematic viscosity of 30 mm<sup>2</sup>/s (cSt) and a density of 0.86 kg/dm<sup>3</sup>.

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

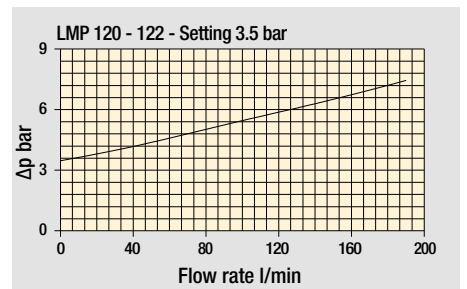
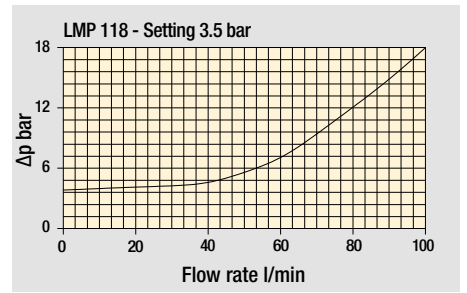
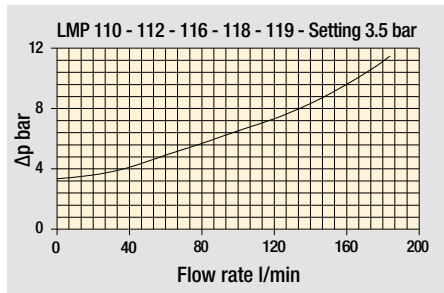
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

## Pressure drop

### Filter housings $\Delta p$ pressure drop




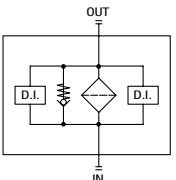
### Bypass valve pressure drop



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.


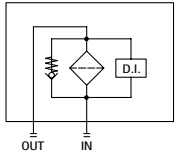


**LMP 110** In-Line filter


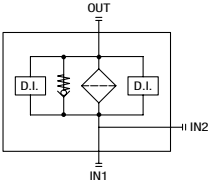
The hydraulic symbol shows a central diamond-shaped valve with a filter element (represented by a zigzag line) in the main flow path. Two side ports are labeled 'D.I.' (Direct Inlet). The main flow is labeled 'IN' at the bottom and 'OUT' at the top.

**LMP 120** Port IN-OUT on the same side


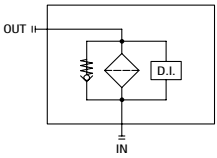
The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' and 'OUT' ports are on the same side of the valve. A side port is labeled 'D.I.'.

**LMP 112** Double IN port


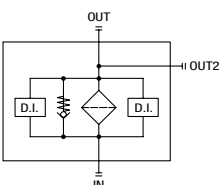
The hydraulic symbol shows a diamond-shaped valve with a filter element. Two 'IN' ports are shown: 'IN1' at the bottom and 'IN2' on the right side. The 'OUT' port is at the top. Side ports are labeled 'D.I.'.

**LMP 122** Lateral OUT port high flow

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. The 'OUT' port is on the left side. A side port is labeled 'D.I.'.


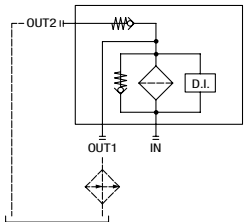
**LMP 116** Double OUT port

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. Two 'OUT' ports are shown: 'OUT' at the top and 'OUT2' on the right side. Side ports are labeled 'D.I.'.

**LMP 123** Bypass valve for heat exchanger high flow


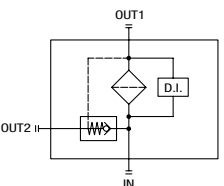
Type 1

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. The 'OUT' port is at the top. A side port is labeled 'D.I.'. A bypass line with a valve symbol connects 'OUT1' (bottom) to 'OUT2' (top).

**LMP 118** Bypass lateral


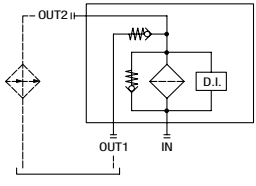
Always cleaning fluid in OUT port

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. The 'OUT' port is at the top. A side port is labeled 'D.I.'. A bypass line with a valve symbol connects 'OUT2' (left) to 'OUT1' (top).


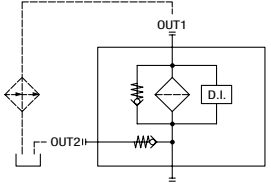
**LMP 123** Bypass valve for heat exchanger high flow

Type 2

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. The 'OUT' port is at the top. A side port is labeled 'D.I.'. A bypass line with a valve symbol connects 'OUT2' (left) to 'OUT1' (bottom).

**LMP 119** Safety valve 6 bar for heat exchanger

The hydraulic symbol shows a diamond-shaped valve with a filter element. The 'IN' port is at the bottom. The 'OUT' port is at the top. A side port is labeled 'D.I.'. A safety valve symbol is connected to the 'OUT' line, leading to 'OUT2'.

Designation & Ordering code

**COMPLETE FILTER**

Series and size Configuration example: **LMP112** | **4** | **B** | **A** | **D** | **1** | **A10** | **N** | **P01**  
**LMP110** | **LMP112** | **LMP116**

Length **1** | **2** | **3** | **4**

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments **A** NBR | **V** FPM

Connections		Aux (only LMP 112 - 116)
<b>A</b>	G 3/4"	G 3/4"
<b>B</b>	G 1"	G 3/4"
<b>C</b>	3/4" NPT	3/4" NPT
<b>D</b>	1" NPT	3/4" NPT
<b>E</b>	SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN
<b>F</b>	SAE 16 - 1 5/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN

Connection for differential indicator **1** Without | **2** With standard connection | **3** With connection on the opposite side | **6** With two connections on both sides

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

Element  $\Delta p$  **N** 20 bar | Execution **P01** MP Filtri standard | **Pxx** Customized

**FILTER ELEMENT**

Element series and size Configuration example: **CU110** | **4** | **A10** | **A** | **N** | **P01**  
**CU110**

Element length **1** | **2** | **3** | **4**

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

Seals and treatments **A** NBR | **V** FPM | Element  $\Delta p$  **N** 20 bar | Execution **P01** MP Filtri standard | **Pxx** Customized

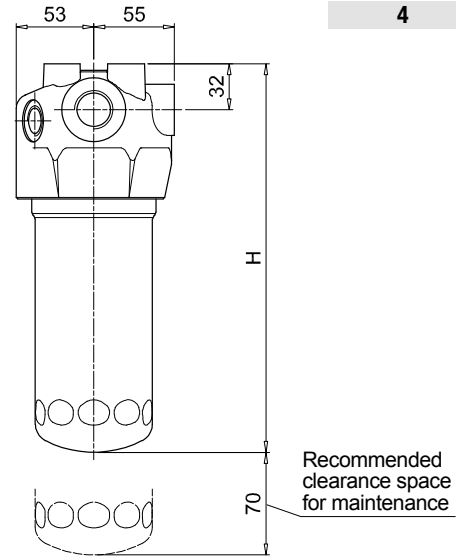
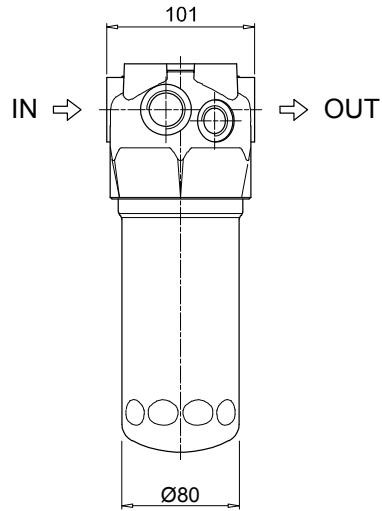
**CLOGGING INDICATORS**

See page 478

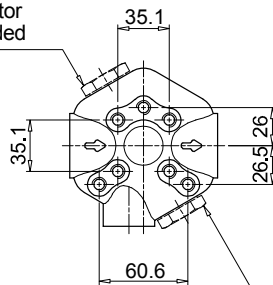
<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

LMP110 - LMP112  
LMP116

Filter length	H [mm]
1	182
2	215
3	265
4	365

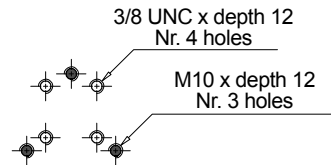


2 - Standard connection for differential indicator  
T2 plug not included

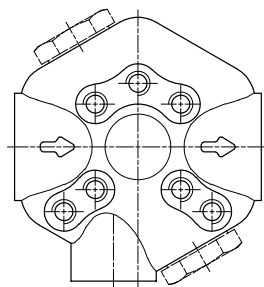


3 - Connection for differential indicator on the opposite side  
T2 plug not included

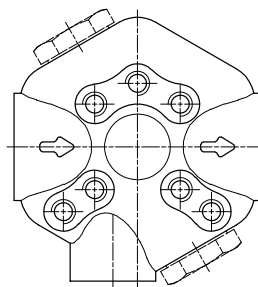
Fixing holes  
Option for Metric and UNC screws



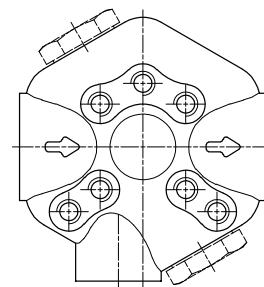
LMP 110



LMP 112



LMP 116



↑  
Aux  
IN

↓  
Aux  
OUT

Designation & Ordering code

**COMPLETE FILTER**

Series and size **LMP118 | LMP119** Configuration example: **LMP118** **4** **B** **A** **D** **1** **A10** **N** **P01**

**Length**  
**1** | **2** | **3** | **4**

**Bypass valve**  
**B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

Connections		Aux OUT
<b>A</b> G 3/4"	G 3/4"	
<b>B</b> G 1"	G 3/4"	
<b>C</b> 3/4" NPT	3/4" NPT	
<b>D</b> 1" NPT	3/4" NPT	
<b>E</b> SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN	
<b>F</b> SAE 16 - 1 5/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN	

**Connection for differential indicator**  
**1** Without  
**2** With standard connection

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

**FILTER ELEMENT**

Element series and size **CU110** Configuration example: **CU110** **4** **A10** **A** **N** **P01**

**Element length**  
**1** | **2** | **3** | **4**

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**Seals and treatments**  
**A** NBR  
**V** FPM

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

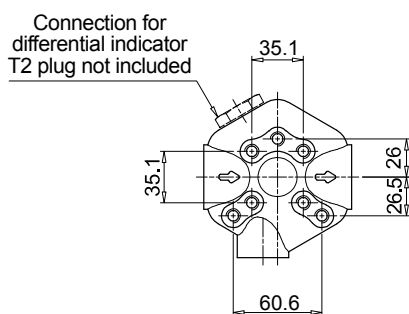
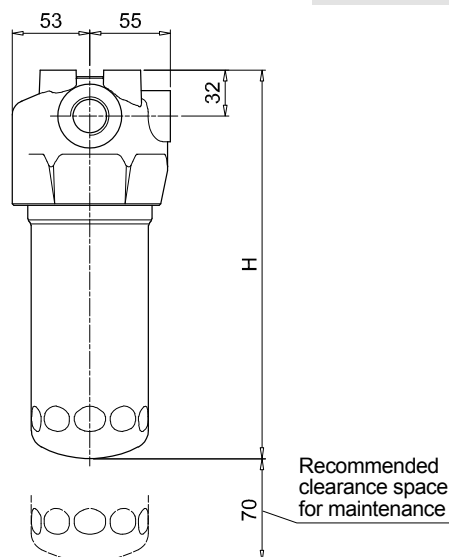
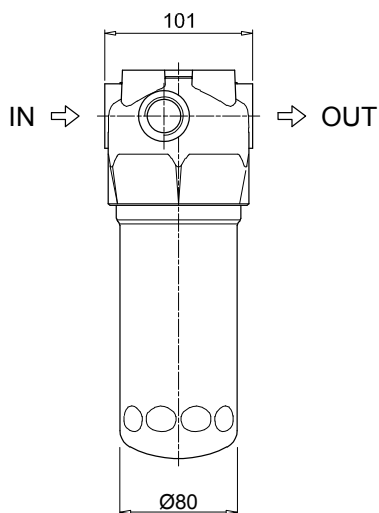
**CLOGGING INDICATORS**

See page 478

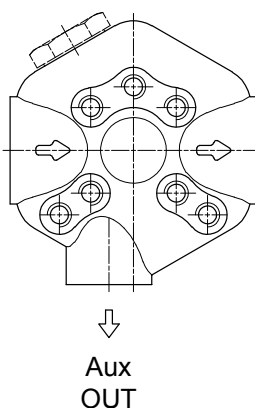
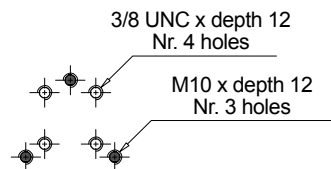
<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

LMP118 - LMP119

Filter length	H [mm]
<b>1</b>	182
<b>2</b>	215
<b>3</b>	265
<b>4</b>	365



**Fixing holes**  
Option for Metric and UNC screws



Designation & Ordering code

**COMPLETE FILTER**

Series and size **LMP120 | LMP122** Configuration example: **LMP120** **4** **B** **A** **D** **1** **A10** **N** **P01**

Length **1** | **2** | **3** | **4**

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments **A** NBR | **V** FPM

Connections	LMP120	LMP122
<b>A</b> G 3/4"	•	-
<b>B</b> G 1"	•	•
<b>C</b> 3/4" NPT	•	-
<b>D</b> 1" NPT	•	•
<b>E</b> SAE 12 - 1 1/16" - 12 UN	•	-
<b>F</b> SAE 16 - 1 5/16" - 12 UN	•	•

Connection for differential indicator **1** Without | **2** With standard connection

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

Element Δp **N** 20 bar

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

**FILTER ELEMENT**

Element series and size **CU110** Configuration example: **CU110** **4** **A10** **A** **N** **P01**

Element length **1** | **2** | **3** | **4**

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

Seals and treatments **A** NBR | **V** FPM

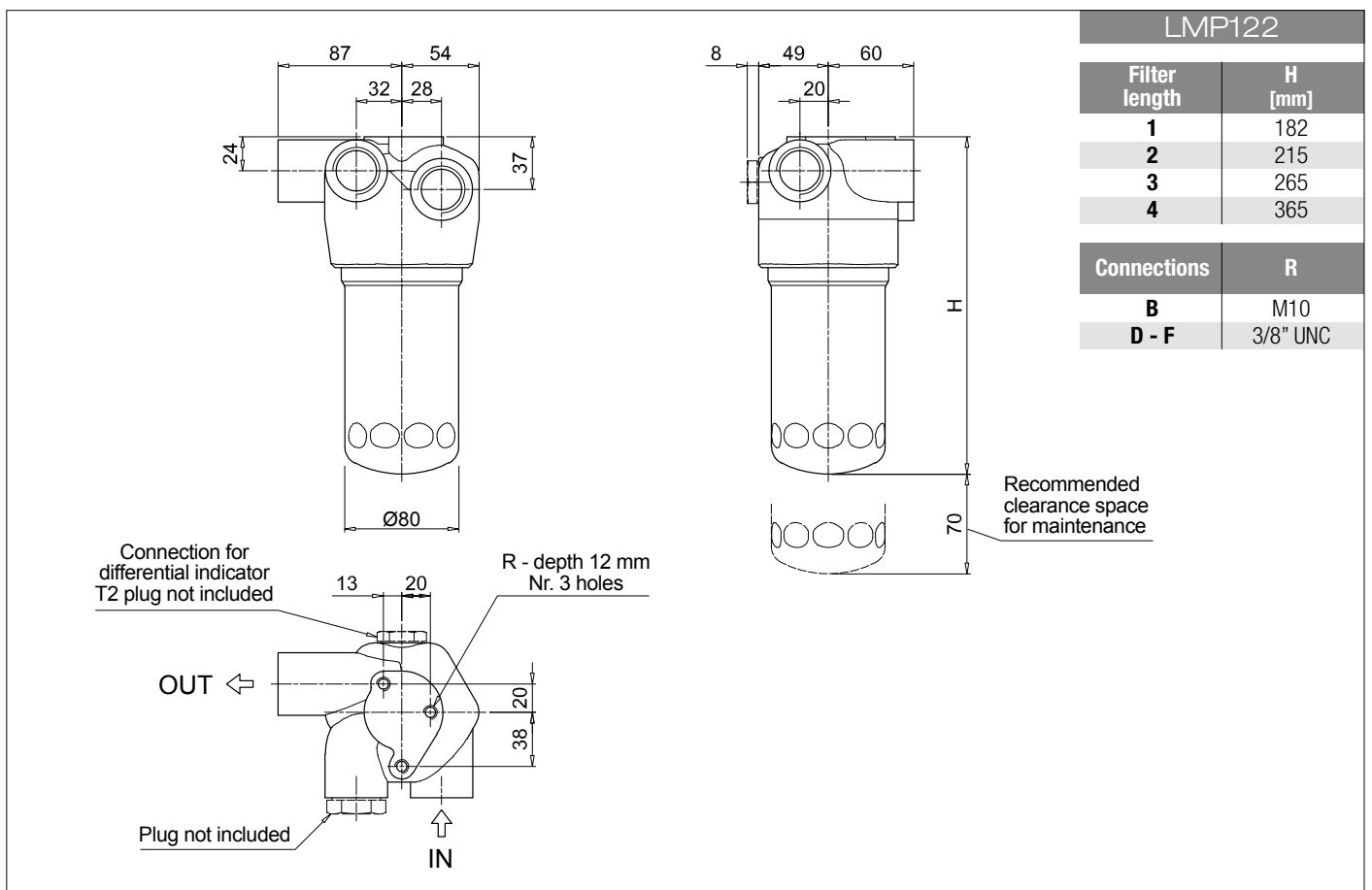
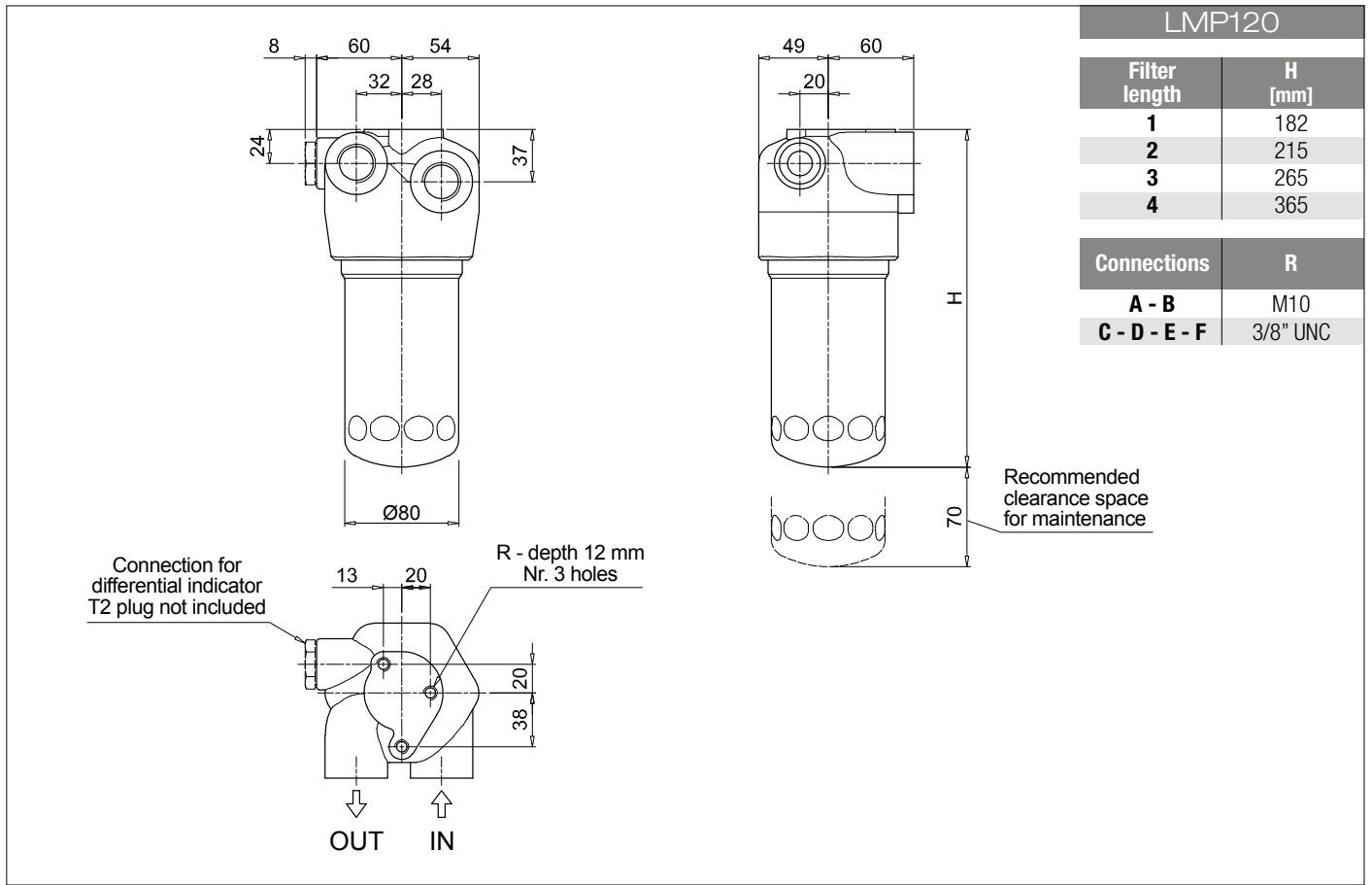
Element Δp **N** 20 bar

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

**CLOGGING INDICATORS**

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug



Designation & Ordering code

**COMPLETE FILTER**

Series and size **LMP123** Configuration example: **LMP123** **4** **R** **A** **F** **1** **A10** **N** **P01**

**Length**  
**1** | **2** | **3** | **4** |

Valves	Bypass	OUT to cooler	Check valve
<b>C</b>	without	front	2 bar
<b>D</b>			3 bar
<b>G</b>		side	2 bar
<b>H</b>			3 bar
<b>M</b>	With bypass 3.5 bar	front	2 bar
<b>N</b>			3 bar
<b>Q</b>		side	2 bar
<b>R</b>			3 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

**Connections**  
**B** G 1"  
**F** SAE 16 - 1 5/16" - 12 UN

**Connection for differential indicator**  
**1** Without  
**2** With standard connection

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

**FILTER ELEMENT**

Element series and size **CU110** Configuration example: **CU110** **4** **A10** **A** **N** **P01**

**Element length**  
**1** | **2** | **3** | **4** |

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**Seals and treatments**  
**A** NBR  
**V** FPM

**Element Δp**  
**N** 20 bar

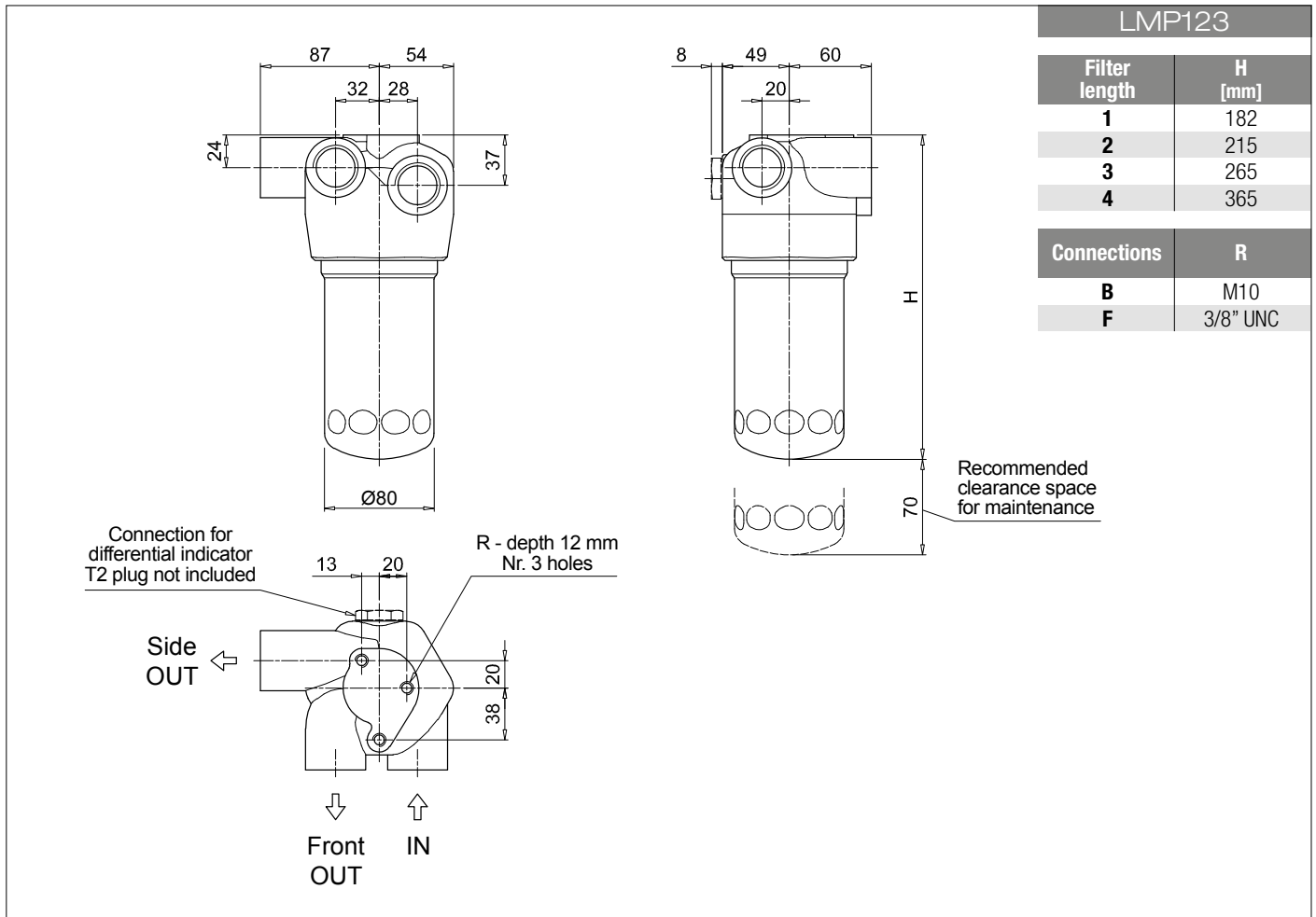
**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

**CLOGGING INDICATORS**

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug



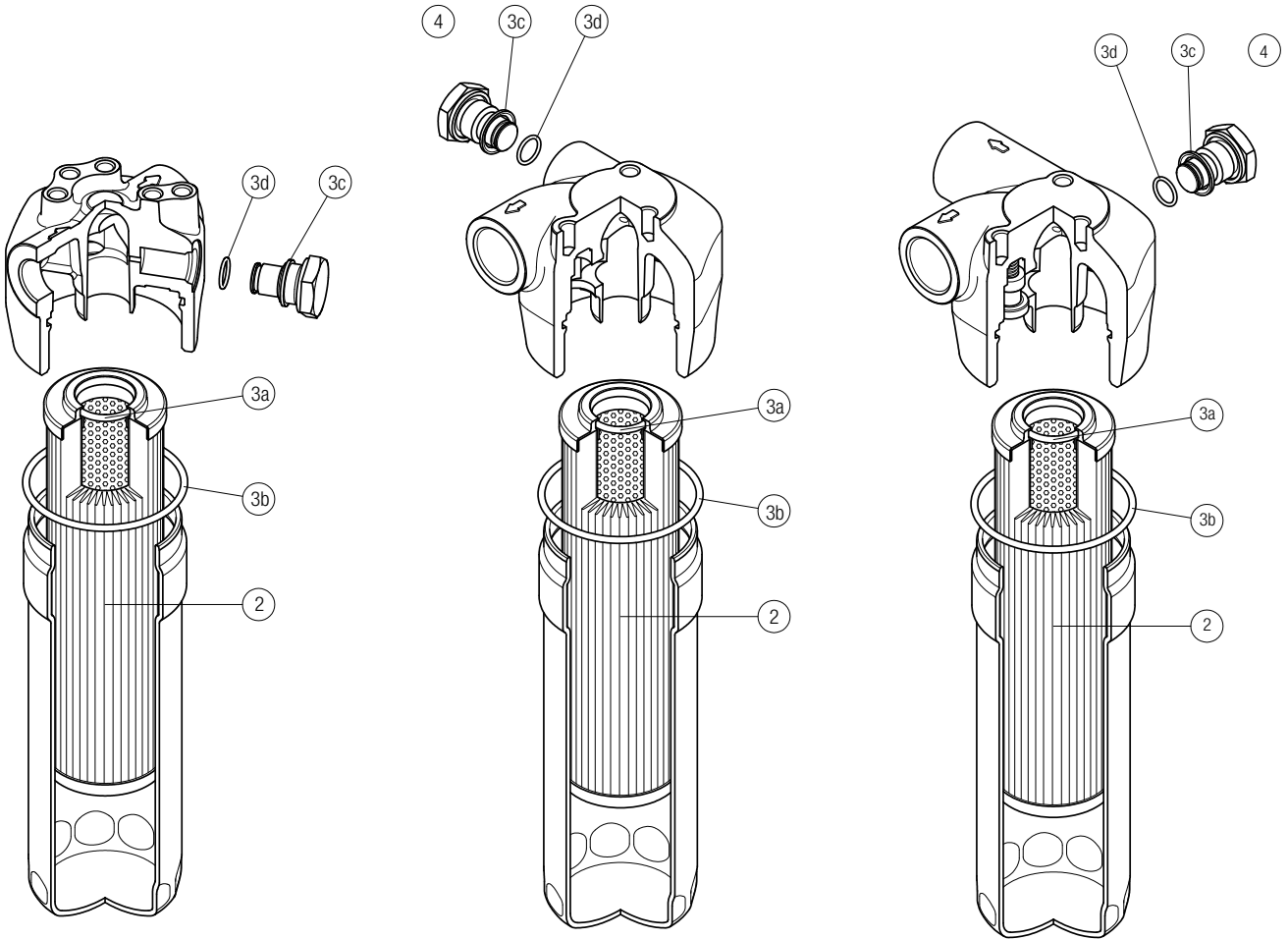


Order number for spare parts

**LMP 110 - 112 - 116 - 118 - 119**

**LMP 120**

**LMP 122 - 123**



Item:	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		
LMP 110-112-116 -118-119	See order table	NBR	FPM	NBR	FPM	
<b>LMP 120</b>		02050478	02050479	T2H	T2V	
<b>LMP 122-123</b>						





# LMP 210-211

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 365 l/min



# LMP 210-211 GENERAL INFORMATION

## Description

## Technical data

### Low & Medium Pressure filters

**Maximum working pressure up to 6 MPa (60 bar)**  
**Flow rate up to 365 l/min**

LMP210 is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.

They are also suitable for the off-line filtration of small reservoirs. They are directly connected to the lines of the system through the hydraulic fittings.

#### Available features:

- Flanged connections up to 1 1/2", for a maximum flow rate of 365 l/min (LMP210)
- Female threaded connections up to 1 1/2", for a maximum return flow rate of 365 l/min (LMP211)
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

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

### Filter housing materials

- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

### Pressure

- Test pressure: 9 MPa (90 bar)
- Burst pressure: 21 MPa (210 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

### Δp element type

- Microfibre 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

Inlet/Outlet In-Line

### Note

LMP 210 - 211 filters are provided for vertical mounting

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

Filter series	Weights [kg]			Volumes [dm <sup>3</sup> ]				
	Length	1	2	3	Length	1	2	3
<b>LMP 210-211</b>		3.10	4.80	6.40		1.60	2.10	2.80

Filter series	Length	Filter element design - N Series									
		A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LMP 210	1	106	130	190	200	221	286	287	287	261	265
	2	153	175	220	237	249	288	289	290	265	269
	3	204	214	248	260	265	289	290	291	277	281
LMP 211	1	118	149	227	240	269	358	359	360	324	330
	2	178	207	268	292	307	361	362	363	329	335
	3	247	260	306	323	329	362	363	364	345	351

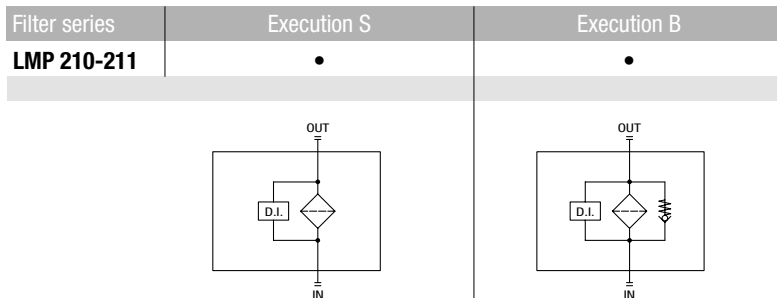
### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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).

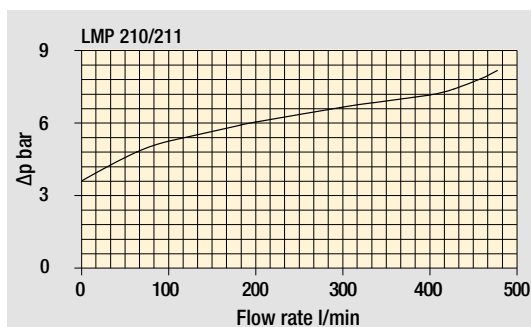
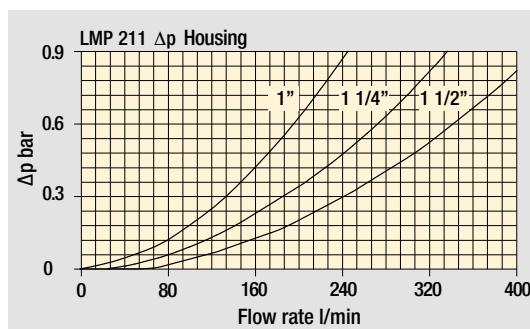
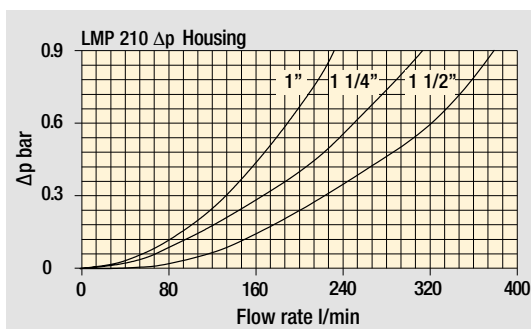
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

## Hydraulic symbols



## Pressure drop

Filter housings  
 $\Delta p$  pressure drop



Bypass valve  
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.

# LMP 210

## Designation & Ordering code

### COMPLETE FILTER

Configuration example: **LMP210** **3** **B** **A** **F1** **A10** **N** **P01**

**Series and size**  
**LMP210**

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

**Bypass valve**  
**S** Without bypass | **B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

**Connections**  
**F1** 1" SAE 3000 psi/M  
**F2** 1 1/4" SAE 3000 psi/M  
**F3** 1 1/2" SAE 3000 psi/M  
**F4** 1" SAE 3000 psi/UNC  
**F5** 1 1/4" SAE 3000 psi/UNC  
**F6** 1 1/2" SAE 3000 psi/UNC

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm | **P10** Resin impregnated paper 10 µm  
**A25** Inorganic microfiber 25 µm | **P25** Resin impregnated paper 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### FILTER ELEMENT

Configuration example: **CU210** **3** **A10** **A** **N** **P01**

**Element series and size**  
**CU210**

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

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm | **P10** Resin impregnated paper 10 µm  
**A25** Inorganic microfiber 25 µm | **P25** Resin impregnated paper 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

**Seals and treatments**  
**A** NBR  
**V** FPM

**Element Δp**  
**N** 20 bar

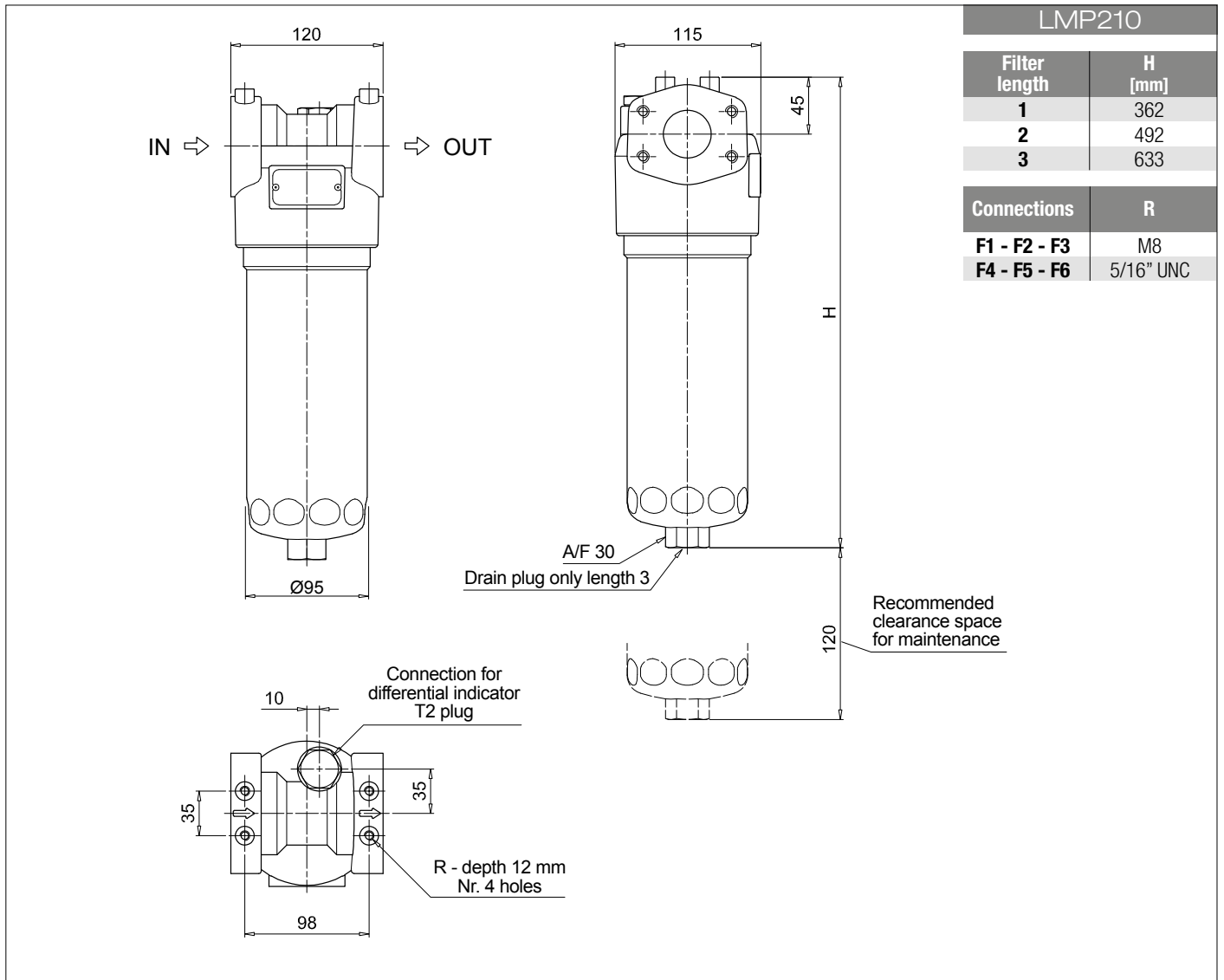
**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug





LMP210	
Filter length	H [mm]
1	362
2	492
3	633
Connections	R
F1 - F2 - F3	M8
F4 - F5 - F6	5/16" UNC

# LMP 211

## Designation & Ordering code

### COMPLETE FILTER

Series and size **LMP211** Configuration example: **LMP211** **3** **B** **A** **D** **6** **A10** **N** **P01**

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

**Bypass valve**  
**S** Without bypass | **B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

**Connections**  
**A** G 1"  
**B** G 1 1/4"  
**C** G 1 1/2"  
**D** 1" NPT  
**E** 1 1/4" NPT  
**F** 1 1/2" NPT  
**G** SAE 16 - 1 5/16" - 12 UN  
**H** SAE 20 - 1 5/8" - 12 UN  
**I** SAE 24 - 1 7/8" - 12 UN

**Connection for differential indicator**  
**6** With plugged connection

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm | **P10** Resin impregnated paper 10 µm  
**A25** Inorganic microfiber 25 µm | **P25** Resin impregnated paper 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### FILTER ELEMENT

Element series and size **CU210** Configuration example: **CU210** **3** **A10** **A** **N** **P01**

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

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm | **P10** Resin impregnated paper 10 µm  
**A25** Inorganic microfiber 25 µm | **P25** Resin impregnated paper 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

**Seals and treatments**  
**A** NBR  
**V** FPM

**Element Δp**  
**N** 20 bar

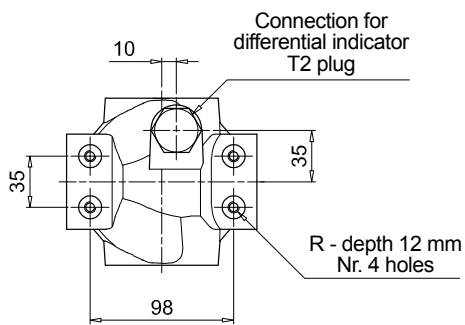
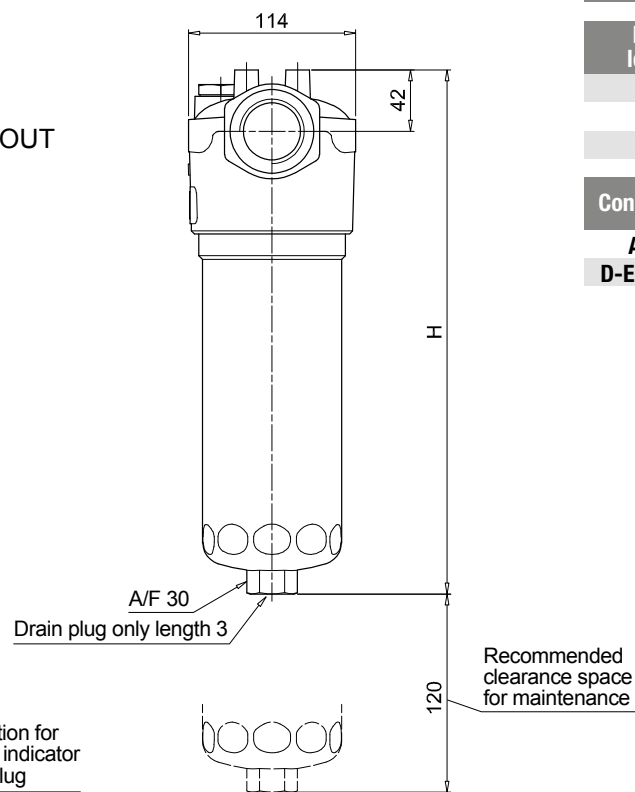
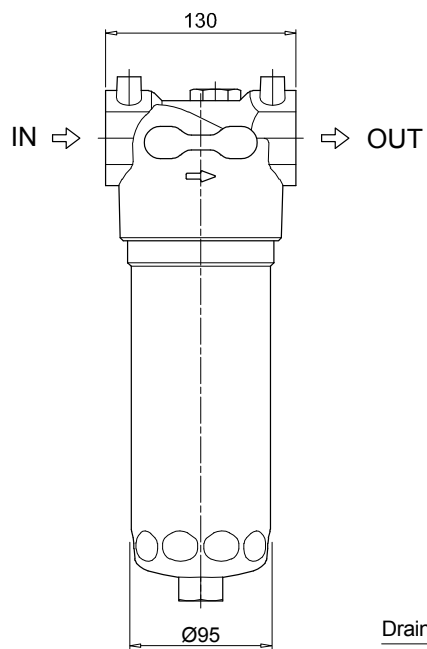
**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

See page 478

**DEA** Electrical differential indicator  
**DEM** Electrical differential indicator  
**DLA** Electrical / visual differential indicator  
**DLE** Electrical / visual differential indicator

**DTA** Electronic differential indicator  
**DVA** Visual differential indicator  
**DVM** Visual differential indicator  
**T2** Plug



### LMP211

Filter length	H [mm]
1	358
2	488
3	629

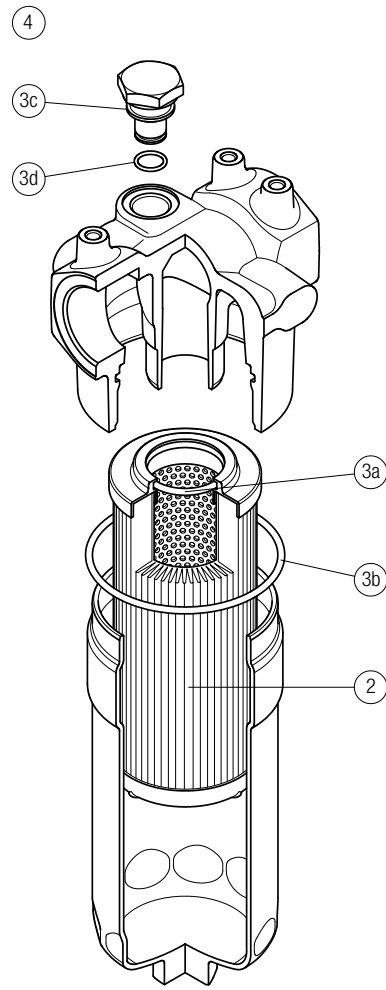
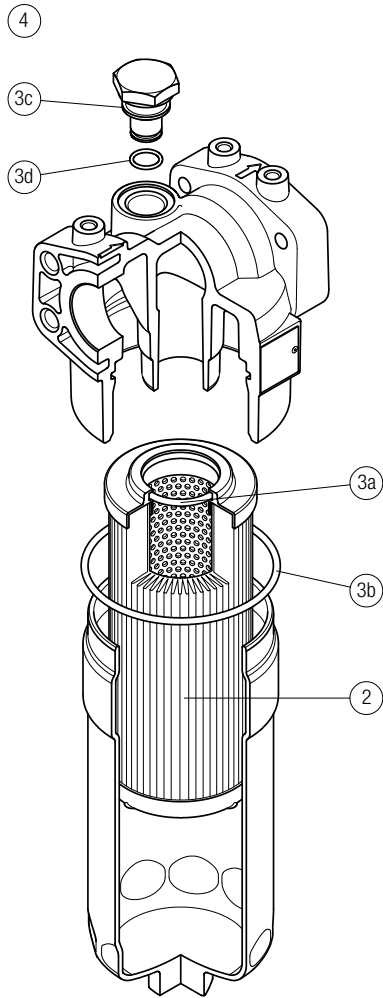
Connections	R
A-B-C	M8
D-E-F-G-H-I	5/16" UNC

# LMP 210-211 SPARE PARTS

Order number for spare parts

LMP 210

LMP 211



Item:	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		
LMP 210-211	See order table	NBR	FPM	NBR	FPM	
	<b>2</b>	<b>3</b> (3a ÷ 3d)		<b>4</b>		
		02050435	02050436	T2H	T2V	





# LMP 400-401 & 430-431 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 780 l/min



## Description

## Technical data

### Low & Medium Pressure filters

**Maximum working pressure up to 6 MPa (60 bar)**  
**Flow rate up to 780 l/min**

LMP400 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.

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

#### Available features:

- Female threaded connections up to 2" and flanged connections up to 2 1/2", for a maximum flow rate of 780 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-line filtration of reservoirs
- Filtration systems

### Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Bypass valve: Steel

### Pressure LMP 400 length 2 - 3 - 4

- Working pressure: 6 MPa (60 bar)
- Test pressure: 9 MPa (90 bar)
- Burst pressure: 21 MPa (210 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

### Pressure LMP 400 length 5 - 6

- Working pressure: 5 MPa (50 bar)
- Test pressure: 7.5 MPa (75 bar)
- Burst pressure: 15 MPa (150 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 5 MPa (50 bar)

### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

### Δp element type

- Microfibre filter elements - series N - W: 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

LMP 400 - 430: In-line Inlet/Outlet  
 LMP 401 - 431: 90° Inlet/Outlet

### Note

LMP 400 filters are provided for vertical mounting

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

Filter series	Weights [kg]					Volumes [dm <sup>3</sup> ]						
	Length	2	3	4	5	6	Length	2	3	4	5	6
<b>LMP 400-401 &amp; 430-431</b>		7.20	8.10	8.80	11.90	14.40		3.50	5.00	6.50	9.50	13.50



Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 400	2	205	244	370	411	515	720	524	556
	3	280	333	474	515	602	760	637	660
	4	347	400	535	564	637	769	660	688
	5	459	501	610	660	717	781	700	721
	6	504	575	676	689	728	783	708	727
LMP 401	2	200	236	347	382	468	628	475	501
	3	268	315	434	468	537	659	565	582
	4	328	373	484	507	565	665	582	603
	5	423	456	544	582	626	674	613	629
	6	459	516	594	604	634	676	619	633
LMP 430	5	459	501	610	660	717	781	700	721
	6	504	575	676	689	728	783	708	727
LMP 431	5	423	456	544	582	626	674	613	629
	6	459	516	594	604	634	676	619	633

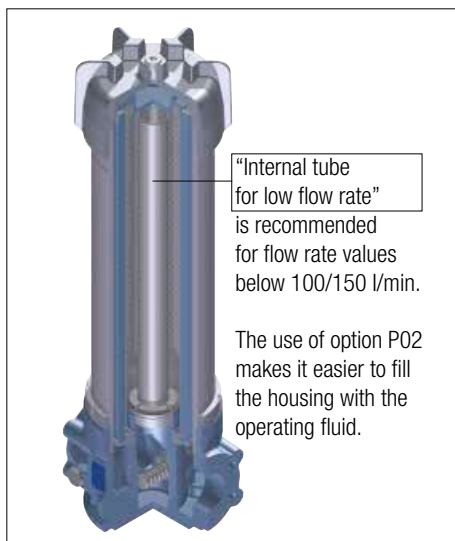
**Maximum flow rate for a complete low and medium pressure filter with a pressure drop  $\Delta p = 0.7$  bar.**

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>.

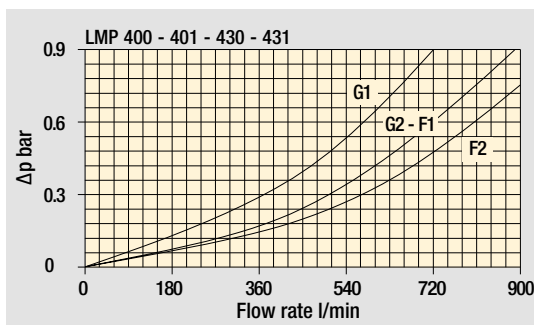
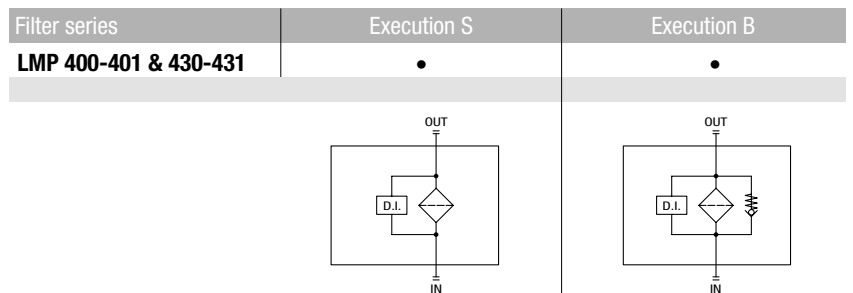
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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.

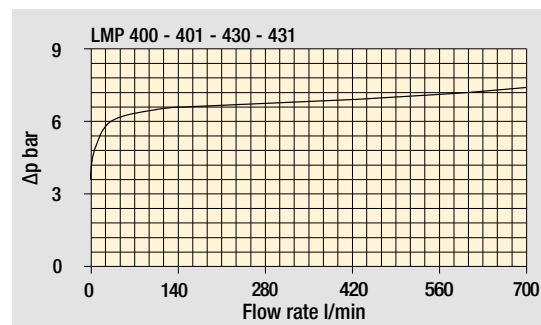
LMP 430-431: execution P02



Hydraulic symbols



Filter housings  $\Delta p$  pressure drop



Pressure drop

Bypass valve 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.

# LMP 400-401

## Designation & Ordering code

### COMPLETE FILTER

Series and size **LMP400 | LMP401** Configuration example: **LMP401** **3** **B** **A** **G1** **A10** **N** **P01**

Length **2** | **3** | **4** | **5** | **6** |

Bypass valve **S** Without bypass **B** With bypass 3.5 bar

Seals and treatments	Filtration rating		
	Axx	Mxx	Pxx
<b>A</b> NBR	•	•	•
<b>V</b> FPM	•	•	•
<b>W</b> NBR compatible with fluids HFA-HFB-HFC	•	•	-

Connections

<b>G1</b> G 1 1/2"	<b>F1</b> 2" SAE 3000 psi/M
<b>G2</b> G 2"	<b>F2</b> 2 1/2" SAE 3000 psi/M
<b>G3</b> 1 1/2" NPT	<b>F3</b> 2" SAE 3000 psi/UNC
<b>G4</b> 2" NPT	<b>F4</b> 2 1/2" SAE 3000 psi/UNC
<b>G5</b> SAE 24 - 1 7/8" - 12 UN	
<b>G6</b> SAE 32 - 2 1/2" - 12 UN	

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

Element Δp	Execution					
	2	3	4	5	6	
<b>N</b> 20 bar	•	•	•	•	•	
						• •

### FILTER ELEMENT

Element series and size **CU400** Configuration example: **CU400** **3** **A10** **A** **N** **P01**

Element length **2** | **3** | **4** | **5** | **6** |

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

Seals	Filtration rating		
	Axx	Mxx	Pxx
<b>A</b> NBR	•	•	•
<b>V</b> FPM	•	•	•
<b>W</b> NBR compatible with fluids HFA-HFB-HFC	•	•	-

Element Δp	Execution	
	20 bar	
<b>N</b> 20 bar		<b>P01</b> MP Filtri standard
		<b>Pxx</b> Customized

### CLOGGING INDICATORS

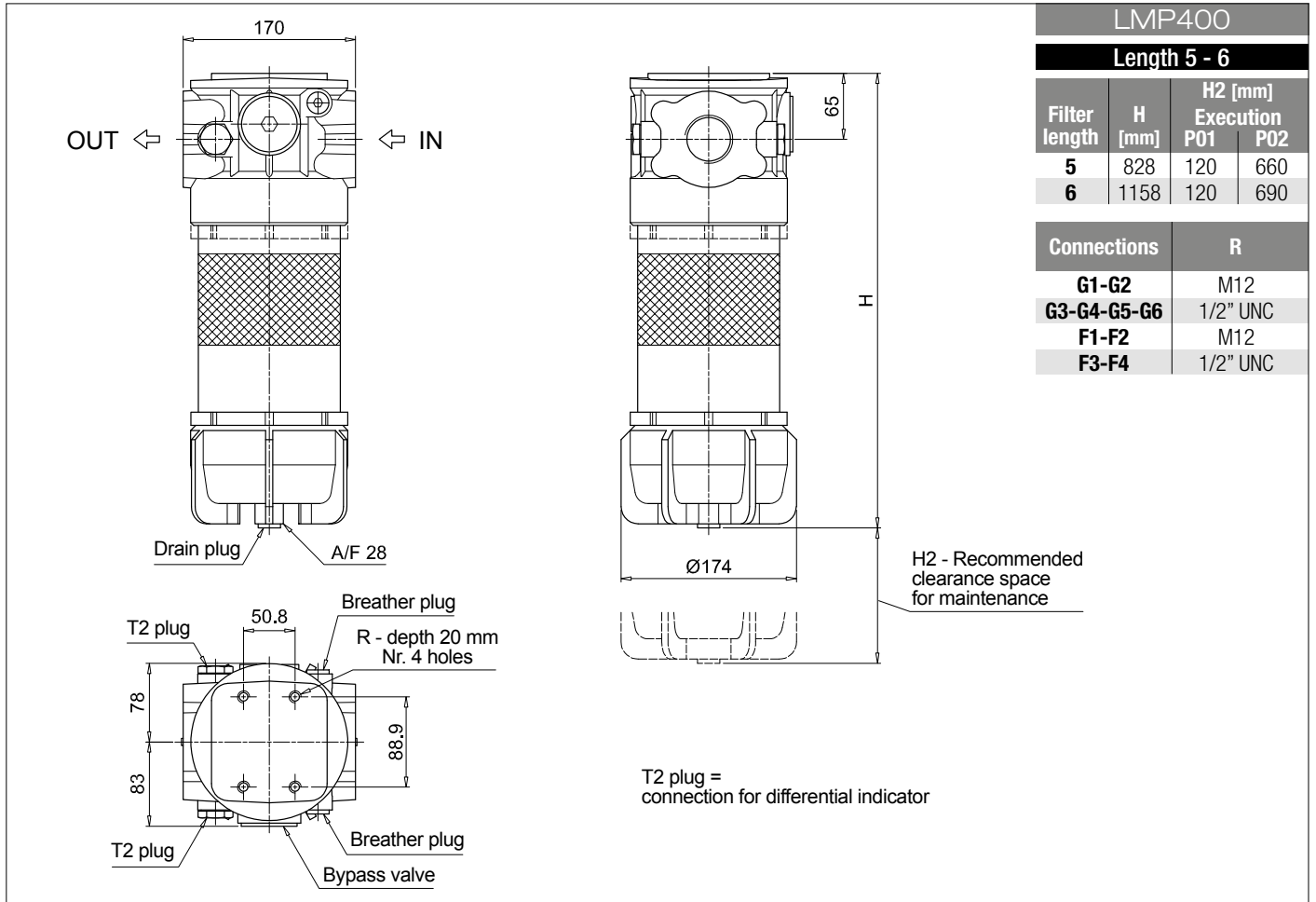
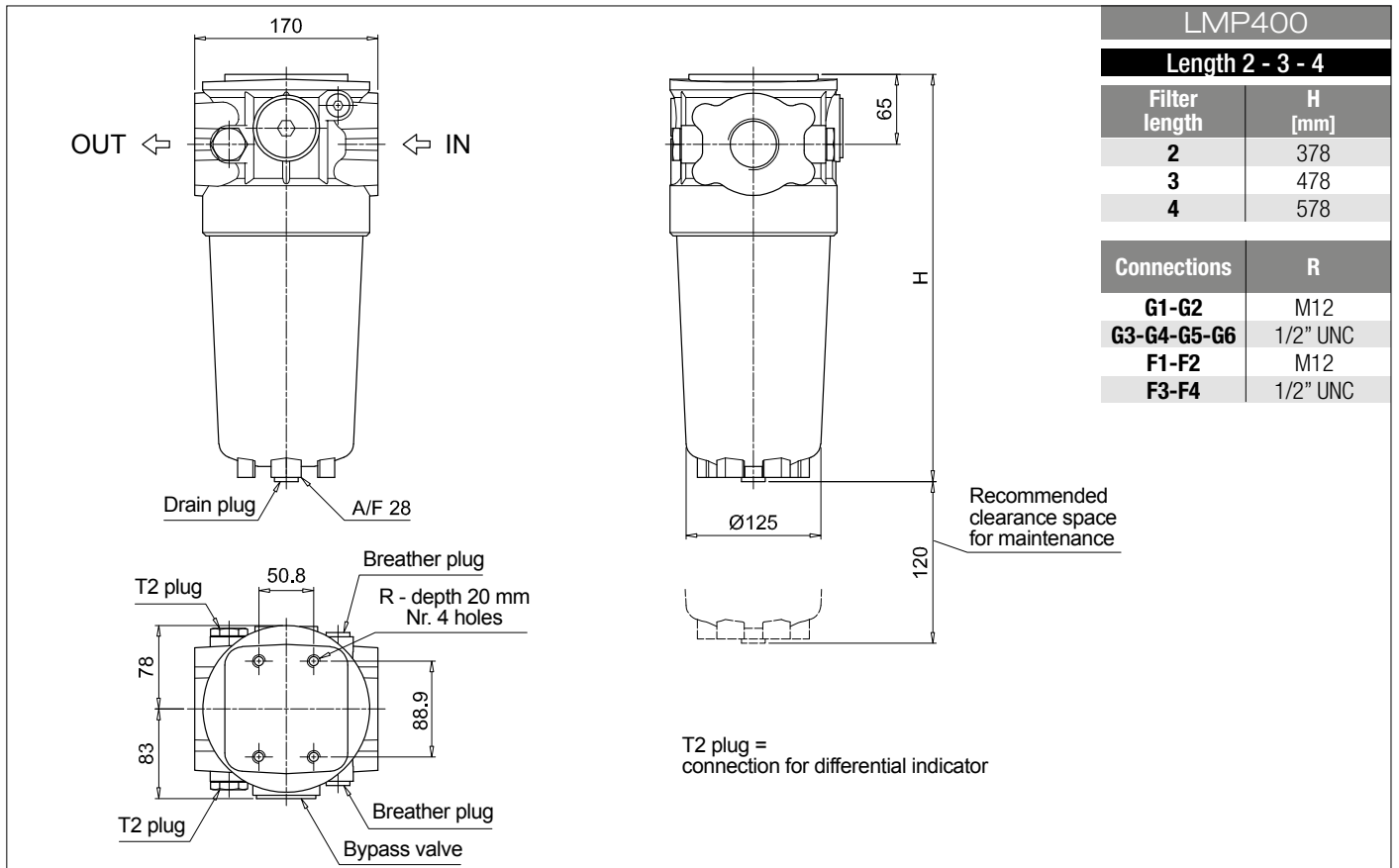
See page 478

<b>DEA</b> Electrical differential indicator
<b>DEM</b> Electrical differential indicator
<b>DLA</b> Electrical / visual differential indicator
<b>DLE</b> Electrical / visual differential indicator

<b>DTA</b> Electronic differential indicator
<b>DVA</b> Visual differential indicator
<b>DVM</b> Visual differential indicator
<b>T2</b> Plug

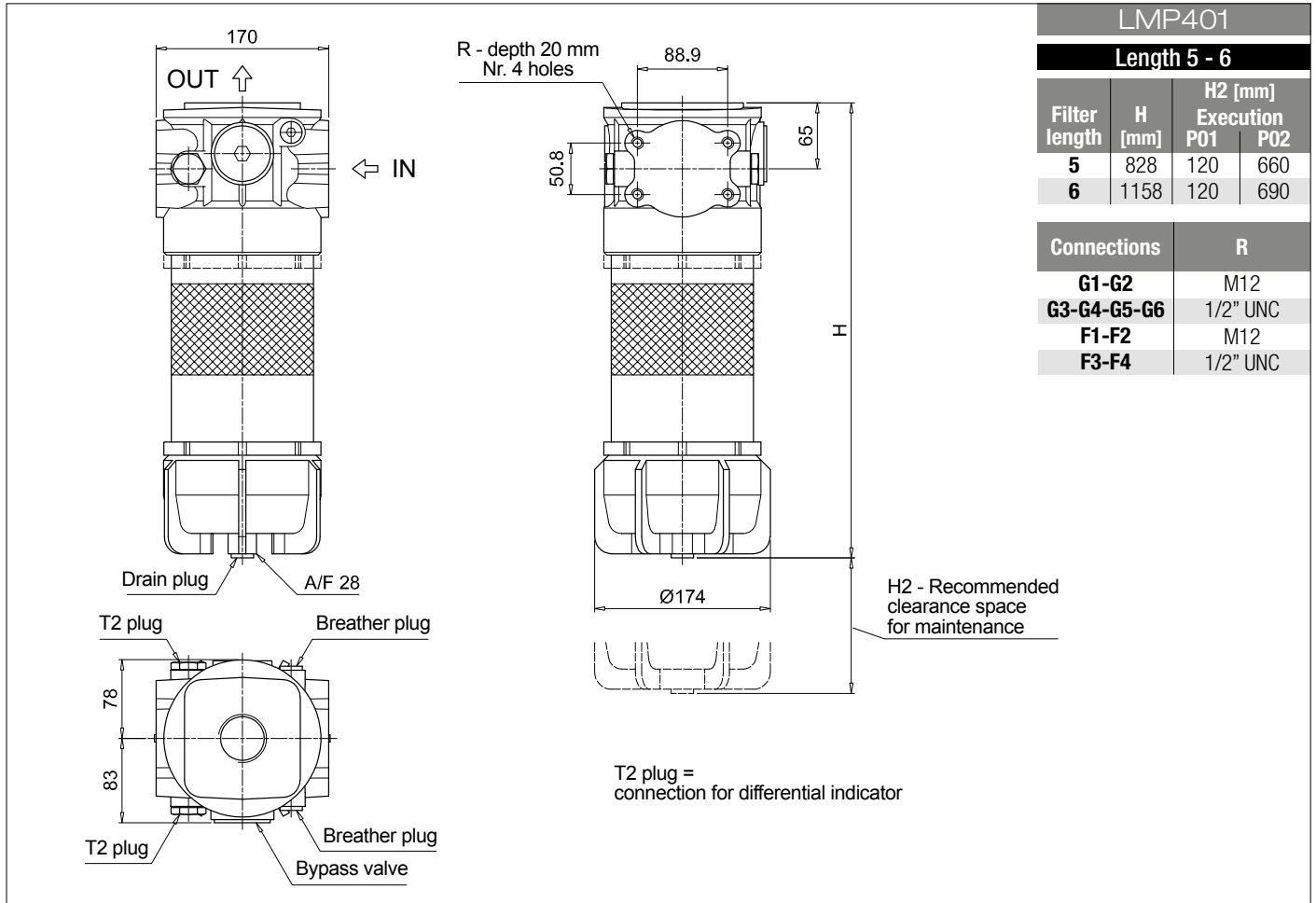
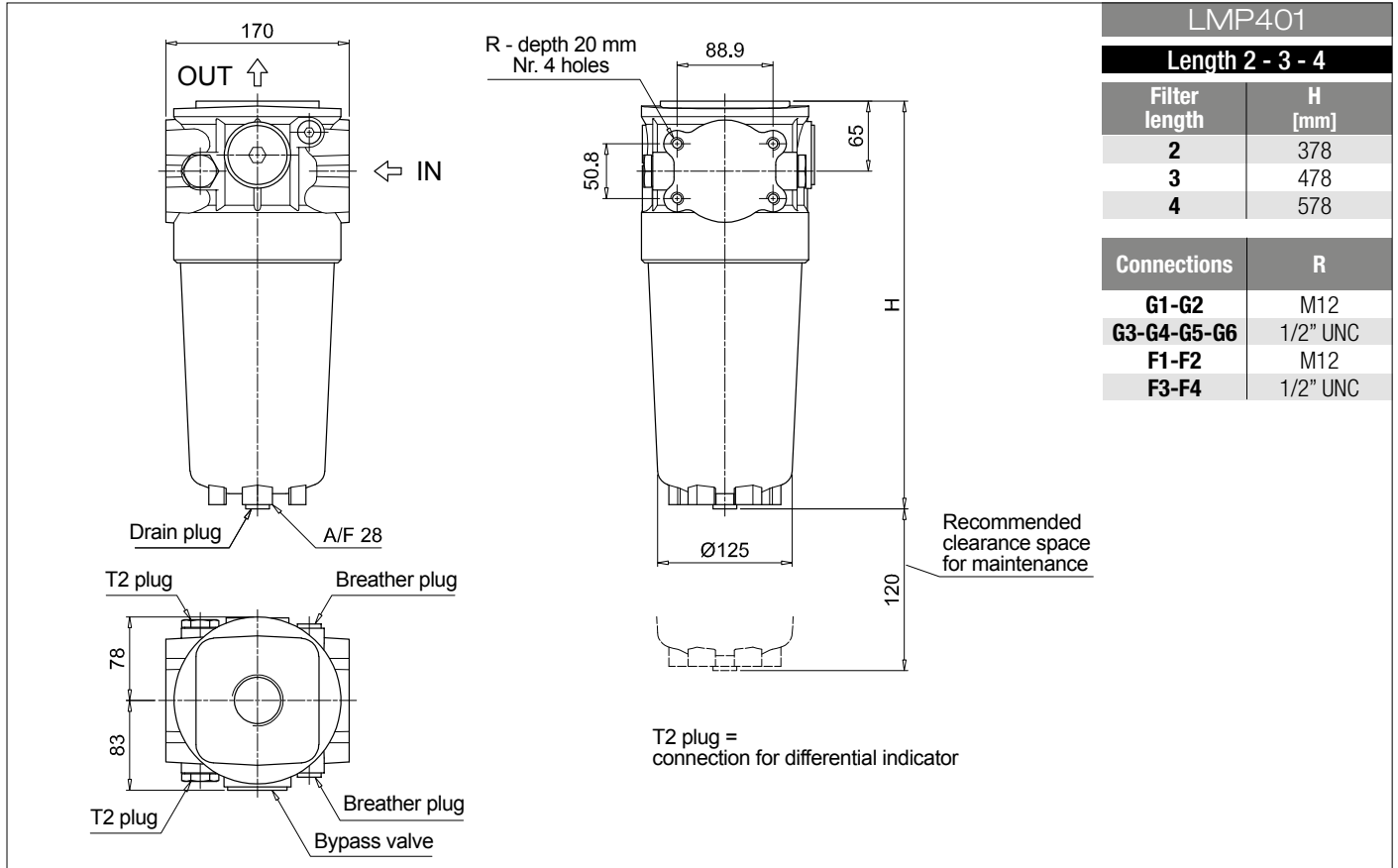
# LMP 400-401

## Dimensions



# LMP 400-401

## Dimensions





# LMP 430-431

## Designation & Ordering code

### COMPLETE FILTER

Series and size **LMP430 | LMP431** Configuration example: **LMP431** **5** **B** **A** **G1** **A10** **N** **P01**

Length **5** | **6**

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments	Filtration rating		
	Axx	Mxx	Pxx
<b>A</b> NBR	•	•	•
<b>V</b> FPM	•	•	•
<b>W</b> NBR compatible with fluids HFA-HFB-HFC	•	•	-

Connections

<b>G1</b> G 1 1/2"	<b>F1</b> 2" SAE 3000 psi/M
<b>G2</b> G 2"	<b>F2</b> 2 1/2" SAE 3000 psi/M
<b>G3</b> 1 1/2" NPT	<b>F3</b> 2" SAE 3000 psi/UNC
<b>G4</b> 2" NPT	<b>F4</b> 2 1/2" SAE 3000 psi/UNC
<b>G5</b> SAE 24 - 1 7/8" - 12 UN	
<b>G6</b> SAE 32 - 2 1/2" - 12 UN	

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

Element Δp	Execution
<b>N</b> 20 bar	<b>P01</b> MP Filtri standard
	<b>P02</b> With internal tube for low flow rate
	<b>Pxx</b> Customized

### FILTER ELEMENT

Element series and size **CU400** Configuration example: **CU400** **5** **A10** **A** **N** **P01**

Element length **5** | **6**

Seals	Filtration rating		
	Axx	Mxx	Pxx
<b>A</b> NBR	•	•	•
<b>V</b> FPM	•	•	•
<b>W</b> NBR compatible with fluids HFA-HFB-HFC	•	•	-

Filtration rating (filter media)	
<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm
<b>WA025</b> Water absorber inorganic microfiber 25 µm	

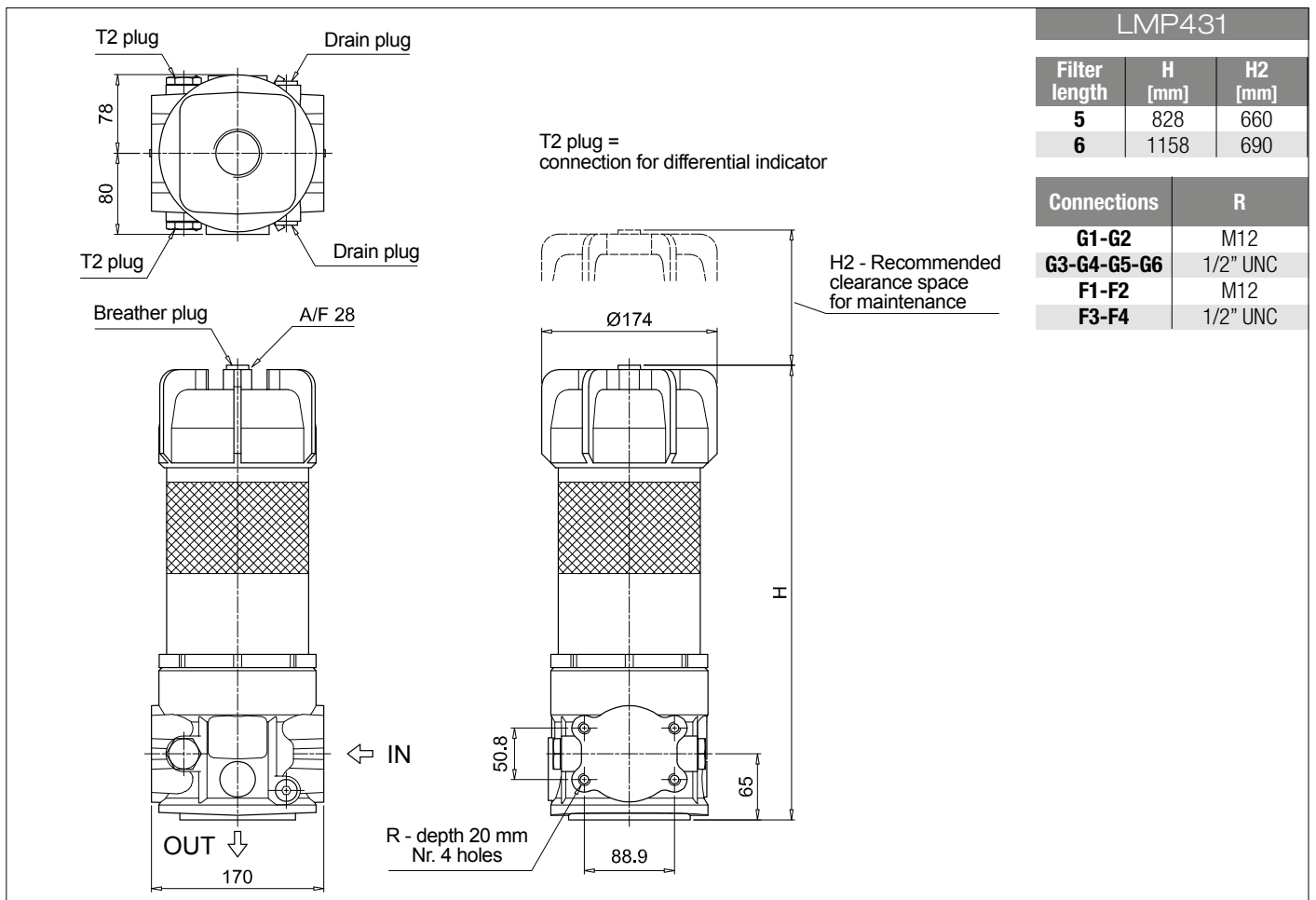
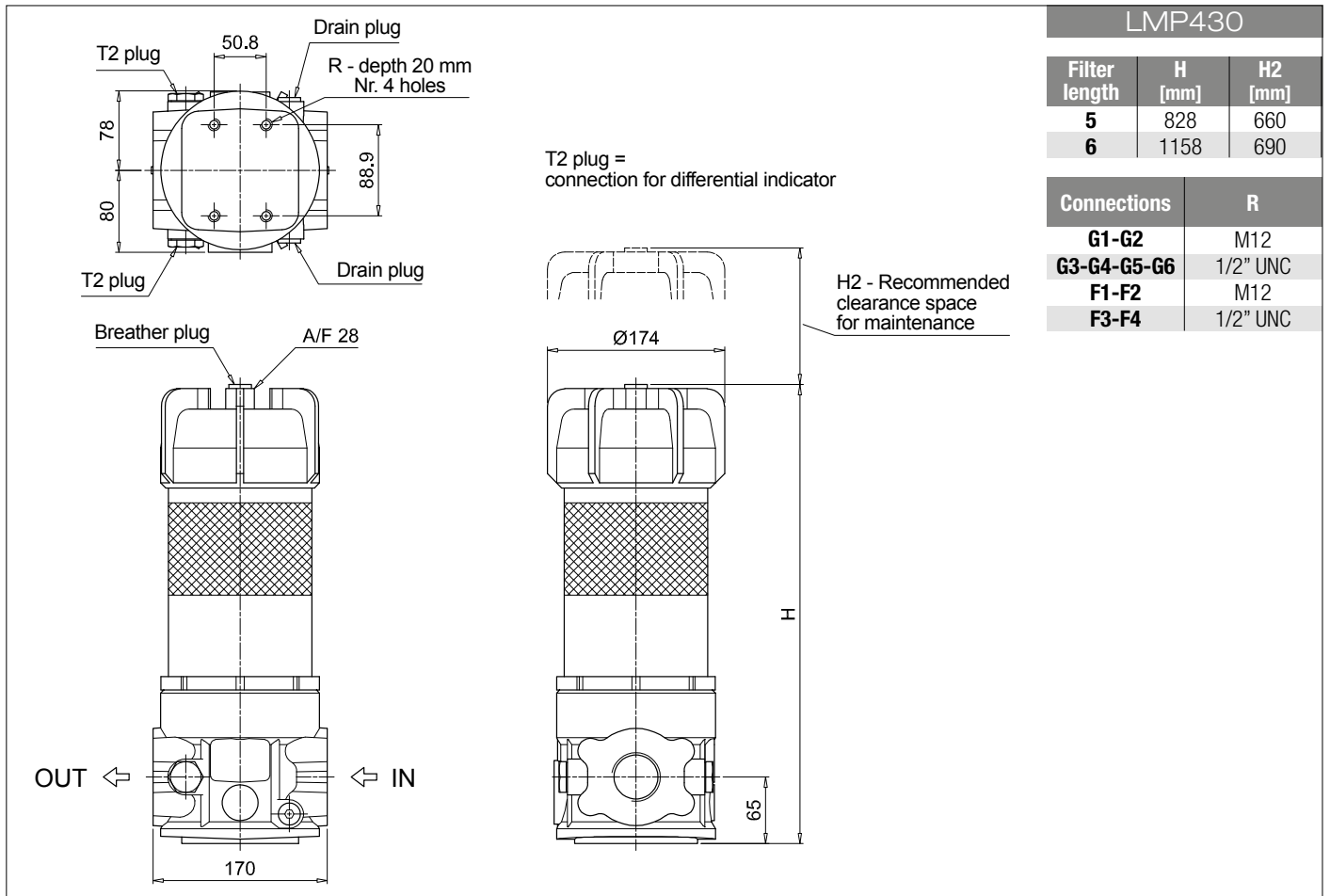
Element Δp	Execution
<b>N</b> 20 bar	<b>P01</b> MP Filtri standard
	<b>Pxx</b> Customized

### CLOGGING INDICATORS

See page 478

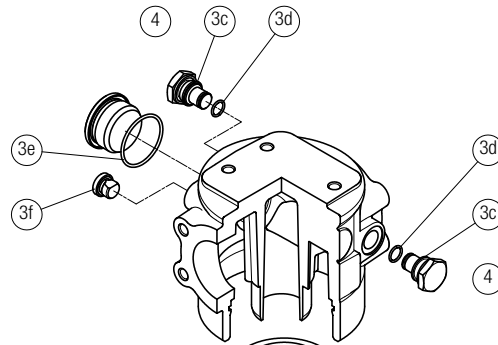
<b>DEA</b> Electrical differential indicator
<b>DEM</b> Electrical differential indicator
<b>DLA</b> Electrical / visual differential indicator
<b>DLE</b> Electrical / visual differential indicator

<b>DTA</b> Electronic differential indicator
<b>DVA</b> Visual differential indicator
<b>DVM</b> Visual differential indicator
<b>T2</b> Plug

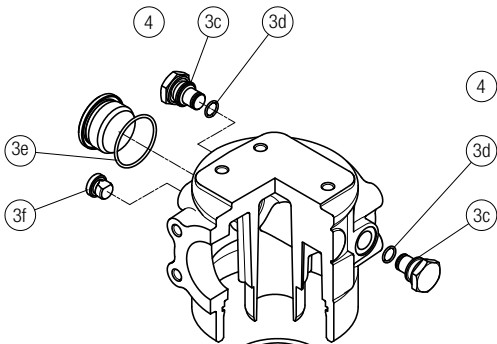


Order number for spare parts

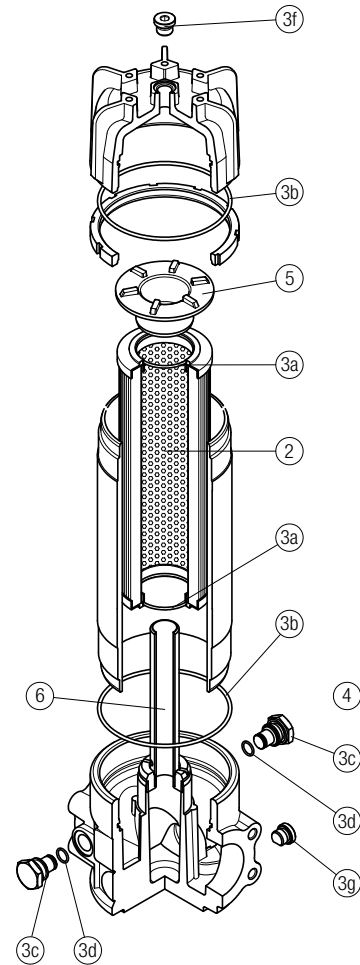
**LMP 400 - 401**  
length 2 - 3 - 4



**LMP 400 - 401**  
length 5 - 6



**LMP 430 - 431**  
length 5 - 6



Q.ty: 1 pc.

Q.ty: 1 pc.

Q.ty: 2 pcs.

Q.ty: 2 pcs.

Q.ty: 1 pc.

Item:	2	3 (3a ÷ 3g)		4		5		6	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM	Housing spigot no bypass	with bypass	Internal tube for low flow rate, execution P02	
LMP 400-401 length 2-3-4	See order table	02050391	02050392						
LMP 400-401 length 5-6		02050393	02050394	T2H	T2V	01044108			
LMP 430-431 length 5-6		02050393	02050394			01044108	02001414	Length 5: 02025041	Length 6: 02025042







# LMP 950-951 series

Maximum working pressure up to 3 MPa (30 bar) - Flow rate up to 2400 l/min



# LMP 950-951 GENERAL INFORMATION

## Description

## Technical data

### Low & Medium Pressure filters

**Maximum working pressure up to 3 MPa (30 bar)**  
**Flow rate up to 2400 l/min**

LMP950 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.

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

#### Available features:

- Flanged connections up to 4", for a maximum flow rate of 2400 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-line filtration of reservoirs
- Filtration systems
- Lubrication systems

### Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Bypass valve: Anodized Aluminium

### Pressure

- Test pressure: 4,5 MPa (45 bar)
- Burst pressure: 12 MPa (120 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 3 MPa (30 bar)

### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

### Δp element type

- Microfibre 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

LMP 950: In-line Inlet/Outlet  
 LMP 951: 90° Inlet/Outlet

### Note

LMP 950 - 951 filters are provided for vertical mounting

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

Filter series	Weights [kg]			Volumes [dm <sup>3</sup> ]		
	Length	2	3	Length	2	3
<b>LMP 950-951</b>		25.1	33.5		15	28

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMP 950	2	613	756	953	1219	1515	2170
	3	1148	1219	1502	1713	1808	2293
LMP 951	2	635	789	1007	1308	1649	2420
	3	1226	1308	1634	1881	1993	2566

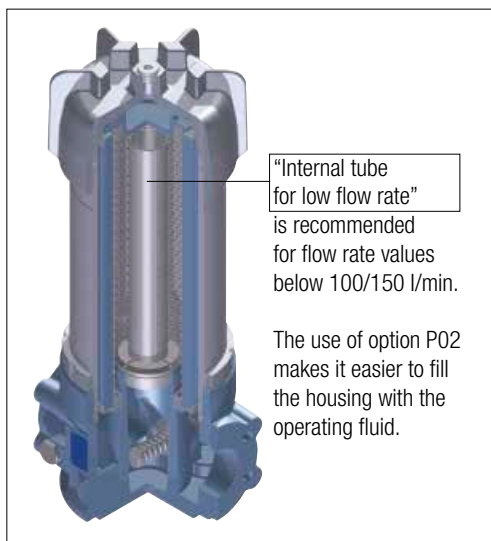
### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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>.

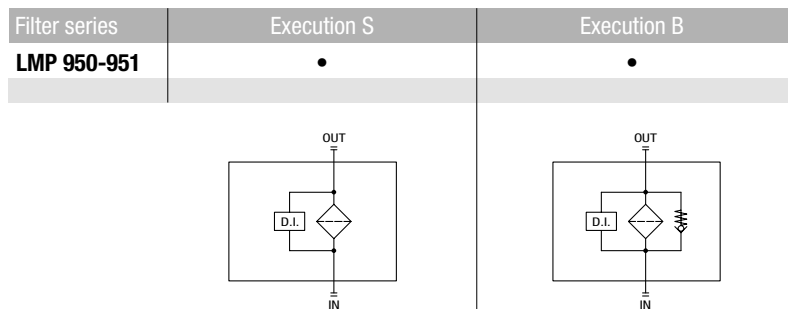
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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.

### Execution P02

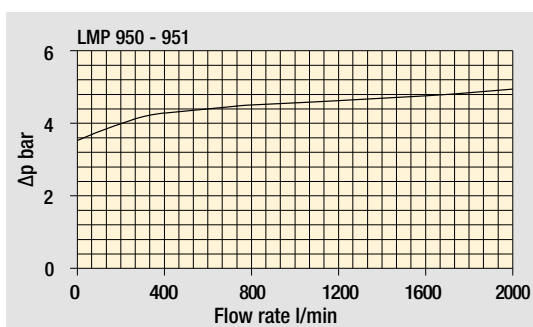
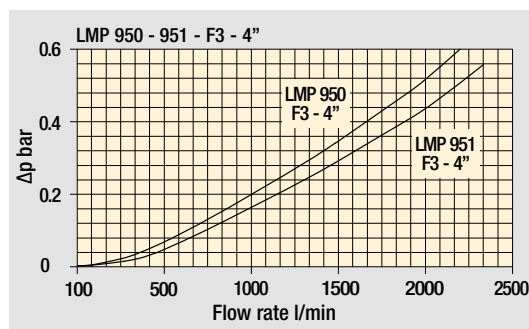
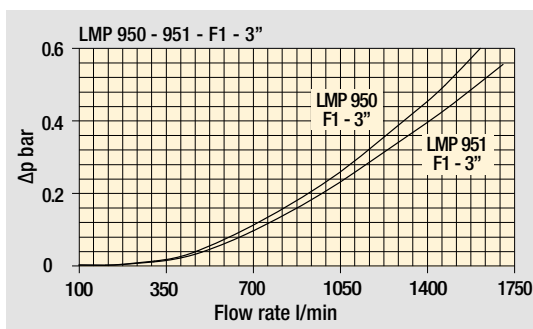


### Hydraulic symbols



### Pressure drop

Filter housings  $\Delta p$  pressure drop



Bypass valve 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.

# LMP 950-951

## Designation & Ordering code

### COMPLETE FILTER

Configuration example: **LMP951** **2** **B** **A** **F2** **A10** **N** **P01**

**Series and size**  
**LMP950** | **LMP951**

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

**Bypass valve**  
**S** Without bypass | **B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

**Connections**  
**F1** 3" SAE 3000 psi/M  
**F2** 3" SAE 3000 psi/UNC  
**F3** 4" SAE 3000 psi/M  
**F4** 4" SAE 3000 psi/UNC

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm  
**A25** Inorganic microfiber 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**P02** With internal tube for low flow rate  
**Pxx** Customized

### FILTER ELEMENT

Configuration example: **CU950** **2** **A10** **A** **N** **P01**

**Element series and size**  
**CU950**

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

**Filtration rating (filter media)**  
**A03** Inorganic microfiber 3 µm | **M25** Wire mesh 25 µm  
**A06** Inorganic microfiber 6 µm | **M60** Wire mesh 60 µm  
**A10** Inorganic microfiber 10 µm | **M90** Wire mesh 90 µm  
**A16** Inorganic microfiber 16 µm  
**A25** Inorganic microfiber 25 µm  
**WA025** Water absorber inorganic microfiber 25 µm

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

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

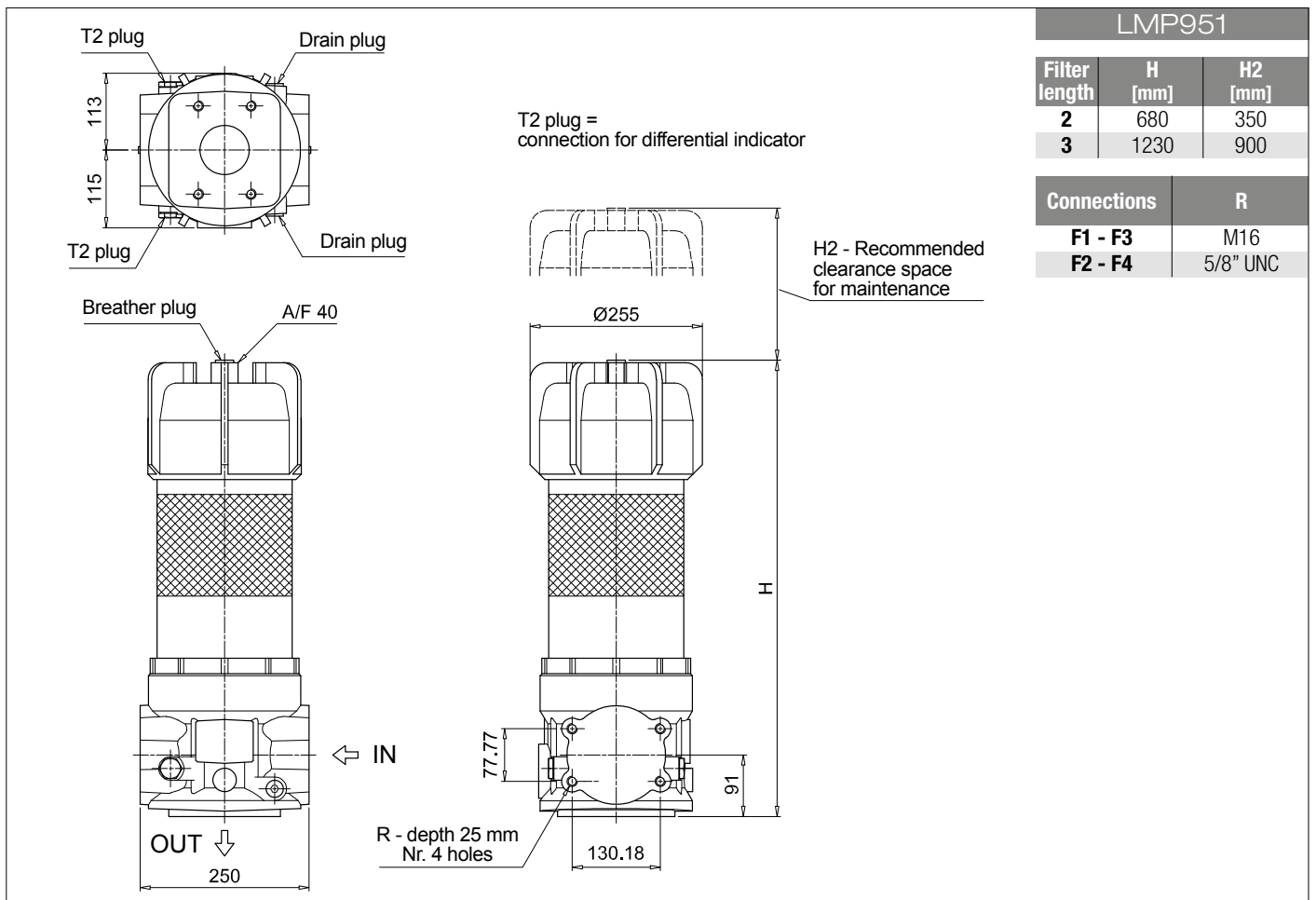
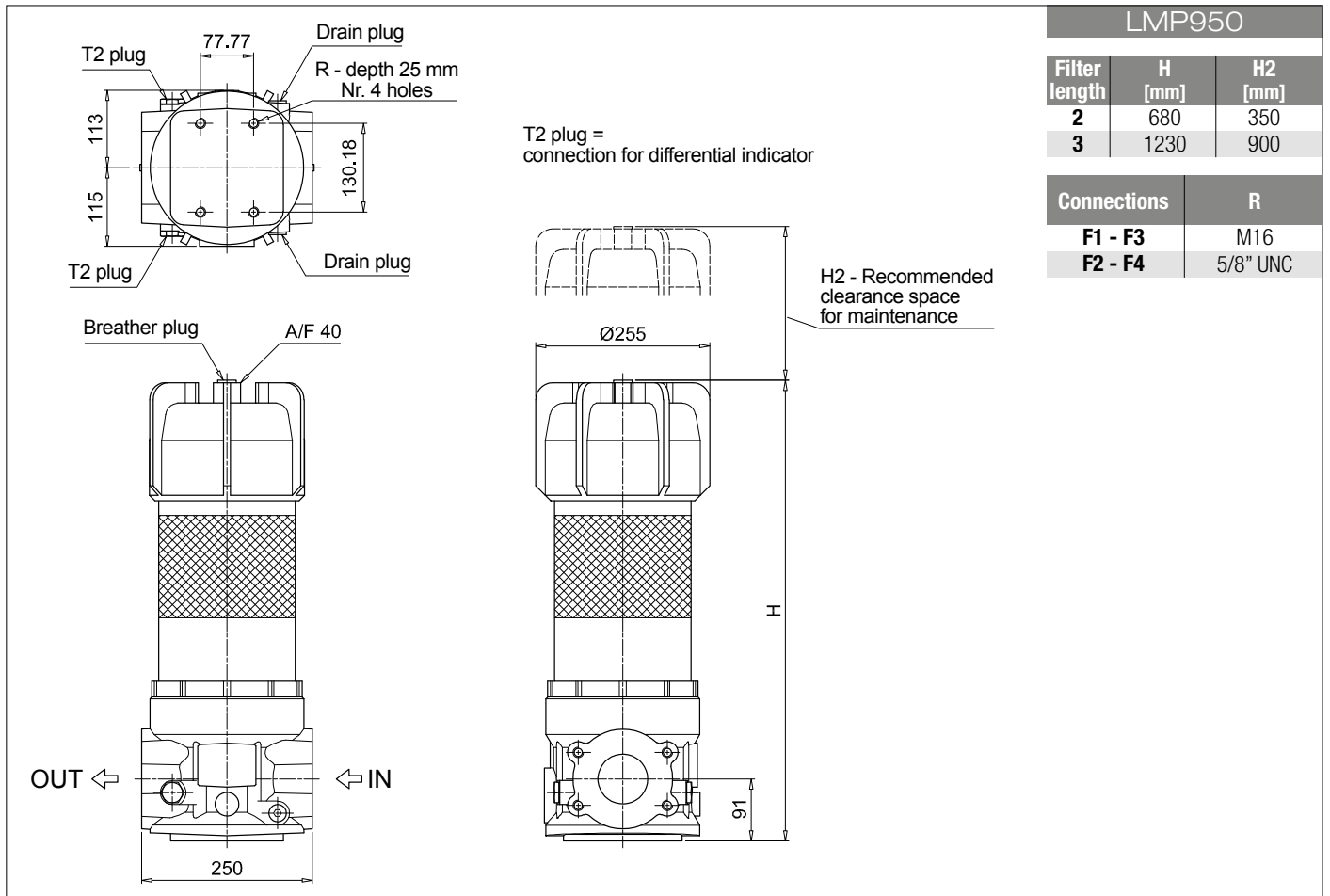
See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

### ACCESSORIES

See page 486

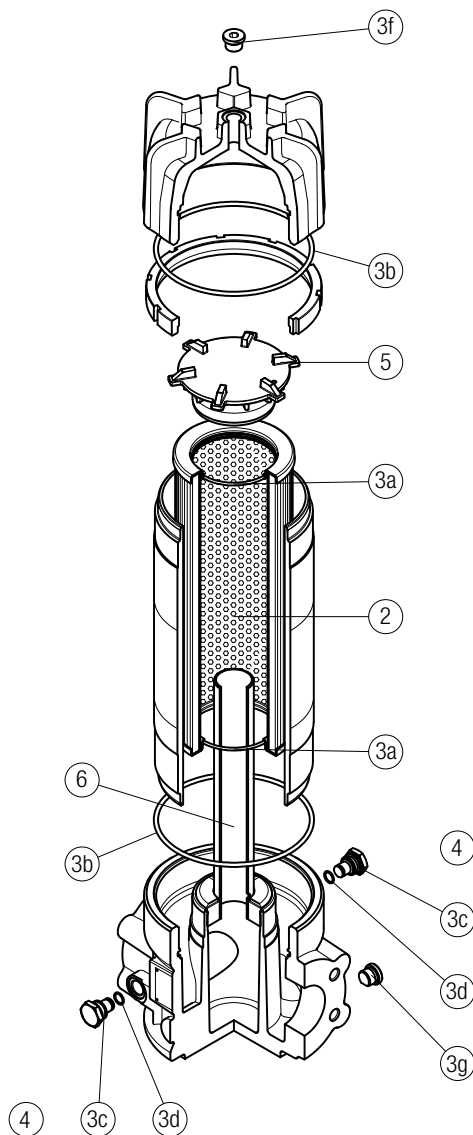
<b>CFA</b> Retaining clamp
----------------------------



# LMP 950-951 SPARE PARTS

Order number for spare parts

LMP 950 - 951



Item:	Q.ty: 2 pcs.		Q.ty: 1 pc.		Q.ty: 2 pcs.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug		Housing spigot		Internal tube for low flow rate, exec. P02		
LMP 950-951 length 2-3	See order table	NBR	FPM	NBR	FPM	no bypass	with bypass	length 2	length 3	
		02050367	02050368	T2H	T2V	01044106	02001379	02025032	02025033	







# LMP 952-953-954 series

Maximum working pressure up to 2.5 MPa (25 bar) - Flow rate up to 4500 l/min



# LMP 952-953-954 GENERAL INFORMATION

## Description

## Technical data

### Low & Medium Pressure filters

**Maximum working pressure up to 2.5 MPa (25 bar)**  
**Flow rate up to 4500 l/min**

LMP952, LMP953 and LMP954 are ranges of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.

Multiple LMP950 filters are connected to a manifold to reduce the pressure drop caused by the filter media and to increase the life time of the filter element.

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

#### Available features:

- 4" flanged connections, for a maximum flow rate of 4500 l/min
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-line filtration of reservoirs
- Filtration systems

### Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Welded - Phosphatized Steel
- Bypass valve: Anodized Aluminium

### Pressure

Test pressure: 3.5 MPa (35 bar)

### Bypass valve

- Opening pressure 350 kPa (3.5 bar)  $\pm 10\%$
- Other opening pressures on request.

### $\Delta p$ element type

- Microfibre filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

### Number of filter elements

- LMP 952: 2 filter elements CU950-3
- LMP 953: 3 filter elements CU950-3
- LMP 954: 4 filter elements CU950-3

### Seals

- Standard NBR series A
- Optional FPM series V

### Temperature

From -25 °C to +110 °C

### Connections

LMP 952-953-954:  
In-line Inlet/Outlet

### Note

LMP 952 - 953 - 954 filters  
are provided for vertical mounting

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

Filter series	Weights [kg]		Volumes [dm <sup>3</sup> ]	
	Length	3	Length	3
<b>LMP 952</b>		96		66
<b>LMP 953</b>		138		99
<b>LMP 954</b>		192		132

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
<b>LMP 952</b>	<b>3</b>	2172	2294	2766	3106	3256	3998
<b>LMP 953</b>	<b>3</b>	2842	2964	3403	3696	3820	4395
<b>LMP 954</b>	<b>3</b>	3259	3372	3770	4026	4133	4618

### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ 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	Execution S - Execution B	Execution S - Execution B	Execution S - Execution B
<b>LMP 952</b>	●	-	-
<b>LMP 953</b>	-	●	-
<b>LMP 954</b>	-	-	●

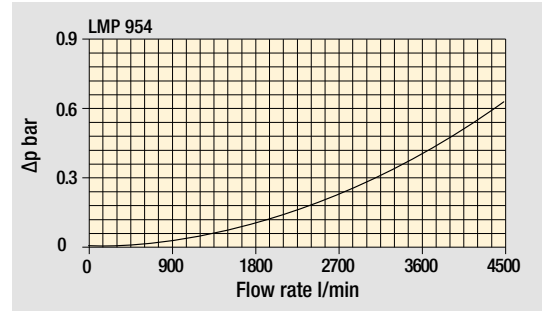
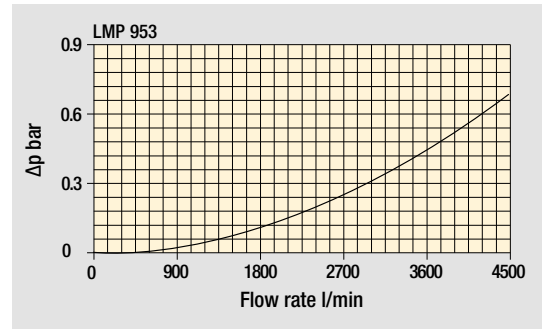
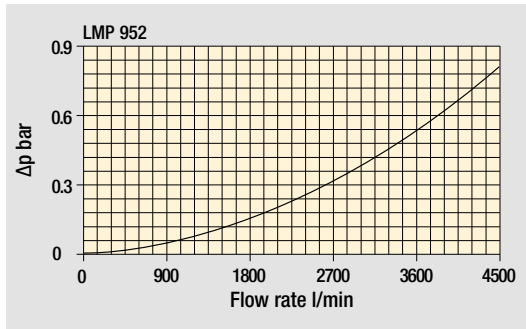
  

S		S		S	
B		B		B	

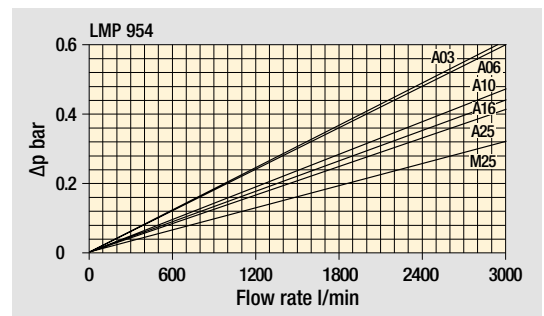
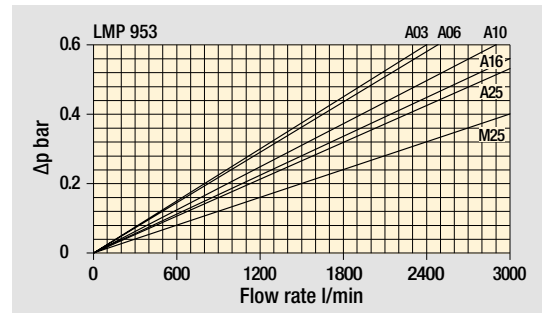
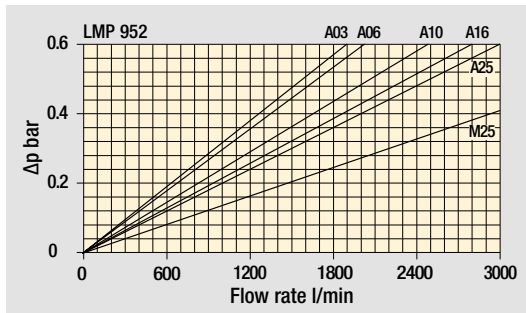
# LMP 952-953-954 GENERAL INFORMATION

## Pressure drop

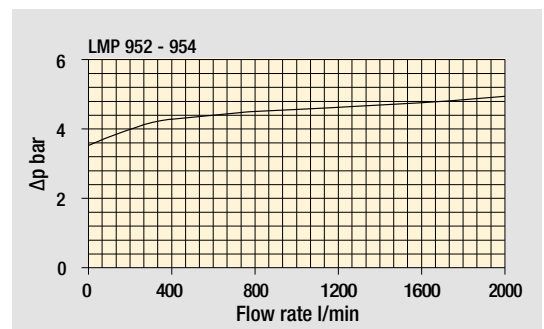
### Filter housings $\Delta p$ pressure drop



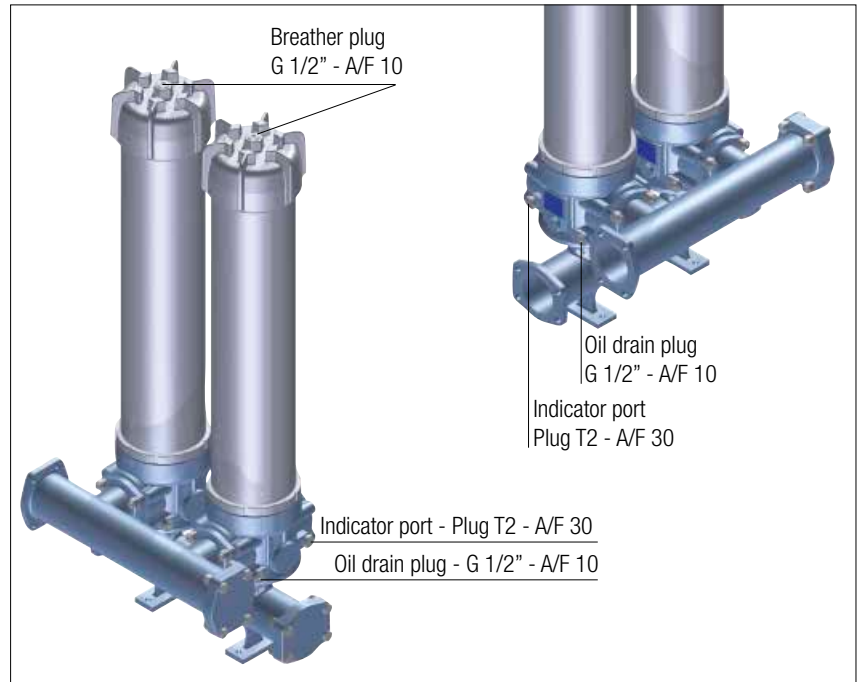
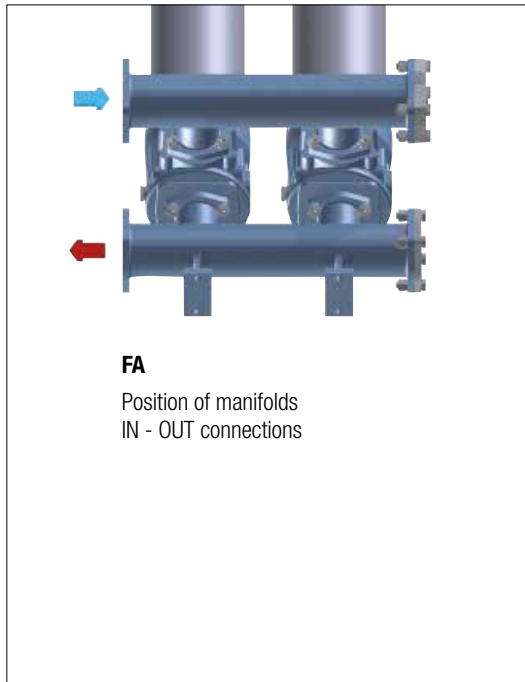
### Pressure drop of filter complete with cartridge, oil viscosity 30 mm<sup>2</sup>/s (cSt)



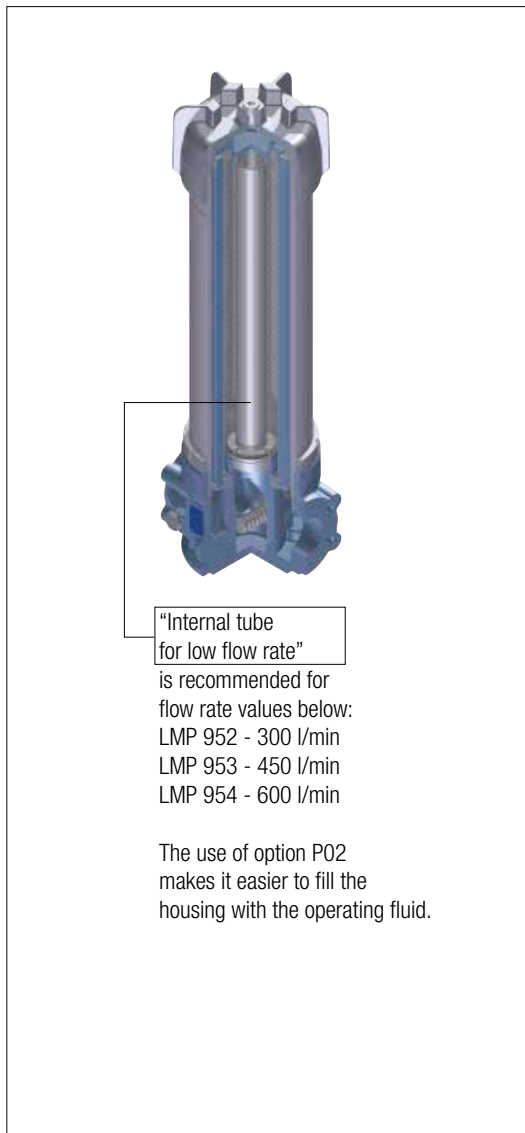
### Bypass valve pressure drop



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.

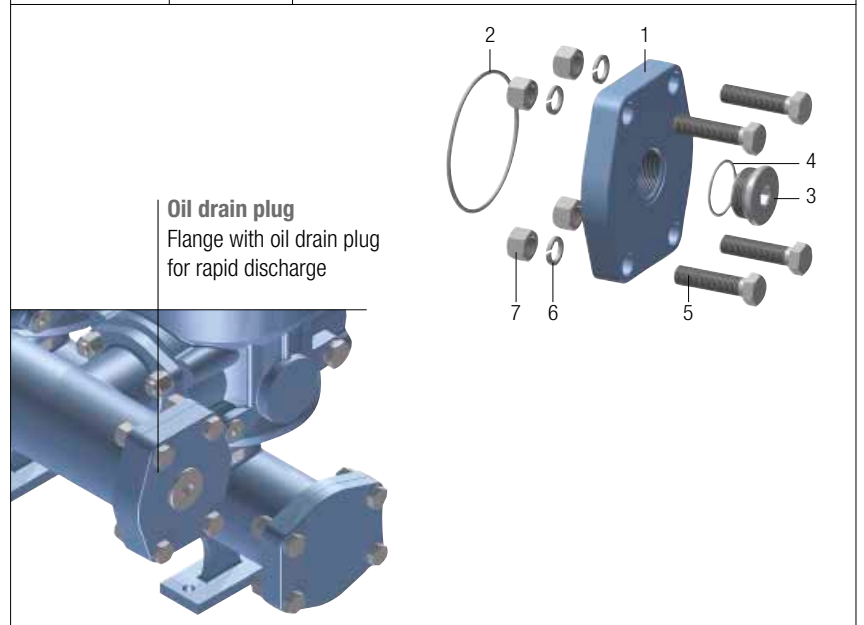


Execution P02



CMV4 & CUV4 Flange options

Code	Thread	Materials
CMV4	G 1 1/4"	1 - 4" SAE flange 2 - O-R 4437 (FPM) for flange 3 - Plug G 1-1/4" 4 - O-R 3168 for plug (FPM) 5 - No. 4 Hex bolt screws UNI-EN 24017 M16 x 65-10.9 6 - No. 4 Spring washers UNI 1751-B 16 7 - No. 4 Nuts UNI 5587 - M16
CUV4	SAE 20	1 - 4" SAE flange 2 - O-R 4437 (FPM) for flange 3 - Plug SAE 20 1 5/8" - 12 UN 4 - 1147 O-R for plug (FPM) 5 - No. 4 Hex bolt screws 5/8" UNC x 2 1/2" 6 - No. 4 Spring washers UNI 1751-B 16 7 - No. 4 Nuts 5/8" UNC



# LMP 952-953-954

Designation & Ordering code

## COMPLETE FILTER

Series and size **LMP952 | LMP953 | LMP954** Configuration example: **LMP952** **3** **B** **A** **FA** **A10** **N** **P01**

Length **3**

Bypass valve **S** Without bypass **B** With bypass 3.5 bar

Seals and treatments **A** NBR **V** FPM

Connections **FA** 4" SAE 3000 psi

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

Element Δp **N** 20 bar

Execution **P01** MP Filtri standard  
**P02** With internal tube for low flow rate  
**Pxx** Customized

## FILTER ELEMENT

Element series and size **CU950** Configuration example: **CU950** **3** **A10** **A** **N** **P01**

Element length **3**

Filter series and size

<b>LMP952</b> Nr. 2 filter elements
<b>LMP953</b> Nr. 3 filter elements
<b>LMP954</b> Nr. 4 filter elements

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

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

Element Δp **N** 20 bar

Execution **P01** MP Filtri standard  
**Pxx** Customized

## CLOGGING INDICATORS

See page 478

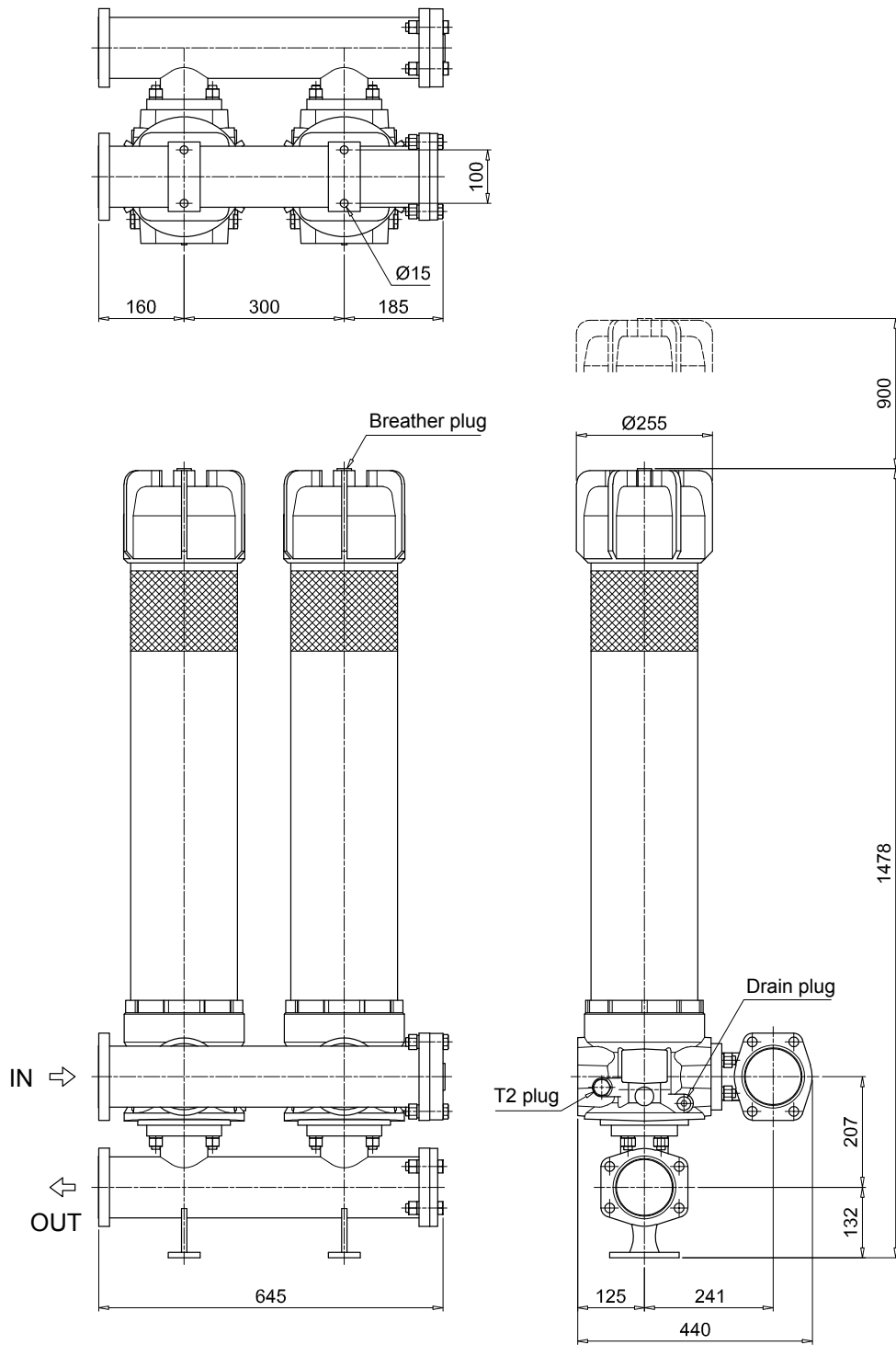
<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug



# LMP 952-953-954

Dimensions

LMP952

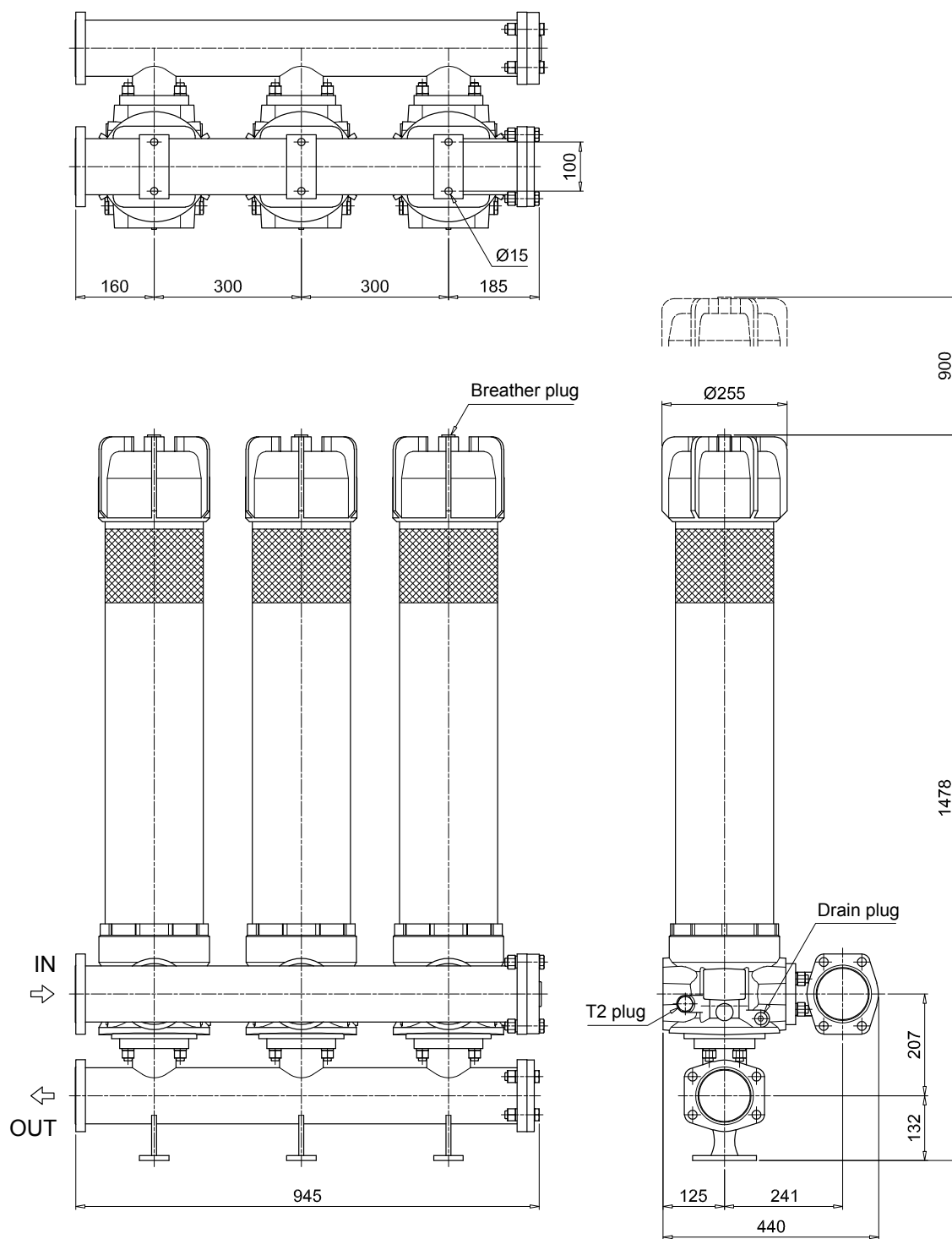


T2 plug =  
connection for differential indicator

# LMP 952-953-954

## Dimensions

LMP953

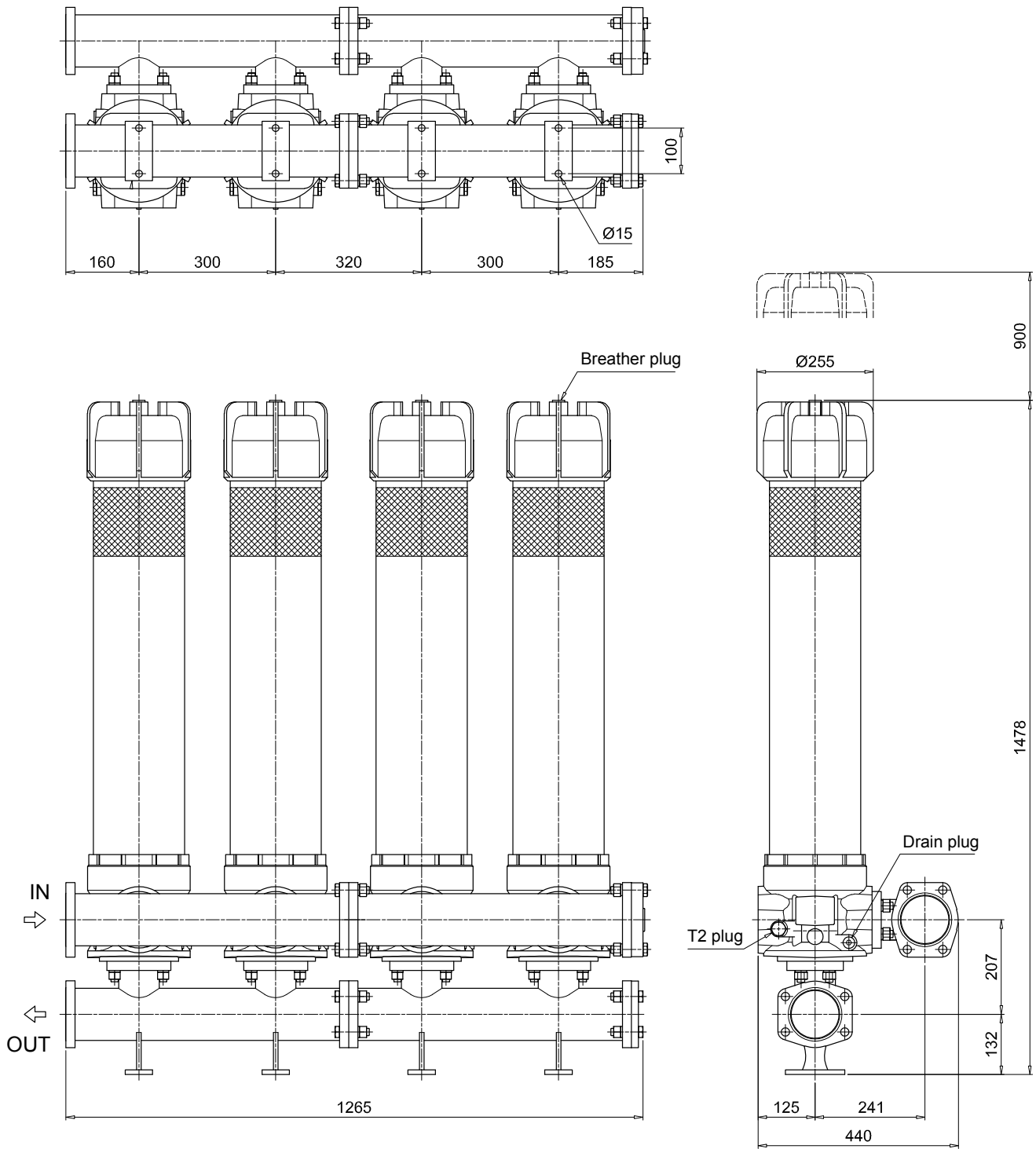


T2 plug =  
connection for differential indicator

# LMP 952-953-954

Dimensions

LMP954

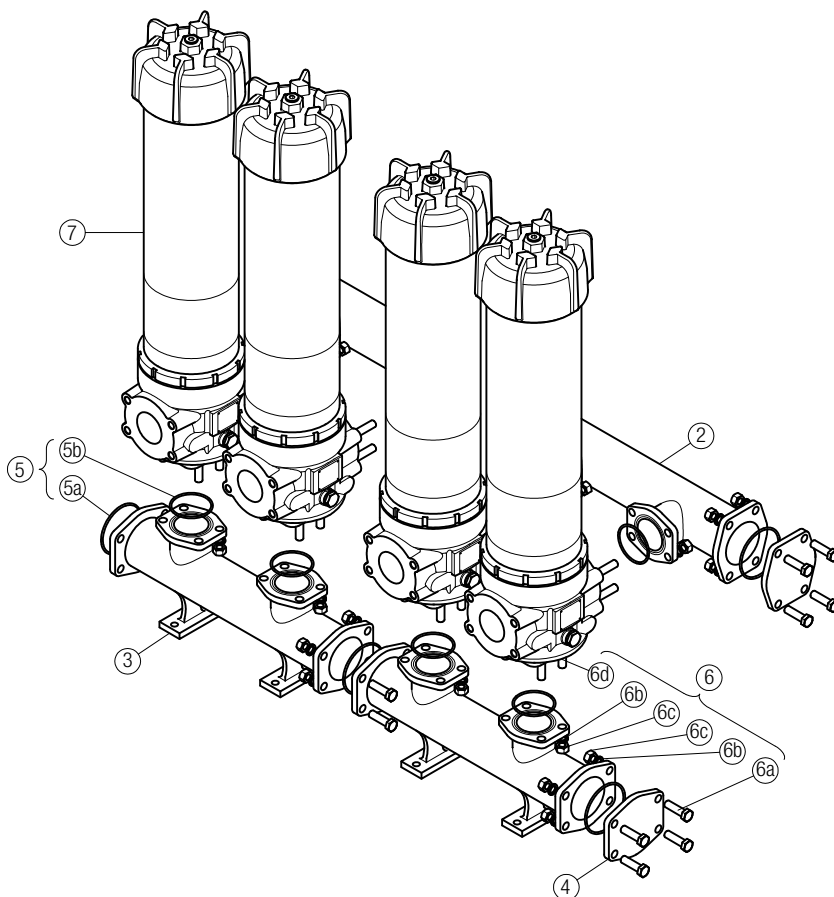


T2 plug =  
connection for differential indicator

# LMP 952-953-954 SPARE PARTS

Order number for spare parts

LMP 952 - 953 - 954



Item 7:  
for complete filter code and  
spare parts, see  
LMP 950 - 951 series chapter

Quantity:  
- filter spare parts:  
LMP 952 - 2 pcs.  
LMP 953 - 3 pcs.  
LMP 954 - 4 pcs.

- filter seal kit:  
LMP 952 - 2 pcs.  
LMP 953 - 3 pcs.  
LMP 954 - 4 pcs.

Item:	2		3		4		5 (5a-5b)		6 (6a ÷ 6d)		7	
Filter series	Q.ty	Manifold IN	OUT	4" SAE 3000 psi plugged flange Q.ty	Q.ty	Manifolds seal kit		Q.ty	Threaded fasteners kit		Q.ty	Filter
LMP 952	1 pc.	01039270	01039271	2 pcs.	01042012	1 pc.	02050404	02050405	1 pc.	02049051	2 pcs.	LMP9513xxF1xxxNP0x
LMP 953	1 pc.	01039337	01039338	2 pcs.		1 pc.	02050404	02050405	1 pc.	02049052	3 pcs.	
LMP 954	2 pcs.	01039270	01039271	2 pcs.		1 pc.	02050406	02050407	1 pc.	02049053	4 pcs.	





# LMD 211 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 200 l/min



# LMD 211 GENERAL INFORMATION

## Description

## Technical data

### Low & Medium Pressure filters

#### Duplex

**Maximum working pressure up to 6 MPa (60 bar)**

**Flow rate up to 200 l/min**

LMD211 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

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 200 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve integrated in the changeover lever, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

#### Filter housing materials

- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

#### Pressure

- Test pressure: 9 MPa (90 bar)
- Burst pressure: 21 MPa (210 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

#### Δp element type

- Microfibre 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

Inlet/Outlet In-Line

#### Note

LMD 211 filters are provided for vertical mounting

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

Filter series	Weights [kg]			Volumes [dm <sup>3</sup> ]				
	Length	1	2	3	Length	1	2	3
<b>LMD 211</b>		9.5	11.2	12.8		4.1	4.6	5.3



Filter series	Length	Filter element design - N Series									
		A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LMD 211	1	90	95	140	147	156	191	192	192	177	181
	2	113	121	158	162	173	192	192	193	181	183
	3	131	146	166	169	177	193	194	194	184	187

### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ 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>.

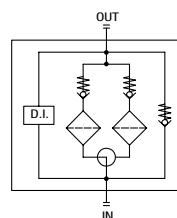
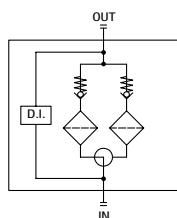
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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.

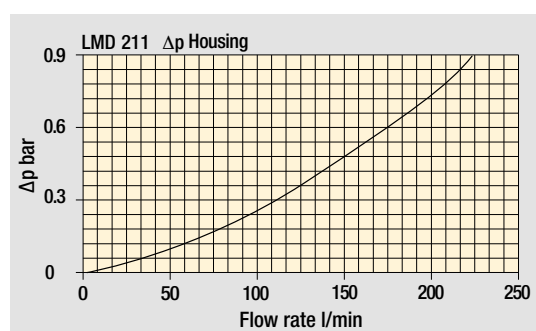
## Hydraulic symbols

Filter series	Style S	Style B
LMD 211	•	•

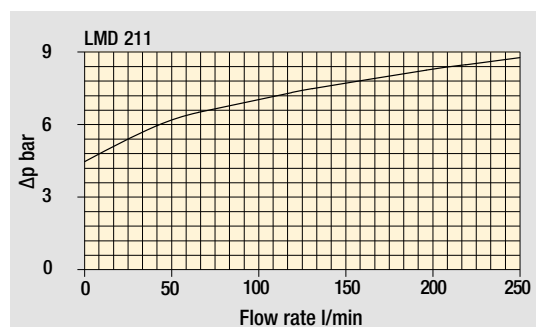


## Pressure drop

Filter housings  $\Delta p$  pressure drop



Bypass valve 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.

# LMD 211

## Designation & Ordering code

### COMPLETE FILTER

Configuration example: **LMD211** | **3** | **B** | **A** | **C** | **6** | **A10** | **N** | **P01**

**Series and size**  
**LMD211**

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

**Bypass valve**  
**S** Without bypass | **B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

**Connections**  
**C** G 1 1/2"  
**F** 1 1/2" NPT  
**I** SAE 24 - 1 7/8" - 12 UN  
**L** 1 1/2" SAE 3000 psi/M + G 1 1/4"  
**M** 1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT  
**N** 1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" UN

**Connection for differential indicator**  
**6** With plugged connection

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### FILTER ELEMENT

Configuration example: **CU210** | **3** | **A10** | **A** | **N** | **P01**

**Element series and size**  
**CU210**

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

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	<b>P10</b> Resin impregnated paper 10 µm
<b>A25</b> Inorganic microfiber 25 µm	<b>P25</b> Resin impregnated paper 25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Seals and treatments**  
**A** NBR  
**V** FPM

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

### CLOGGING INDICATORS

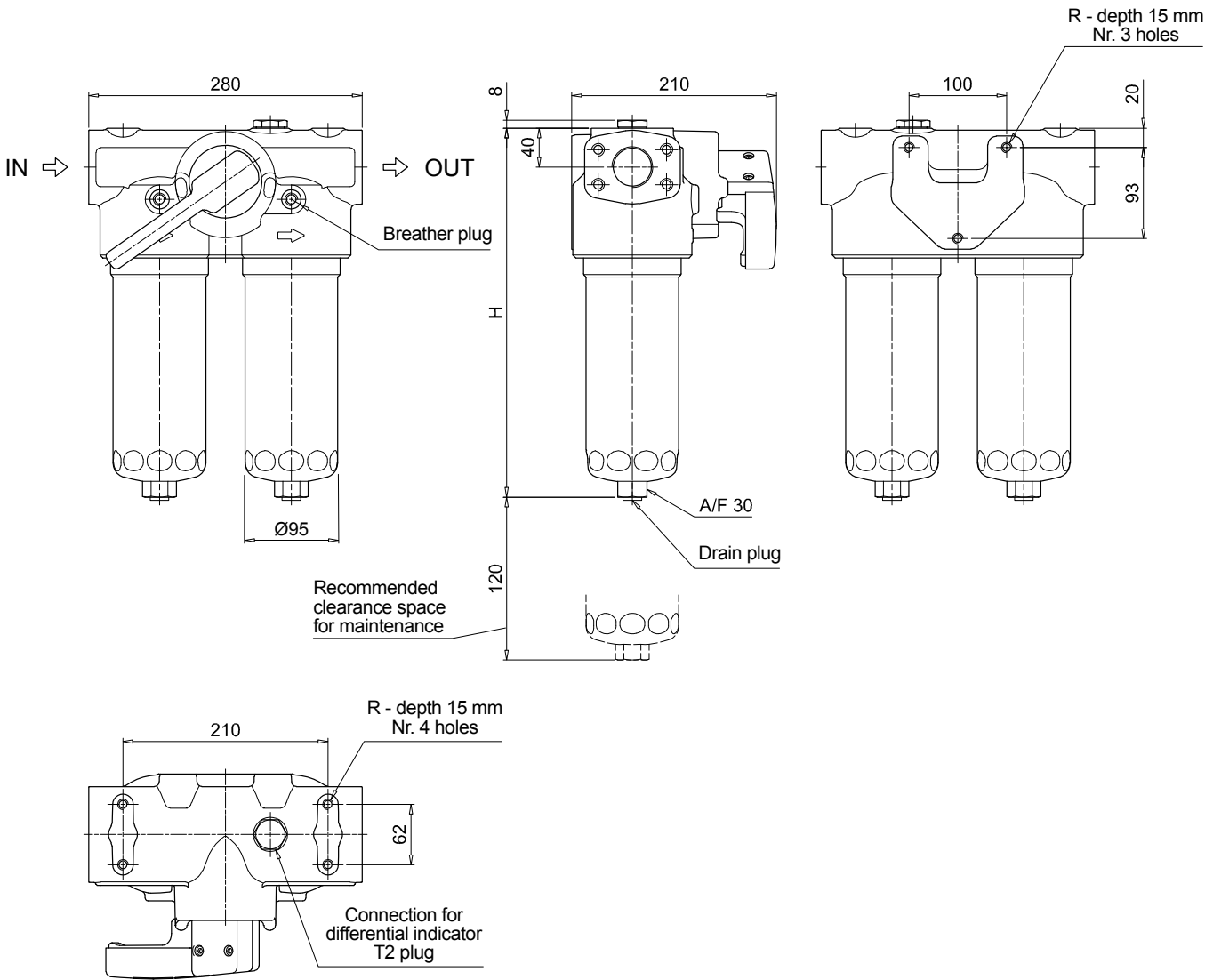
See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

# LMD 211

## Dimensions

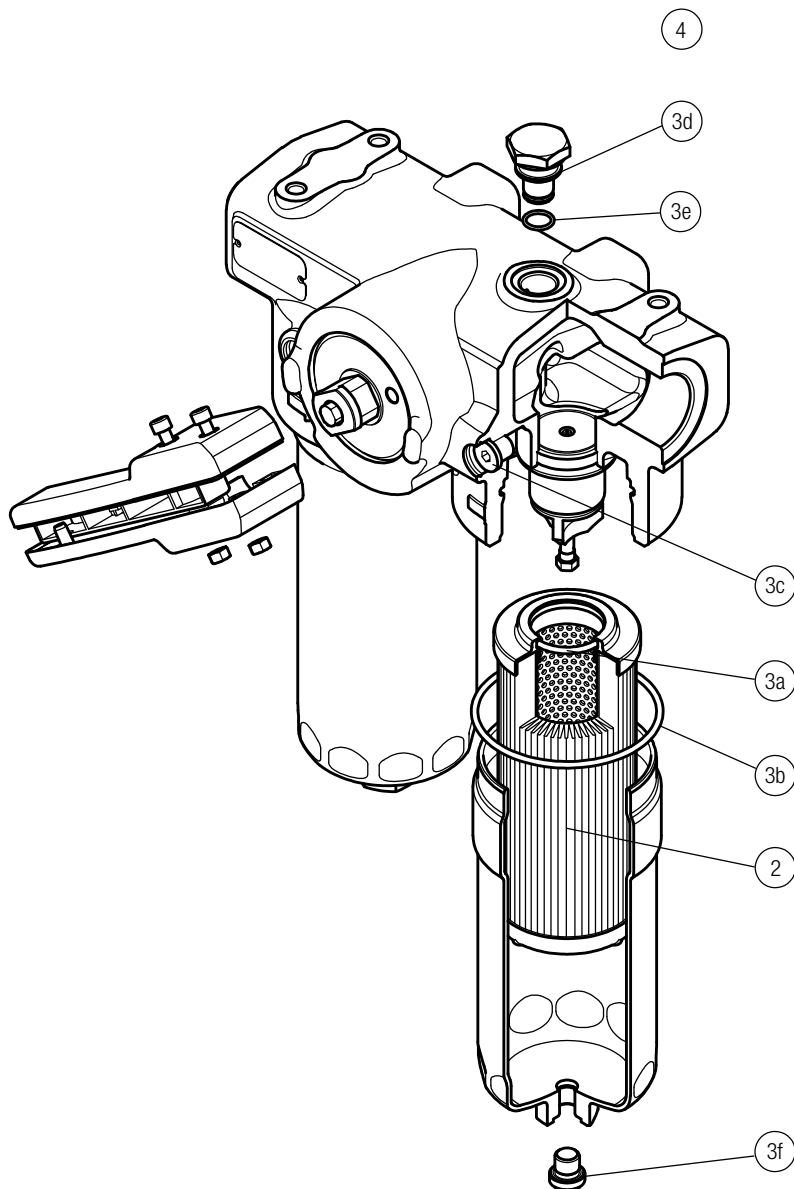
LMD211	
Filter length	H [mm]
<b>1</b>	383
<b>2</b>	513
<b>3</b>	651
Connections	R
<b>C</b>	M10
<b>F - I</b>	3/8" UNC
<b>L</b>	M10
<b>M - N</b>	3/8" UNC



# LMD 211 SPARE PARTS

Order number for spare parts

LMD 211



Item:	Q.ty: 1 pc.		Q.ty: 1 pc.		Q.ty: 2 pcs.	
Filter series	Filter element	Seal Kit code number	Seal Kit code number	Indicator connection plug	Indicator connection plug	Indicator connection plug
LDD	See order table	NBR	FPM	NBR	FPM	FPM
	<b>2</b>	<b>3</b>	<b>3a - 3f</b>	<b>4</b>		
		02050671	02050672	T2H	T2V	





# LMD 400-401 & 431 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 600 l/min



## Description

## Technical data

**Low & Medium Pressure filters****Duplex****Maximum working pressure up to 1.6 MPa (16 bar)****Flow rate up to 600 l/min**

LMD400 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

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

**Available features:**

- 2 1/2" flanged connections, for a maximum flow rate of 600 l/min
- LMD400: In-line connections
- LMD401: In-line connections with compact design
- LMD431: In-line connections with compact design and base mounting
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid.  
For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

**Common applications:**

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

**Filter housing materials**

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Steel - Painted black
- Bypass valve: Steel
- 3-way ball valve: Steel housings - Stainless Steel ball
- Valve: Phosphatized Steel - Stainless Steel

**Pressure**

Test pressure: 2.5 MPa (25 bar)

**Bypass valve**

- Opening pressure 350 kPa (3.5 bar)  $\pm$ 10%
- Other opening pressures on request.

 **$\Delta p$  element type**

- Microfibre filter elements - series N - W: 20 bar
- Fluid flow through the filter element from OUT to IN

**Seals**

FPM series V

**Temperature**

From -25° C to +110° C

**Connections**

- LMD 400-401: In-line Inlet/Outlet
- LMD 401: Same side
- LMD 400-401-431: In-Line

**Note**

LMD 400 - 401 - 431 filters  
are provided  
for vertical mounting

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

Filter series	Weights [kg]				Volumes [dm <sup>3</sup> ]			
	Length	4	5	6	Length	4	5	6
<b>LMD 400 - 401</b>	60	65	72		20	28	33	
<b>LMD 431</b>	-	68	78		-	28	33	



Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
<b>LMD 400 - 401</b>	<b>4</b>	308	349	453	474	530	628	547	567
	<b>5</b>	395	427	509	547	589	637	577	592
	<b>6</b>	429	483	558	568	597	639	583	597
<b>LMD 431</b>	<b>5</b>	395	427	509	547	589	637	577	592
	<b>6</b>	429	483	558	568	597	639	583	597

### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ 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>.

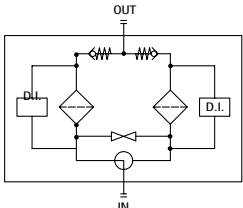
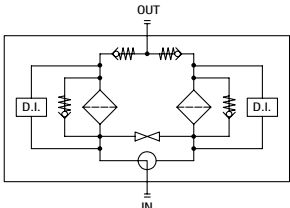
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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.

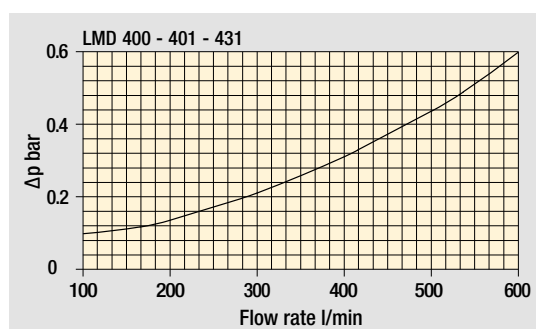
### Hydraulic symbols

Filter series	Execution S	Execution B
<b>LMD 400 - 401</b>	•	•
<b>LMD 431</b>	•	•

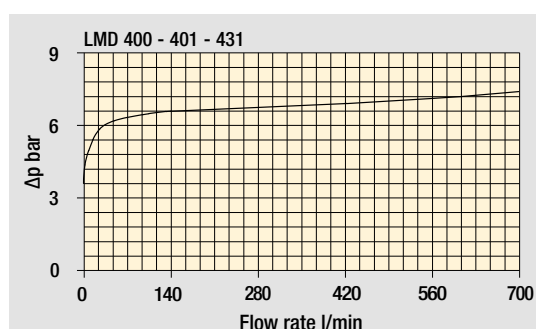



### Pressure drop

Filter housings  $\Delta p$  pressure drop

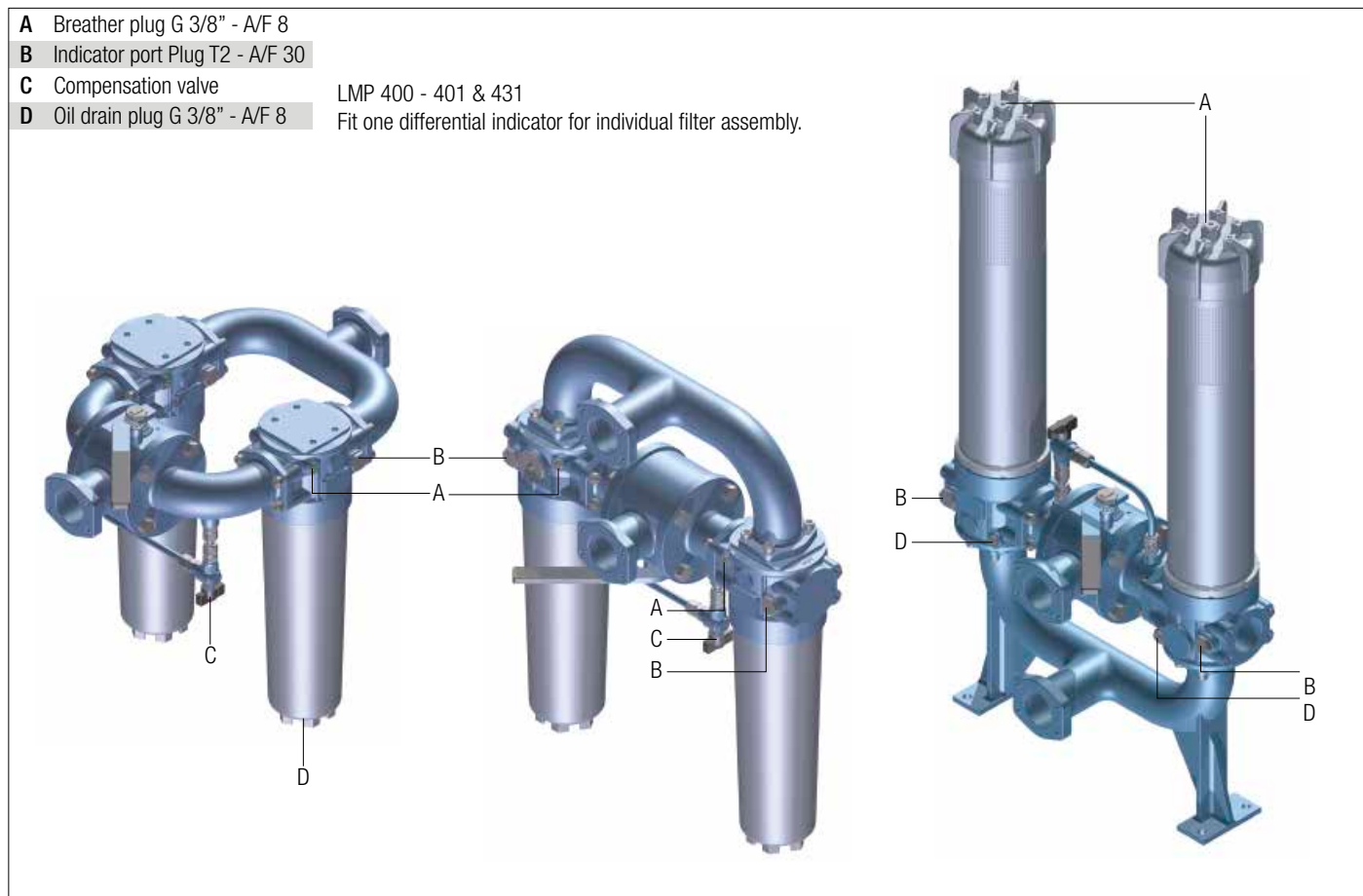


Bypass valve pressure drop

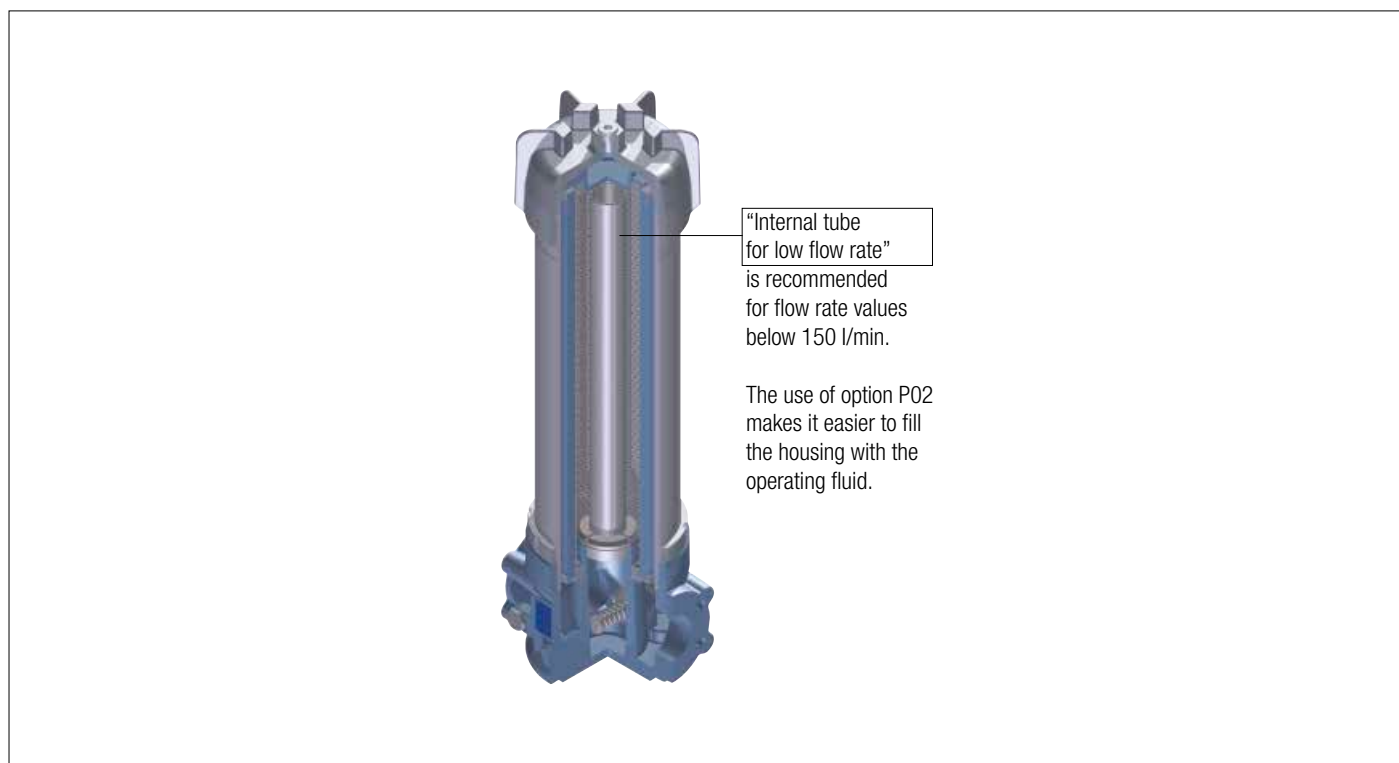


The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

Focus on



## LMD 431: Execution P02





# LMD 400-401

## Designation & Ordering code

### COMPLETE FILTER

Series and size		Configuration example: <b>LMD401</b>   <b>4</b>   <b>B</b>   <b>V</b>   <b>F1</b>   <b>A10</b>   <b>N</b>   <b>P01</b>									
<b>LMD400</b>   <b>LMD401</b>											
Length											
<b>4</b>   <b>5</b>   <b>6</b>											
Bypass valve											
<b>S</b> Without bypass										<b>B</b> With bypass 3.5 bar	
Seals and treatments											
<b>V</b> FPM											
Connections		LMD400		LMD401							
<b>F1</b> 2 1/2" SAE 3000 psi/M		•		•							
<b>F2</b> 2 1/2" SAE 3000 psi/UNC		•		•							
<b>F3</b> 2 1/2" SAE 3000 psi/M, In-line connections		-		•							
<b>F4</b> 2 1/2" SAE 3000 psi/UNC, In-line connections		-		•							
Filtration rating (filter media)											
<b>A03</b> Inorganic microfiber 3 µm										<b>M25</b> Wire mesh 25 µm	
<b>A06</b> Inorganic microfiber 6 µm										<b>M60</b> Wire mesh 60 µm	
<b>A10</b> Inorganic microfiber 10 µm										<b>M90</b> Wire mesh 90 µm	
<b>A16</b> Inorganic microfiber 16 µm										<b>P10</b> Resin impregnated paper 10 µm	
<b>A25</b> Inorganic microfiber 25 µm										<b>P25</b> Resin impregnated paper 25 µm	
<b>WA025</b> Water absorber inorganic microfiber 25 µm											
Element Δp										Filter length	
<b>N</b> 20 bar										<b>P01</b> MP Filtri standard	
										<b>P02</b> Maintenance from the bottom of the housing	
										<b>Pxx</b> Customized	

### FILTER ELEMENT

Element series and size		Configuration example: <b>CU400</b>   <b>4</b>   <b>A10</b>   <b>V</b>   <b>N</b>   <b>P01</b>									
<b>CU400</b>											
Element length											
<b>4</b>   <b>5</b>   <b>6</b>											
Filtration rating (filter media)											
<b>A03</b> Inorganic microfiber 3 µm										<b>M25</b> Wire mesh 25 µm	
<b>A06</b> Inorganic microfiber 6 µm										<b>M60</b> Wire mesh 60 µm	
<b>A10</b> Inorganic microfiber 10 µm										<b>M90</b> Wire mesh 90 µm	
<b>A16</b> Inorganic microfiber 16 µm										<b>P10</b> Resin impregnated paper 10 µm	
<b>A25</b> Inorganic microfiber 25 µm										<b>P25</b> Resin impregnated paper 25 µm	
<b>WA025</b> Water absorber inorganic microfiber 25 µm											
Seals											
<b>V</b> FPM											
Element Δp										Execution	
<b>N</b> 20 bar										<b>P01</b> MP Filtri standard	
										<b>Pxx</b> Customized	

### CLOGGING INDICATORS

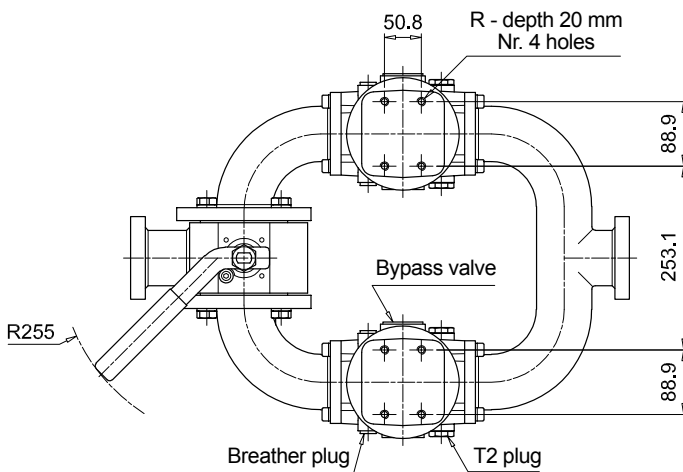
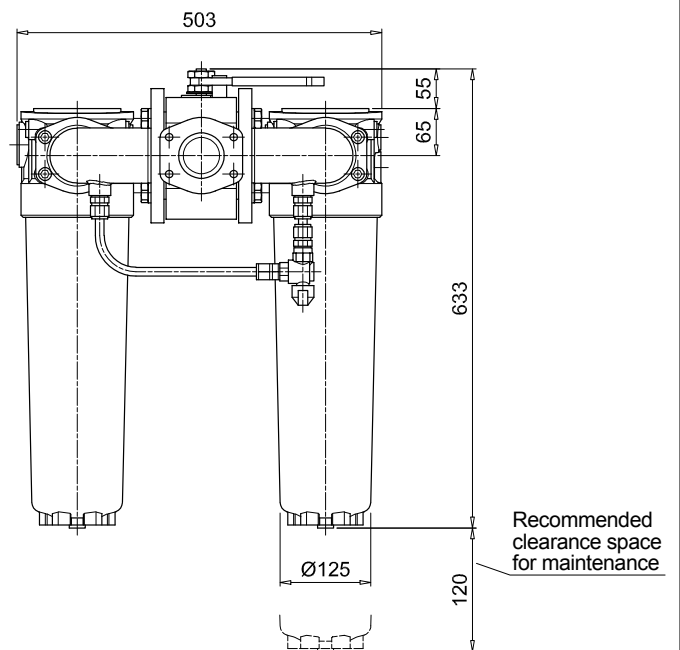
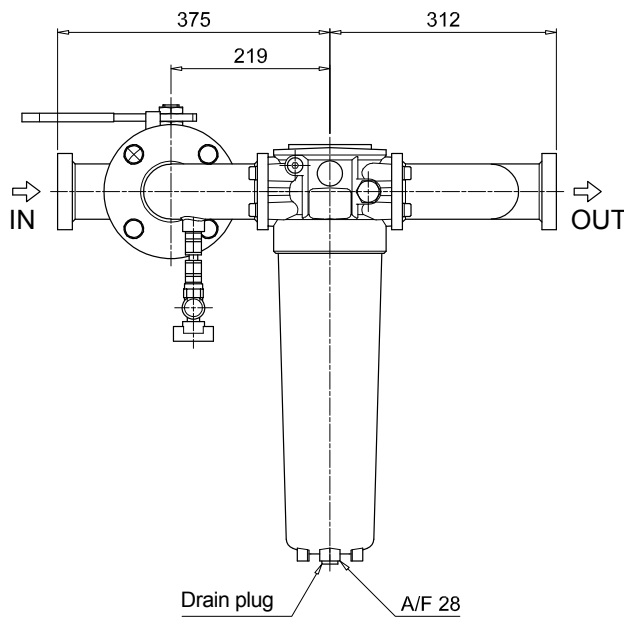
See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

# LMD 400-401

## Dimensions

LMD400	
Length 4	
Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



T2 plug =  
Connection for differential indicator

# LMD 400-401

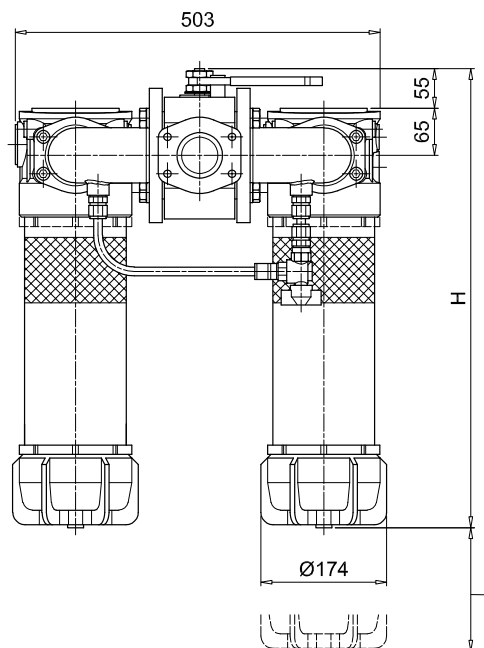
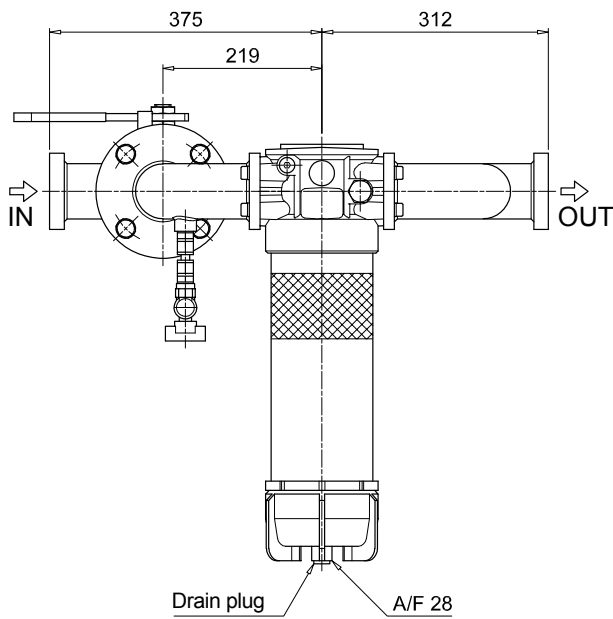
## Dimensions

### LMD400

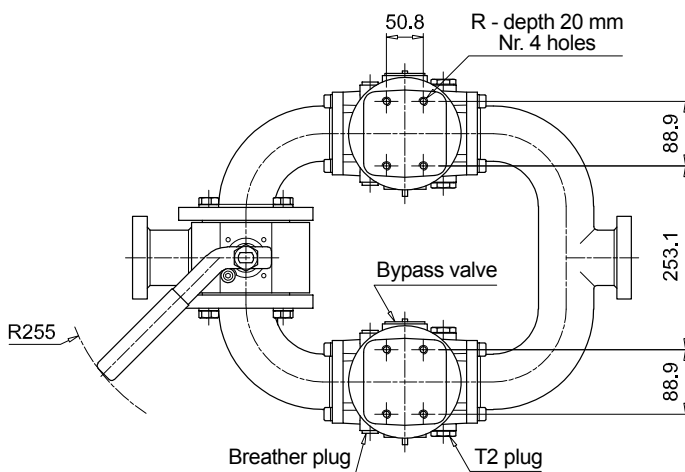
#### Length 5 - 6

Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	883	120	660
6	1213	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



H2 - Recommended clearance space for maintenance

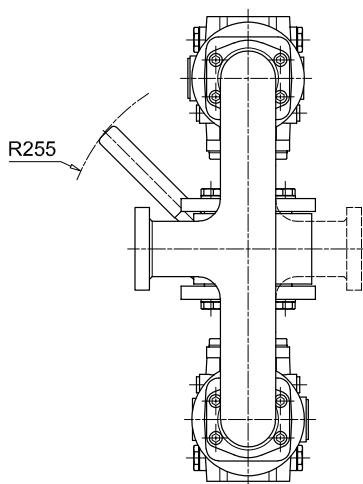
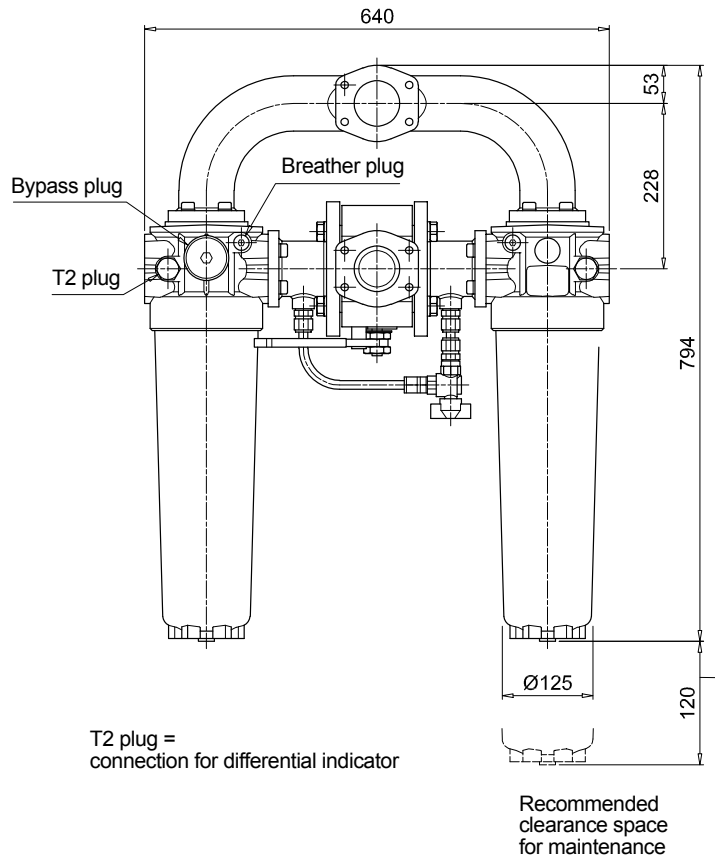
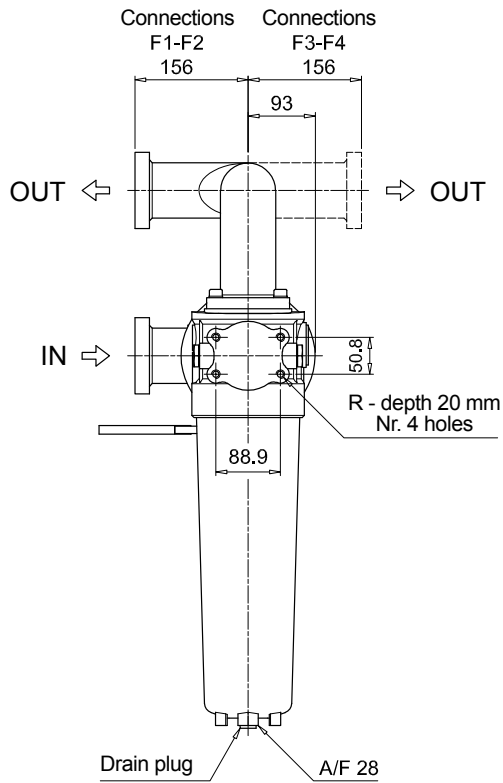


T2 plug =  
Connection for differential indicator

# LMD 400-401

## Dimensions

LMD401	
Length 4	
Connections	R
<b>F1</b>	M12
<b>F2</b>	1/2" UNC
<b>F3</b>	M12
<b>F4</b>	1/2" UNC



# LMD 400-401

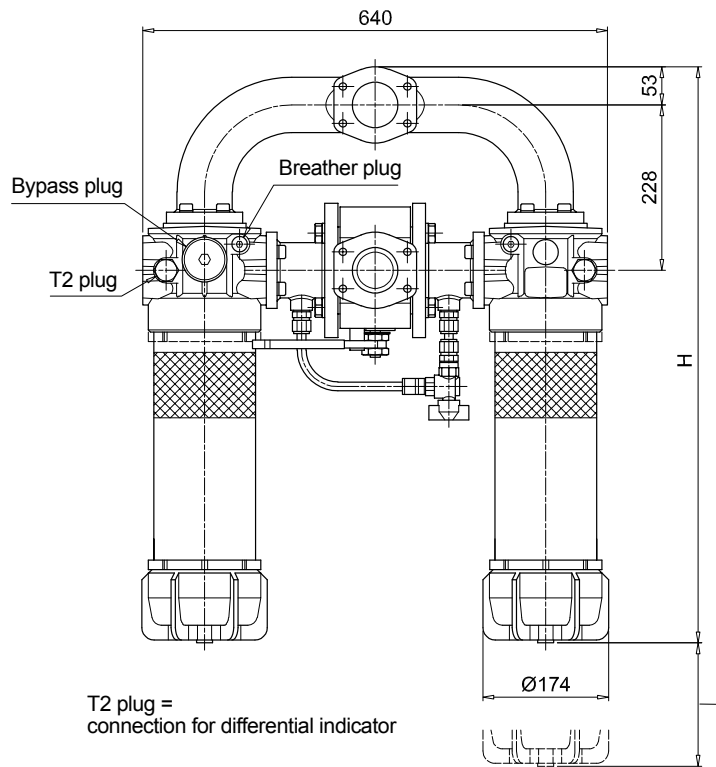
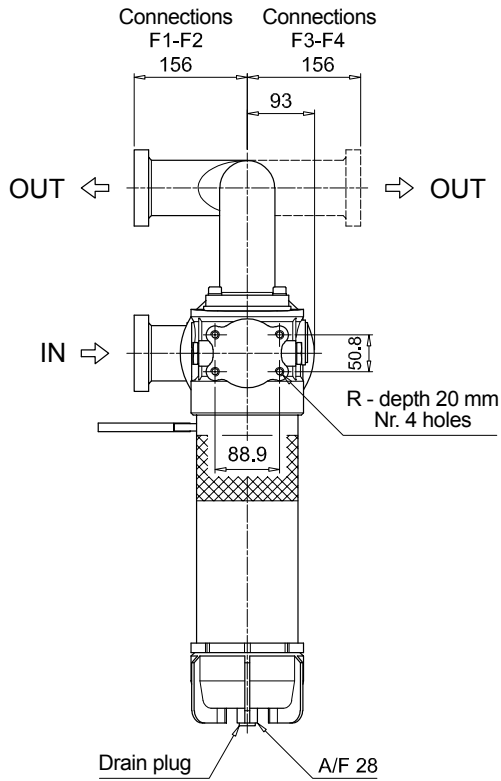
## Dimensions

LMD401

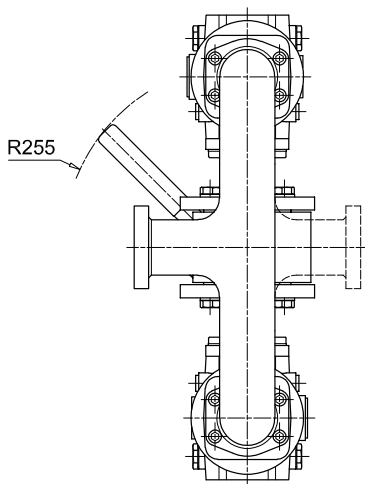
Length 5 - 6

Filter length	H [mm]	H2 [mm] Execution	
		P01	P02
5	1044	120	660
6	1374	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



H2 - Recommended  
clearance space  
for maintenance







# LMD 431

## Designation & Ordering code

### COMPLETE FILTER

<b>Series and size</b> <b>LMD431</b>	Configuration example: <b>LMD431</b>   <b>5</b>   <b>B</b>   <b>V</b>   <b>F1</b>   <b>A10</b>   <b>N</b>   <b>P01</b>
<b>Length</b> <b>5</b>   <b>6</b>	
<b>Bypass valve</b> <b>S</b> Without bypass   <b>B</b> With bypass 3.5 bar	
<b>Seals and treatments</b> <b>V</b> FPM	
<b>Connections</b> <b>F1</b> 2 1/2" SAE 3000 psi/M <b>F2</b> 2 1/2" SAE 3000 psi/UNC <b>F3</b> 2 1/2" SAE 3000 psi/M, In-line connections <b>F4</b> 2 1/2" SAE 3000 psi/UNC, In-line connections	
<b>Filtration rating (filter media)</b>	
<b>A03</b> Inorganic microfiber 3 µm   <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm   <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm   <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm   <b>P10</b> Resin impregnated paper 10 µm <b>A25</b> Inorganic microfiber 25 µm   <b>P25</b> Resin impregnated paper 25 µm	
<b>WA025</b> Water absorber inorganic microfiber 25 µm	
	<b>Element Δp</b> <b>N</b> 20 bar
	<b>Execution</b> <b>P01</b> MP Filtri standard <b>P02</b> With internal tube for low flow rate <b>Pxx</b> Customized

### FILTER ELEMENT

<b>Element series and size</b> <b>CU400</b>	Configuration example: <b>CU400</b>   <b>5</b>   <b>A10</b>   <b>V</b>   <b>N</b>   <b>P01</b>
<b>Element length</b> <b>5</b>   <b>6</b>	
<b>Filtration rating (filter media)</b>	
<b>A03</b> Inorganic microfiber 3 µm   <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm   <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm   <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm   <b>P10</b> Resin impregnated paper 10 µm <b>A25</b> Inorganic microfiber 25 µm   <b>P25</b> Resin impregnated paper 25 µm	
<b>WA025</b> Water absorber inorganic microfiber 25 µm	
<b>Seals</b> <b>V</b> FPM	
	<b>Element Δp</b> <b>N</b> 20 bar
	<b>Execution</b> <b>P01</b> MP Filtri standard <b>Pxx</b> Customized

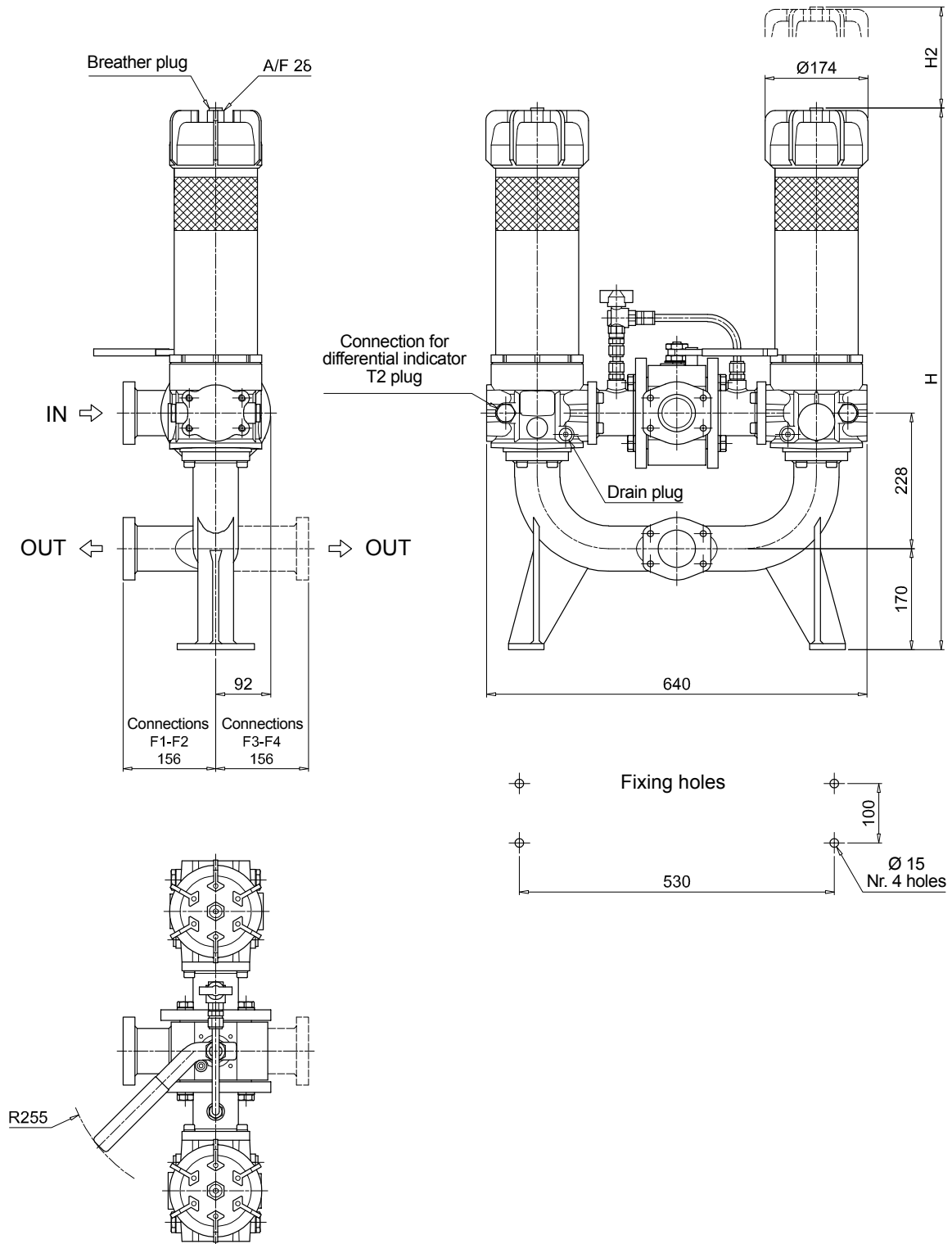
### CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug

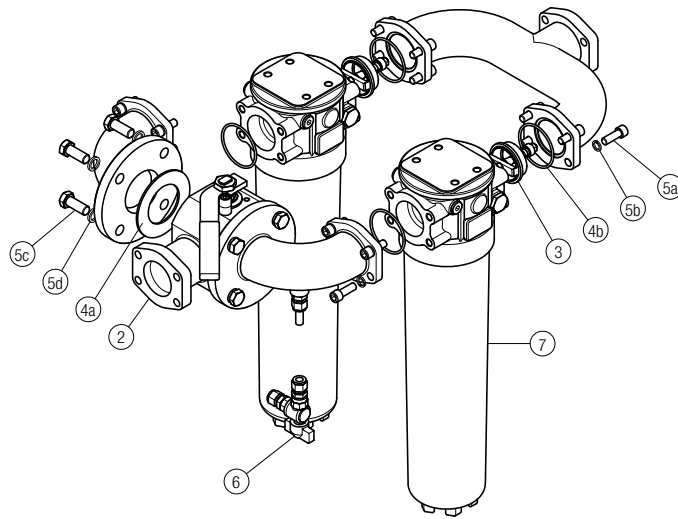
### LMD431

Filter length	H [mm]	H2 [mm]
<b>5</b>	1161	660
<b>6</b>	1491	690



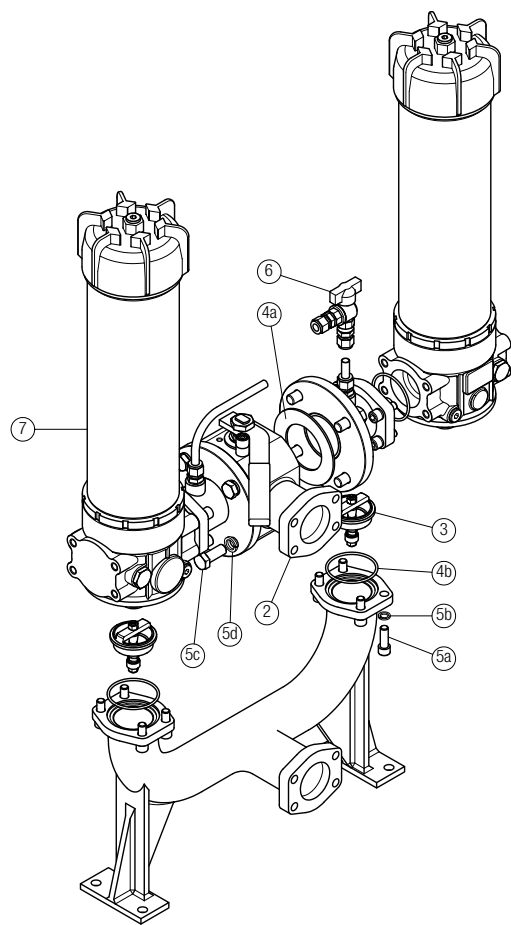
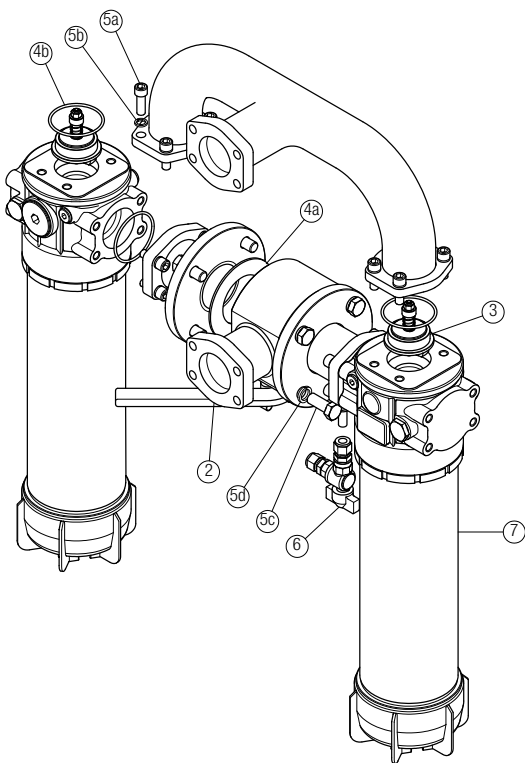
Order number for spare parts

**LMD 400**



**LMD 401**

**LMD 431**



Item:	Q.ty: 1 pc.		Q.ty: 2 pcs.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 2 pcs.
Filter series	3-way ball valve PN 16 2 1/2" SAE 3000 psi/M 2 1/2" SAE 3000 psi/UNC		One-way valve	Seal Kit	Threaded fasteners kit	Kit ball valve with hose fitting	Filter See order table
<b>LMD 400-401-431</b>	02001440	02001441	02001429	02050399	02049062	02025043	LMP400xF2.....





# LMD 951 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 1200 l/min



# LMD 951 GENERAL INFORMATION

## Description

## Technical data

### Low & Medium Pressure filters

#### Duplex

**Maximum working pressure up to 1.6 MPa (16 bar)**

**Flow rate up to 1200 l/min**

LMD950 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

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

#### Available features:

- Flanged connections up to 4", for a maximum flow rate of 1200 l/min
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

#### Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Welded - Painted black
- Bypass valve: Steel
- 3-way ball valve: Steel body - Stainless steel ball
- Check valve: Cast Iron body - AISI 304 leaf

#### Pressure

- SAE + DIN Flange
- Test pressure: 2.5 MPa (25 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar)  $\pm 10\%$
- Other opening pressures on request.

#### Number of filter elements

LMD 951: 2 filter elements CU950-3

#### $\Delta p$ element type

- Microfibre filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

#### Seals

FPM series V

#### Temperature

From  $-25^{\circ}\text{C}$  to  $+110^{\circ}\text{C}$

#### Connections

- LMD 951: In-line Inlet/Outlet
- Same side

#### Note

LMD 951 filters are provided for vertical mounting

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

Filter series	Weights [kg]		Volumes [dm <sup>3</sup> ]	
	DN 80	DN 100	DN 80	DN 100
<b>LMD 951</b>	102	130	62	66



Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
<b>LMD 951</b>	<b>3</b>	853	884	995	1066	1096	1233

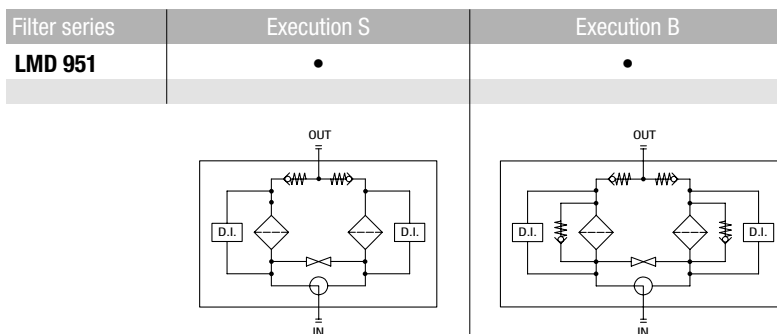
### Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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>.

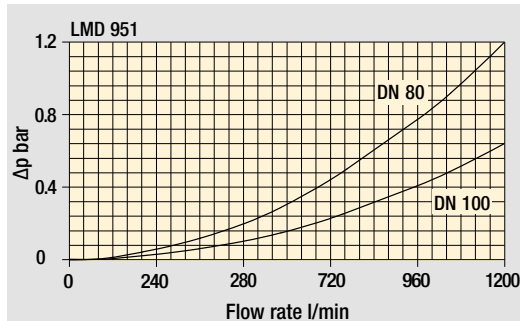
For different pressure drop or fluid viscosity we recommend to use our selection software available on [www.mpfiltri.com](http://www.mpfiltri.com).

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.

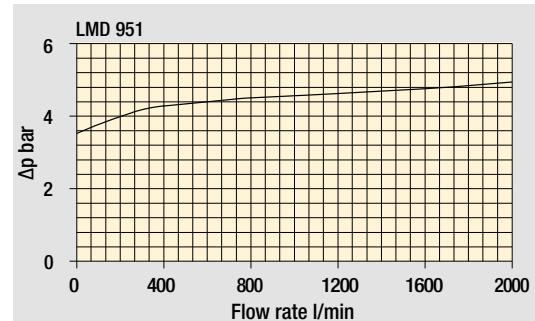
### Hydraulic symbols



### Pressure drop



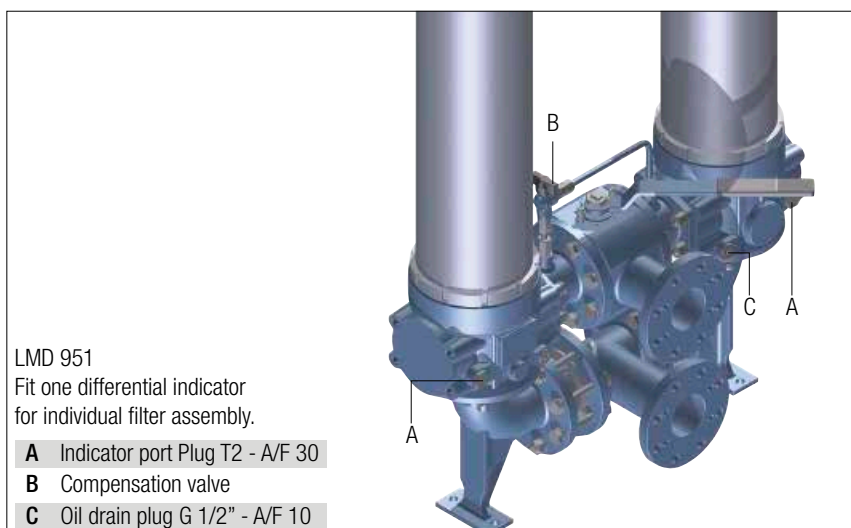
Filter housings  
 $\Delta p$  pressure drop



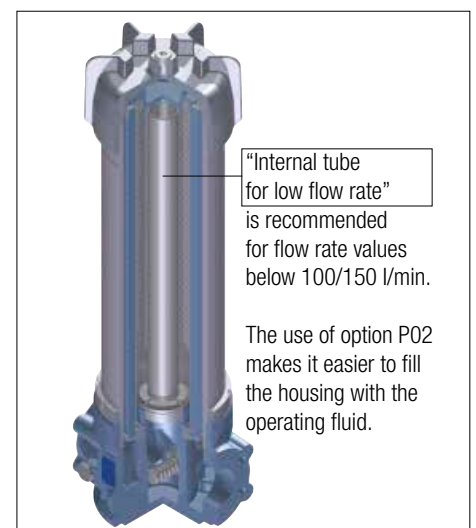
Bypass valve  
pressure drop

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.

### Focus on



### Execution P02



# LMD 951

## Designation & Ordering code

### COMPLETE FILTER

<b>Series and size</b>	Configuration example: <b>LMD951</b> <b>3</b> <b>B</b> <b>V</b> <b>F1</b> <b>A10</b> <b>N</b> <b>P01</b>							
<b>LMD951</b>								
<b>Length</b>	<b>3</b>							
<b>Bypass valve</b>	<b>S</b> Without bypass		<b>B</b> With bypass 3.5 bar					
<b>Seals and treatments</b>	<b>V</b> FPM							
<b>Connections</b>	<b>F1</b> 3" SAE 3000 psi/M <b>F2</b> 3" SAE 3000 psi/UNC <b>F3</b> 4" SAE 3000 psi/M <b>F4</b> 4" SAE 3000 psi/UNC <b>F5</b> 3" SAE 3000 psi/M, In-line connections <b>F6</b> 3" SAE 3000 psi/UNC, In-line connections <b>F7</b> 4" SAE 3000 psi/M, In-line connections <b>F8</b> 4" SAE 3000 psi/UNC, In-line connections							
<b>Filtration rating (filter media)</b>	<b>A03</b> Inorganic microfiber 3 µm <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm <b>A25</b> Inorganic microfiber 25 µm <b>WA025</b> Water absorber inorganic microfiber 25 µm							
	<b>Element Δp</b>				<b>Execution</b>			
	<b>N</b> 20 bar				<b>P01</b> MP Filtri standard <b>P02</b> With internal tube for low flow rate <b>Pxx</b> Customized			

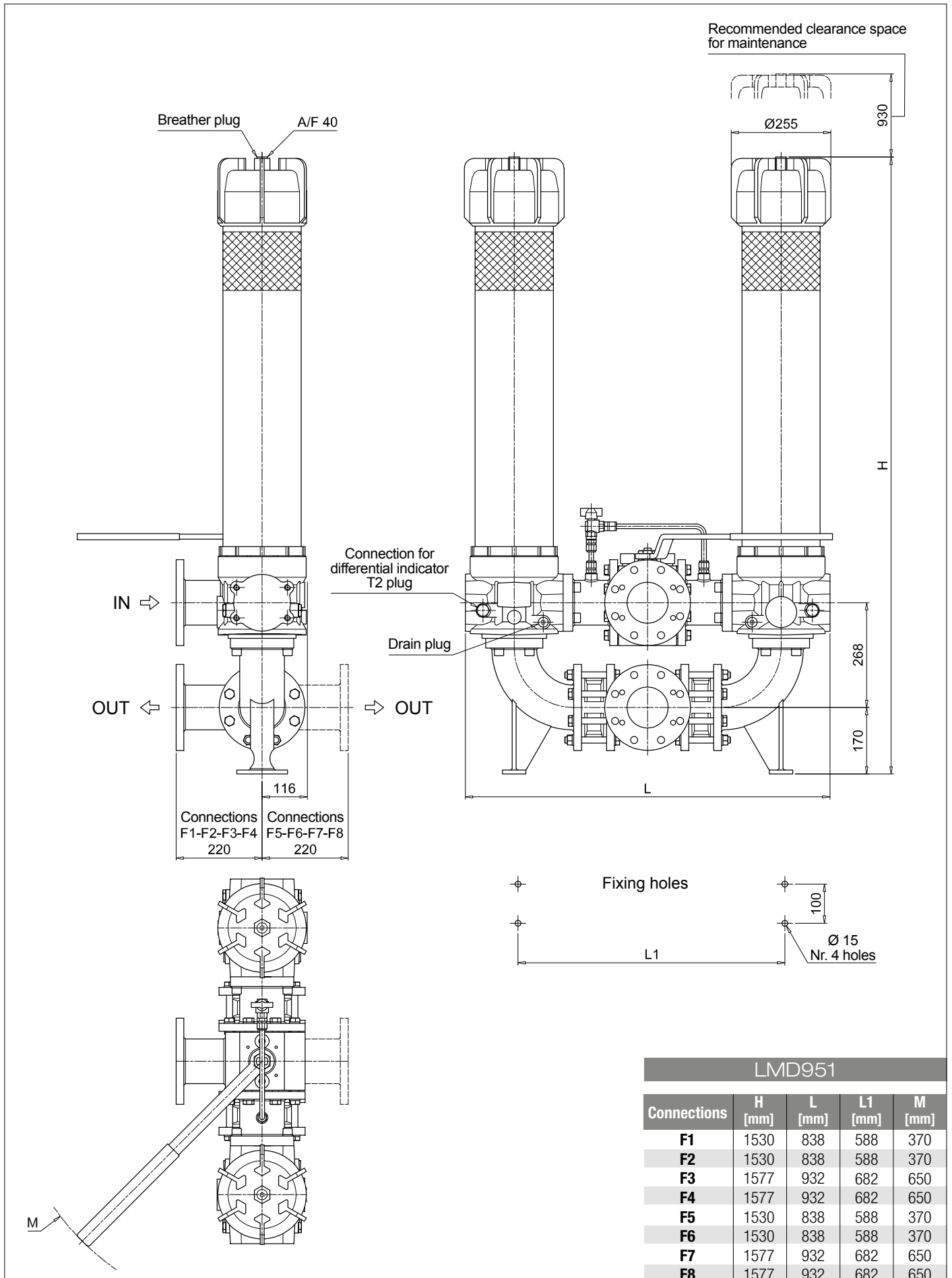
### FILTER ELEMENT

<b>Element series and size</b>	Configuration example: <b>CU950</b> <b>3</b> <b>A10</b> <b>V</b> <b>N</b> <b>P01</b>					
<b>CU950</b>						
<b>Element length</b>	<b>3</b>					
<b>Filtration rating (filter media)</b>	<b>A03</b> Inorganic microfiber 3 µm <b>M25</b> Wire mesh 25 µm <b>A06</b> Inorganic microfiber 6 µm <b>M60</b> Wire mesh 60 µm <b>A10</b> Inorganic microfiber 10 µm <b>M90</b> Wire mesh 90 µm <b>A16</b> Inorganic microfiber 16 µm <b>A25</b> Inorganic microfiber 25 µm <b>WA025</b> Water absorber inorganic microfiber 25 µm					
<b>Seals</b>	<b>V</b> FPM					
	<b>Element Δp</b>			<b>Execution</b>		
	<b>N</b> 20 bar			<b>P01</b> MP Filtri standard <b>Pxx</b> Customized		

### CLOGGING INDICATORS

See page 478

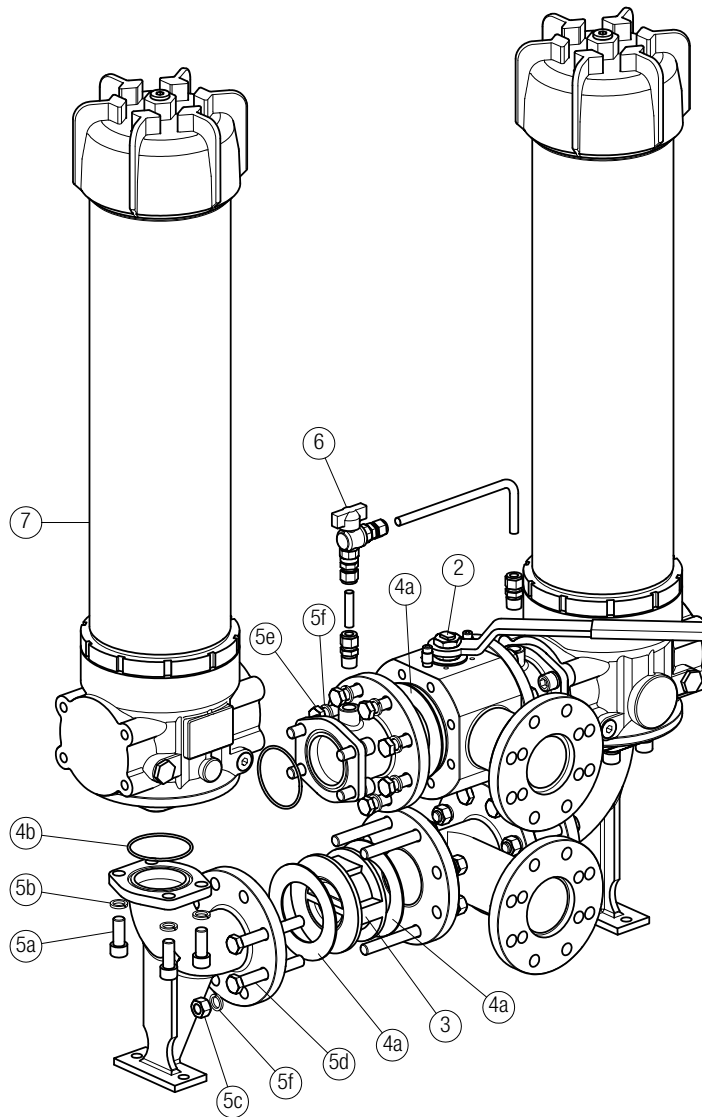
<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug



# LMD 951 SPARE PARTS

Order number for spare parts

LMD 951



Item 7:  
for complete filter code and  
spare parts, see  
LMP 950 - 951 series chapter

Quantity:  
- filter spare parts: 2 pcs.  
- filter seal kit: 2 pcs.

Item:	Q.ty: 1 pc. <b>2</b>		Q.ty: 2 pcs. <b>3</b>	Q.ty: 1 pc. <b>4</b>	Q.ty: 1 pc. <b>5</b> (5a ÷ 5f)	Q.ty: 1 pc. <b>6</b>	Q.ty: 2 pcs. <b>7</b>
Filter series LMD 951	3-way ball valve PN 16		One-way valve	Seal Kit	Threaded fasteners kit	G 1/2" Ball Valve Kit with straight fittings	Filter
<b>F1 - F2 - F5 - F6 / D1 - D3 (3" SAE / DIN PN16 DN 80)</b>	3" SAE 3000 psi/M 02001135	3" SAE 3000 psi/UNC 02001438	02001418	02050388	02049056	02025043	LMP9513xVF1xxxNP01
<b>F3 - F4 - F7 - F8 / D2 - D4 (4" SAE / DIN PN16 DN 100)</b>	4" SAE 3000 psi/M 02001162	4" SAE 3000 psi/UNC 02001439	02001419	02050389	02049057		LMP9513xVF3xxxNP01





# DIN 24550 **Filter element according to DIN 24550**

## LDP & LDD series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 360 l/min

## LMP 900-901 series

Maximum working pressure up to 3 MPa (30 bar) - Flow rate up to 2000 l/min

## LMP 902-903 series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 3000 l/min





# LDP & LDD series

Filter element according to DIN 24550

---

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 360 l/min

# LDP & LDD GENERAL INFORMATION

## Filter element according to DIN 24550

### Descriptions

#### Low & Medium Pressure filters

**Maximum working pressure up to 6 MPa (60 bar)**  
**Flow rate up to 360 l/min**

**LDP** is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.

They are also suitable for the off-line filtration of small reservoirs. They are directly connected to the lines of the system through the hydraulic fittings.

#### Available features:

- Female threaded connections up to 1 1/2", for a maximum return flow rate of 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

Delivery lines, in low pressure industrial equipment or mobile machines

**LDD** is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.

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 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve integrated in the changeover lever, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

### Technical data

#### Filter housing materials

- Head: Aluminium
- Bowl: Cathaphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

#### Pressure

- Test pressure: 9 MPa (90 bar)
- Burst pressure: 21 MPa (210 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar)  $\pm$ 10%
- Other opening pressures on request.

#### $\Delta p$ element type

- Microfibre 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

Inlet/Outlet In-Line

#### Note

LDP - LDD filters are provided for vertical mounting

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

Filter series	Weights [kg]	Volumes [dm <sup>3</sup> ]
<b>LDP 016</b>	2.0	1.2
<b>LDP 025</b>	3.0	1.6
<b>LDP 040</b>	5.0	2.2
<b>LDD 016</b>	9.3	3.6
<b>LDD 025</b>	9.5	4.1
<b>LDD 040</b>	11.3	4.8

# GENERAL INFORMATION LDP & LDD

Filter element according to DIN 24550

FILTER ASSEMBLY SIZING  
Flow rates [l/min]

Filter series	Filter element design - N Series									
	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
<b>LDP 016</b>	83	91	178	198	222	350	353	358	295	309
<b>LDP 025</b>	124	134	227	245	265	357	358	358	319	330
<b>LDP 040</b>	173	191	274	284	311	359	360	361	332	337
<b>LDD 016</b>	68	73	120	130	140	189	190	192	169	174
<b>LDD 025</b>	93	98	142	149	157	191	192	192	178	181
<b>LDD 040</b>	118	126	161	165	175	192	192	193	182	184

**Maximum flow rate for a complete low and medium pressure filter with a pressure drop  $\Delta p = 0.7$  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

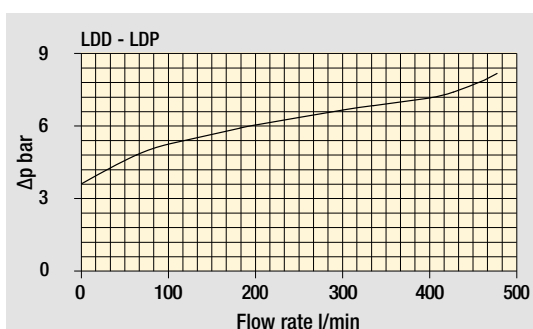
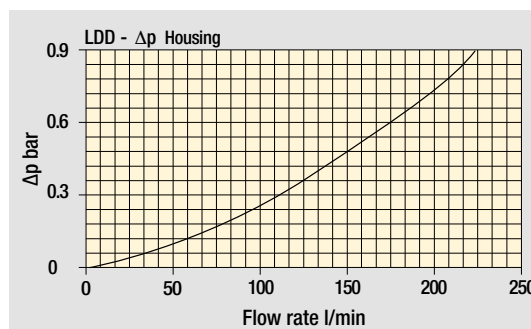
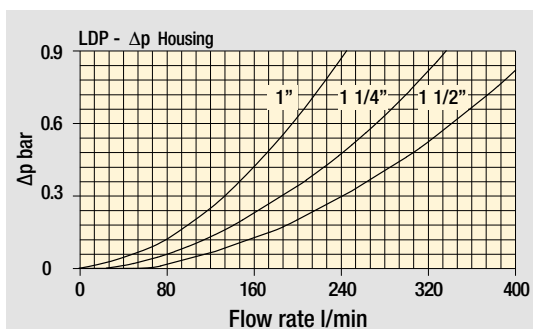
Filter series	Execution S	Execution B	Execution S	Execution B
<b>LDP 016</b>	•	•	-	-
<b>LDP 025</b>	•	•	-	-
<b>LDP 040</b>	•	•	-	-
<b>LDD 016</b>	-	-	•	•
<b>LDD 025</b>	-	-	•	•
<b>LDD 040</b>	-	-	•	•

Filter series	Execution S	Execution B	Execution S	Execution B
<b>LDP 016</b>				
<b>LDP 025</b>				
<b>LDP 040</b>				

## Pressure drop

Filter housings  $\Delta p$  pressure drop



Bypass valve 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.

# LDP Filter element according to DIN 24550

## Designation & Ordering code

### COMPLETE FILTER

<b>Series</b>	Configuration example: LDP 025 B A D 6 A10 N P01										
<b>LDP</b>											
<b>Size</b>											
<b>016</b>	Element according to DIN 24550 - T3 DN160										
<b>025</b>	Element according to DIN 24550 - T3 DN250										
<b>040</b>	Element according to DIN 24550 - T3 DN400										
<b>Bypass valve</b>											
<b>S</b>	Without bypass					<b>B</b>	With bypass 3.5 bar				
<b>Seals and treatments</b>											
<b>A</b>	NBR										
<b>V</b>	FPM										
<b>Connections</b>											
<b>A</b>	G 1"					<b>F</b>	1 1/2" NPT				
<b>B</b>	G 1 1/4"					<b>G</b>	SAE 16 - 1 5/16" - 12 UN				
<b>C</b>	G 1 1/2"					<b>H</b>	SAE 20 - 1 5/8" - 12 UN				
<b>D</b>	1" NPT					<b>I</b>	SAE 24 - 1 7/8" - 12 UN				
<b>E</b>	1 1/4" NPT										
<b>Connection for differential indicator</b>											
<b>6</b>	With plugged connection										
<b>Filtration rating (filter media)</b>											
<b>A03</b>	Inorganic microfiber 3 µm					<b>M25</b>	Wire mesh 25 µm				
<b>A06</b>	Inorganic microfiber 6 µm					<b>M60</b>	Wire mesh 60 µm				
<b>A10</b>	Inorganic microfiber 10 µm					<b>M90</b>	Wire mesh 90 µm				
<b>A16</b>	Inorganic microfiber 16 µm					<b>P10</b>	Resin impregnated paper 10 µm				
<b>A25</b>	Inorganic microfiber 25 µm					<b>P25</b>	Resin impregnated paper 25 µm				
<b>WA025</b>	Water absorber inorganic microfiber 25 µm										
<b>Element Δp</b>	<b>N</b>					<b>20 bar</b>					
<b>Execution</b>	<b>P01</b>					<b>MP Filtri standard</b>					
	<b>Pxx</b>					<b>Customized</b>					

### FILTER ELEMENT

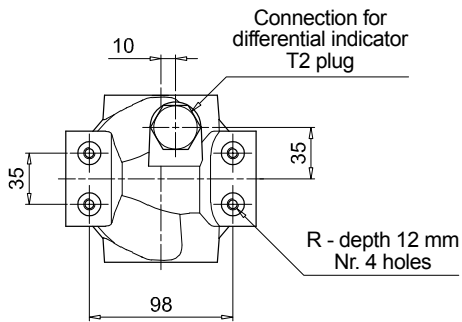
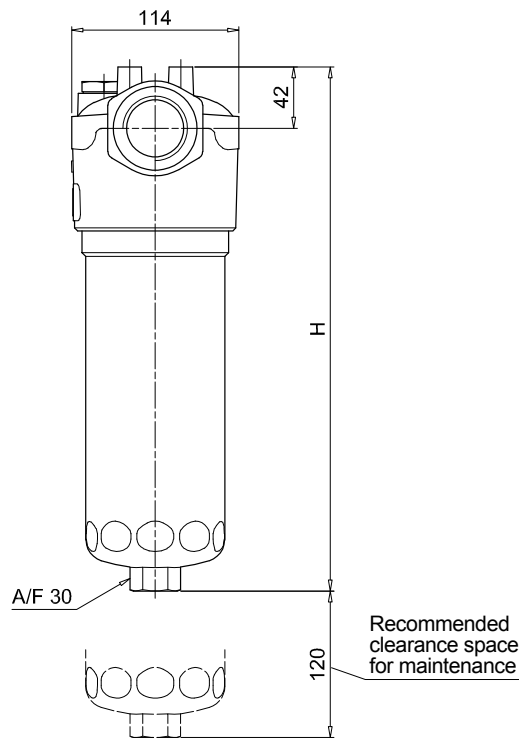
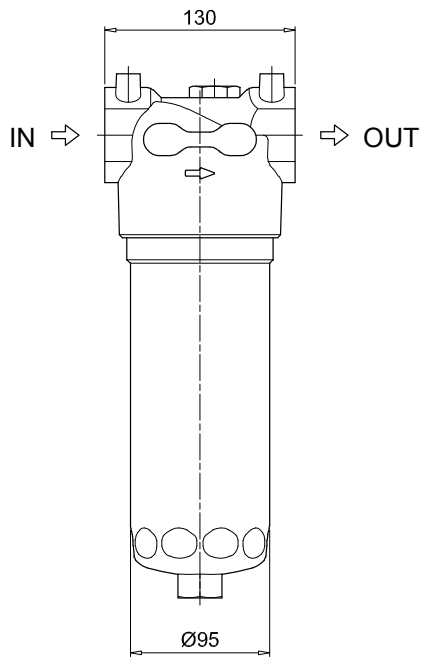
<b>Element series</b>	Configuration example: DN 025 A10 A N P01						
<b>DN</b>							
<b>Element size</b>							
<b>016</b>	Element according to DIN 24550 - T3 DN160						
<b>025</b>	Element according to DIN 24550 - T3 DN250						
<b>040</b>	Element according to DIN 24550 - T3 DN400						
<b>Filtration rating (filter media)</b>							
<b>A03</b>	Inorganic microfiber 3 µm			<b>M25</b>	Wire mesh 25 µm		
<b>A06</b>	Inorganic microfiber 6 µm			<b>M60</b>	Wire mesh 60 µm		
<b>A10</b>	Inorganic microfiber 10 µm			<b>M90</b>	Wire mesh 90 µm		
<b>A16</b>	Inorganic microfiber 16 µm			<b>P10</b>	Resin impregnated paper 10 µm		
<b>A25</b>	Inorganic microfiber 25 µm			<b>P25</b>	Resin impregnated paper 25 µm		
<b>WA025</b>	Water absorber inorganic microfiber 25 µm						
<b>Seals and treatments</b>	<b>A</b>			<b>NBR</b>			
	<b>V</b>			<b>FPM</b>			
<b>Element Δp</b>	<b>N</b>			<b>20 bar</b>			
<b>Execution</b>	<b>P01</b>			<b>MP Filtri standard</b>			
	<b>Pxx</b>			<b>Customized</b>			

### CLOGGING INDICATORS

See page 478

<b>DEA</b>	Electrical differential indicator
<b>DEM</b>	Electrical differential indicator
<b>DLA</b>	Electrical / visual differential indicator
<b>DLE</b>	Electrical / visual differential indicator

<b>DTA</b>	Electronic differential indicator
<b>DVA</b>	Visual differential indicator
<b>DVM</b>	Visual differential indicator
<b>T2</b>	Plug



LDP	
Filter size	H [mm]
<b>016</b>	268
<b>025</b>	358
<b>040</b>	508
Connections	R
<b>A-B-C</b>	M8
<b>D-E-F-G-H-I</b>	5/16" UNC

# LDD Filter element according to DIN 24550

## Designation & Ordering code

### COMPLETE FILTER

Series **LDD** Configuration example: **LDD** **025** **B** **A** **C** **6** **A10** **N** **P01**

**Size**

**016** Element according to DIN 24550 - T3 DN160

**025** Element according to DIN 24550 - T3 DN250

**040** Element according to DIN 24550 - T3 DN400

**Bypass valve**

**S** Without bypass      **B** With bypass 3.5 bar

**Seals and treatments**

**A** NBR

**V** FPM

**Connections**

**C** G 1 1/2"

**F** 1 1/2" NPT

**I** SAE 24 - 1 7/8" - 12 UN

**L** 1 1/2" SAE 3000 psi/M + G 1 1/4"

**M** 1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT

**N** 1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" UN

**Connection for differential indicator**

**6** With plugged connection

**Filtration rating (filter media)**

**A03** Inorganic microfiber 3 µm      **M25** Wire mesh 25 µm

**A06** Inorganic microfiber 6 µm      **M60** Wire mesh 60 µm

**A10** Inorganic microfiber 10 µm      **M90** Wire mesh 90 µm

**A16** Inorganic microfiber 16 µm      **P10** Resin impregnated paper 10 µm

**A25** Inorganic microfiber 25 µm      **P25** Resin impregnated paper 25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**

**N** 20 bar

**Execution**

**P01** MP Filtri standard

**Pxx** Customized

### FILTER ELEMENT

Element series **DN** Configuration example: **DN** **025** **A10** **A** **N** **P01**

**Element size**

**016** Element according to DIN 24550 - T3 DN160

**025** Element according to DIN 24550 - T3 DN250

**040** Element according to DIN 24550 - T3 DN400

**Filtration rating (filter media)**

**A03** Inorganic microfiber 3 µm      **M25** Wire mesh 25 µm

**A06** Inorganic microfiber 6 µm      **M60** Wire mesh 60 µm

**A10** Inorganic microfiber 10 µm      **M90** Wire mesh 90 µm

**A16** Inorganic microfiber 16 µm      **P10** Resin impregnated paper 10 µm

**A25** Inorganic microfiber 25 µm      **P25** Resin impregnated paper 25 µm

**WA025** Water absorber inorganic microfiber 25 µm

**Seals and treatments**

**A** NBR

**V** FPM

**Element Δp**

**N** 20 bar

**Execution**

**P01** MP Filtri standard

**Pxx** Customized

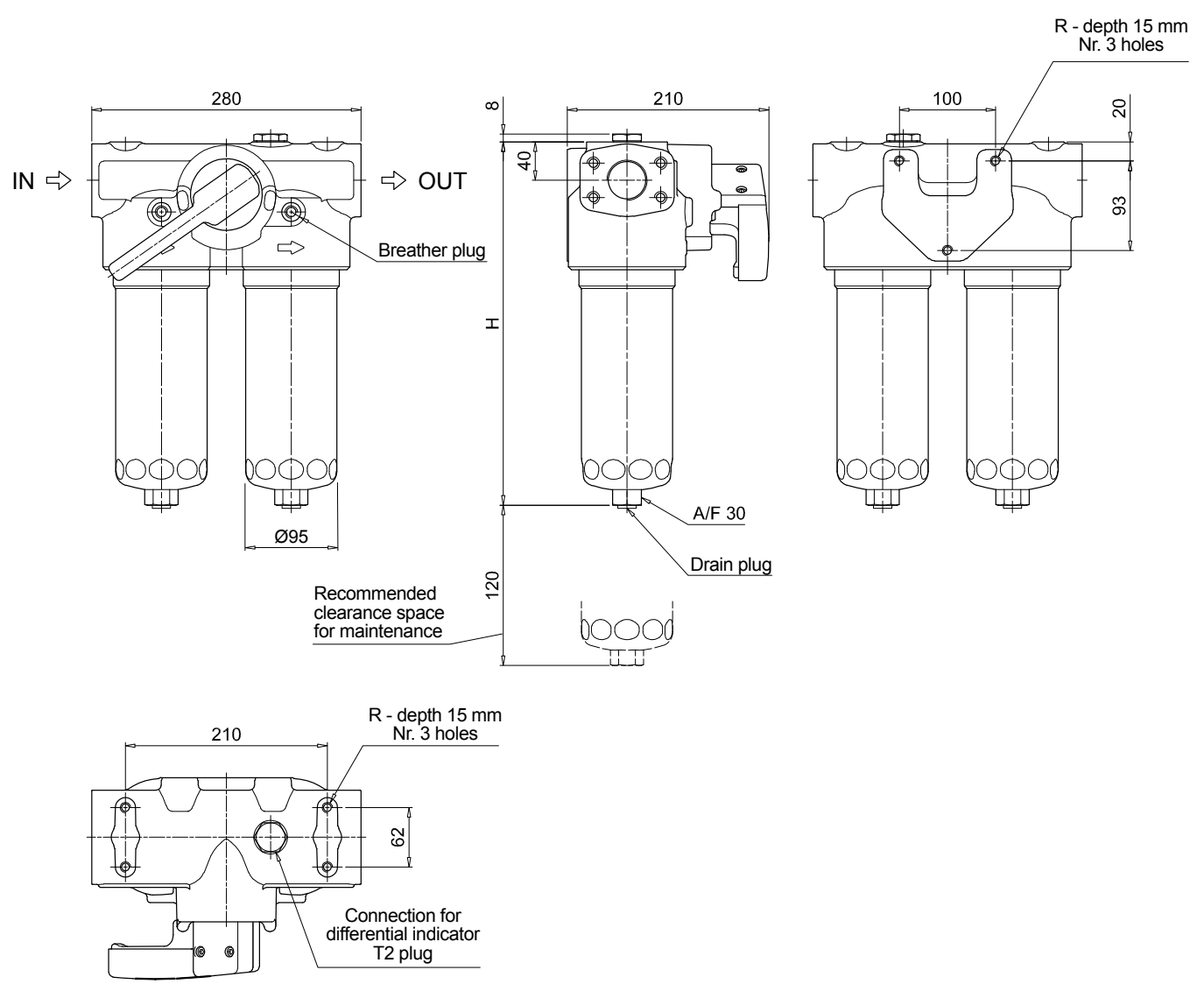
### CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator
<b>DEM</b> Electrical differential indicator
<b>DLA</b> Electrical / visual differential indicator
<b>DLE</b> Electrical / visual differential indicator

<b>DTA</b> Electronic differential indicator
<b>DVA</b> Visual differential indicator
<b>DVM</b> Visual differential indicator
<b>T2</b> Plug

LDD	
Filter size	H [mm]
<b>016</b>	293
<b>025</b>	383
<b>040</b>	533
Connections	R
<b>C</b>	M10
<b>F - I</b>	3/8" UNC
<b>L</b>	M10
<b>M - N</b>	3/8" UNC

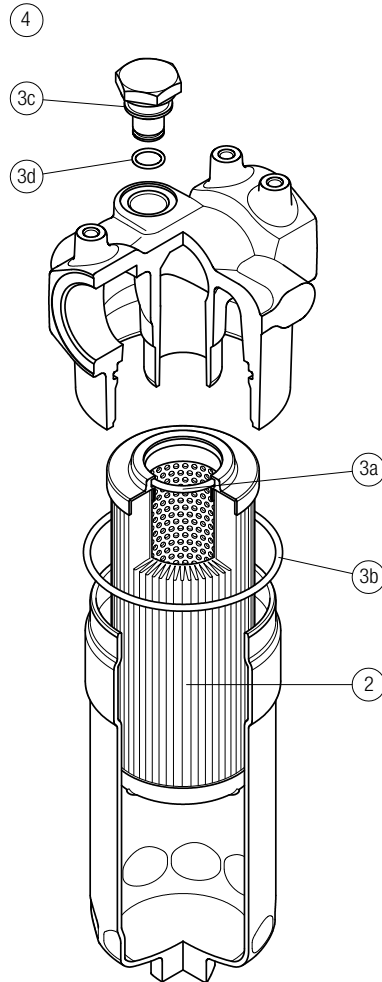


# LDP SPARE PARTS

Filter element according to DIN 24550

Order number for spare parts

LDP

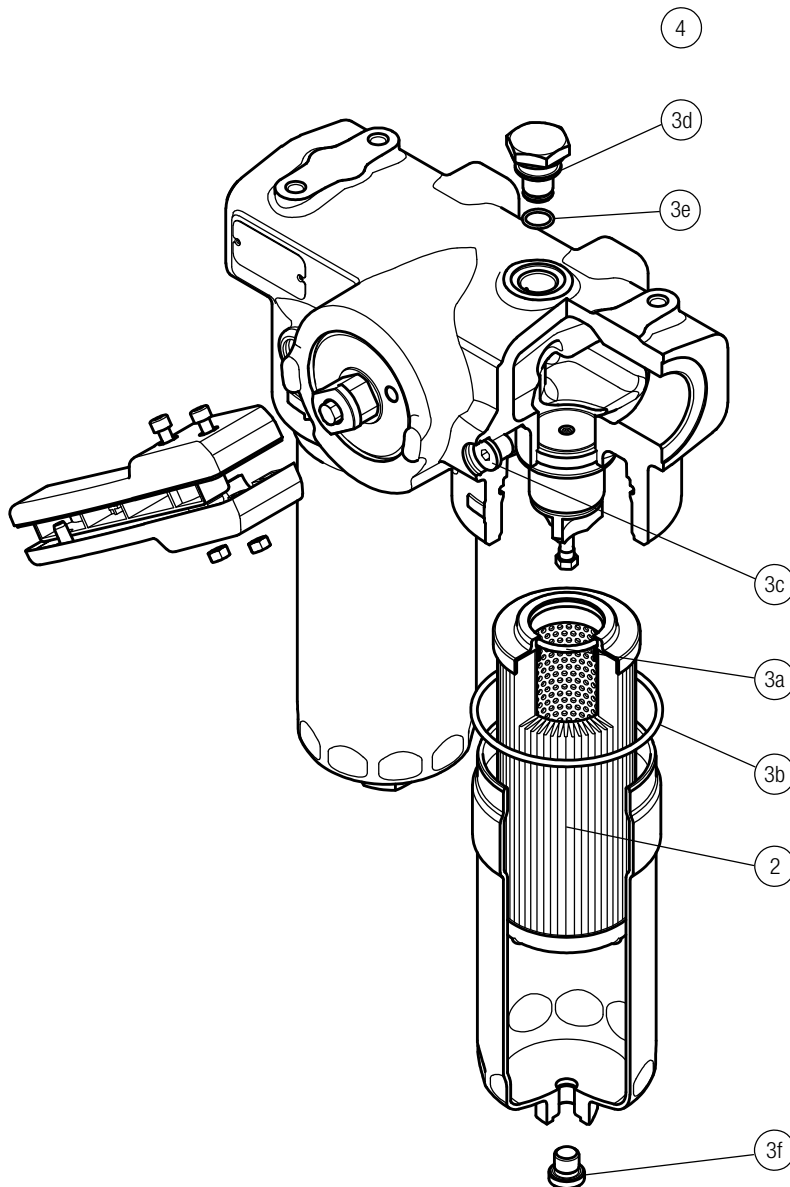


Item:	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 1 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
LDP	See order table	NBR	FPM	NBR	FPM
	<b>2</b>	<b>3</b> (3a ÷ 3d)		<b>4</b>	
		02050435	02050436	T2H	T2V



Order number for spare parts

LDD



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 2 pc.	
Filter series	Filter element	Seal Kit code number		Indicator connection plug	
LDD	See order table	NBR	FPM	NBR	FPM
	2	3 (3a ÷ 3b)		4	
		02050671	02050672	T2H	T2V



# LMP 900-901 series

Filter element according to DIN 24550

Maximum working pressure up to 3 MPa (30 bar) - Flow rate up to 2000 l/min



# LMP 900-901 GENERAL INFORMATION

## Filter element according to DIN 24550

### Description

#### Low & Medium Pressure filters

**Maximum working pressure up to 3 MPa (30 bar)**

**Flow rate up to 2000 l/min**

LMP900 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.

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

#### Available features:

- Flanged connections up to 4", for a maximum flow rate of 2000 l/min
- In line or 90° connections, to meet any type of application
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-line filtration of reservoirs
- Filtration systems
- Lubrication systems

### Technical data

#### Filter housing materials

- Head: Anodized aluminium
- Housing: Anodized aluminium
- Manifolds: Anodized aluminium
- Bypass valve: Steel

#### Pressure

- Test pressure: 4.5 MPa (45 bar)
- Burst pressure: 12 MPa (120 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 3 MPa (30 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar) ±10%
- Other opening pressures on request.

#### Number of filter elements

LMP 900-1: 1 filter element CU900

LMP 900-2: 2 filter elements CU900

#### Filter elements

Filter element according to DIN 24550

Size: 1000

#### Δp element type

- Microfibre filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

#### Connections

LMP 900: In-line Inlet/Outlet

LMP 901: 90° Inlet/Outlet

#### Seals

- Standard NBR series A
- Optional FPM series V

#### Temperature

From -25 °C to +110 °C

#### Note

LMP 900 - 901 filters are provided for vertical mounting

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

Filter series	Weights [kg]			Volumes [dm <sup>3</sup> ]		
	Length	1	2	Length	1	2
<b>LMP 900-901</b>		19.2	30.4		16	24

# GENERAL INFORMATION LMP 900-901

Filter element according to DIN 24550

FILTER ASSEMBLY SIZING  
Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMP 900	1	706	877	1264	1291	1444	1803
	2	1100	1264	1556	1573	1668	1867
LMP 901	1	715	899	1337	1369	1552	2000
	2	1147	1337	1689	1710	1828	2081

## Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ 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).

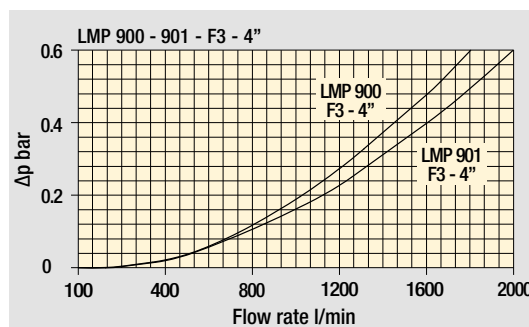
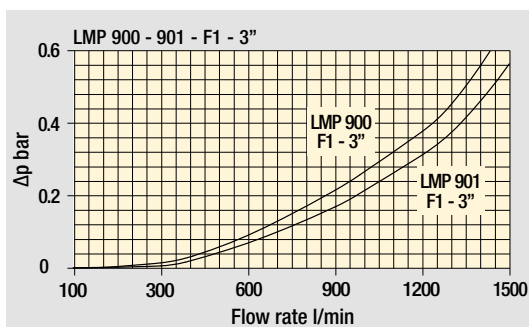
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

## LMP 900-901 Length 2

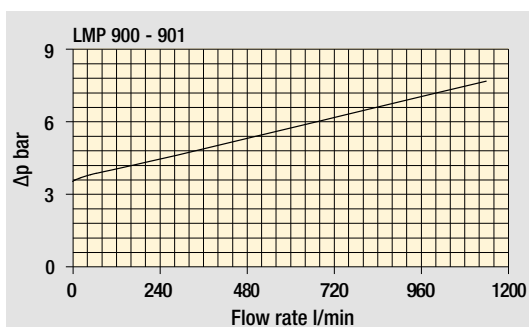


## Hydraulic symbols

Filter series	Execution S	Execution B
LMP 900-901	●	●



Pressure drop  
Filter housings  $\Delta p$  pressure drop



Bypass valve 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.

# LMP 900-901 Filter element according to DIN 24550

Designation & Ordering code

## COMPLETE FILTER

Series and size **LMP900 | LMP901** Configuration example: **LMP901** **2** **B** **A** **F2** **A10** **N** **P01**

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

Bypass valve **S** Without bypass | **B** With bypass 3.5 bar

Seals and treatments **A** NBR | **V** FPM

Connections **F1** 3" SAE 3000 psi/M | **F2** 3" SAE 3000 psi/UNC | **F3** 4" SAE 3000 psi/M | **F4** 4" SAE 3000 psi/UNC

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

Element Δp	Execution	Filter length	
		1	2
<b>N</b> 20 bar	<b>P01</b> MP Filtri standard	•	•
	<b>P02</b> Maintenance from the bottom of the housing	-	•
	<b>Pxx</b> Customized		

## FILTER ELEMENT

Element series and size **CU900** Configuration example: **CU900** **A10** **A** **N** **P01**

Length **1** Nr. 1 filter element | **2** Nr. 2 filter elements

Filtration rating (filter media)

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

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

Element Δp	Execution
	<b>Pxx</b> Customized

## CLOGGING INDICATORS

See page 478

<b>DEA</b> Electrical differential indicator	<b>DTA</b> Electronic differential indicator
<b>DEM</b> Electrical differential indicator	<b>DVA</b> Visual differential indicator
<b>DLA</b> Electrical / visual differential indicator	<b>DVM</b> Visual differential indicator
<b>DLE</b> Electrical / visual differential indicator	<b>T2</b> Plug - Filter length 1 - 2

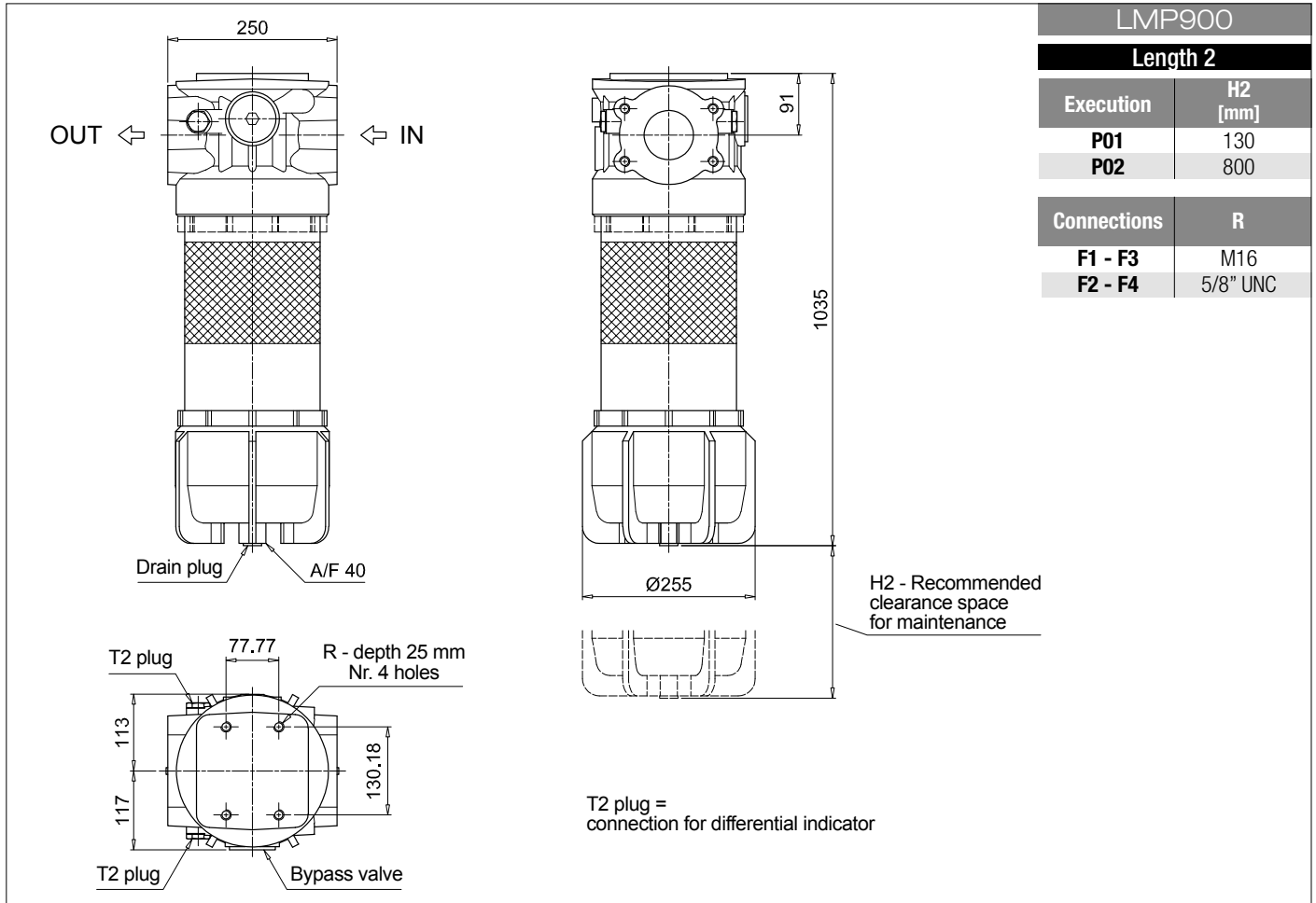
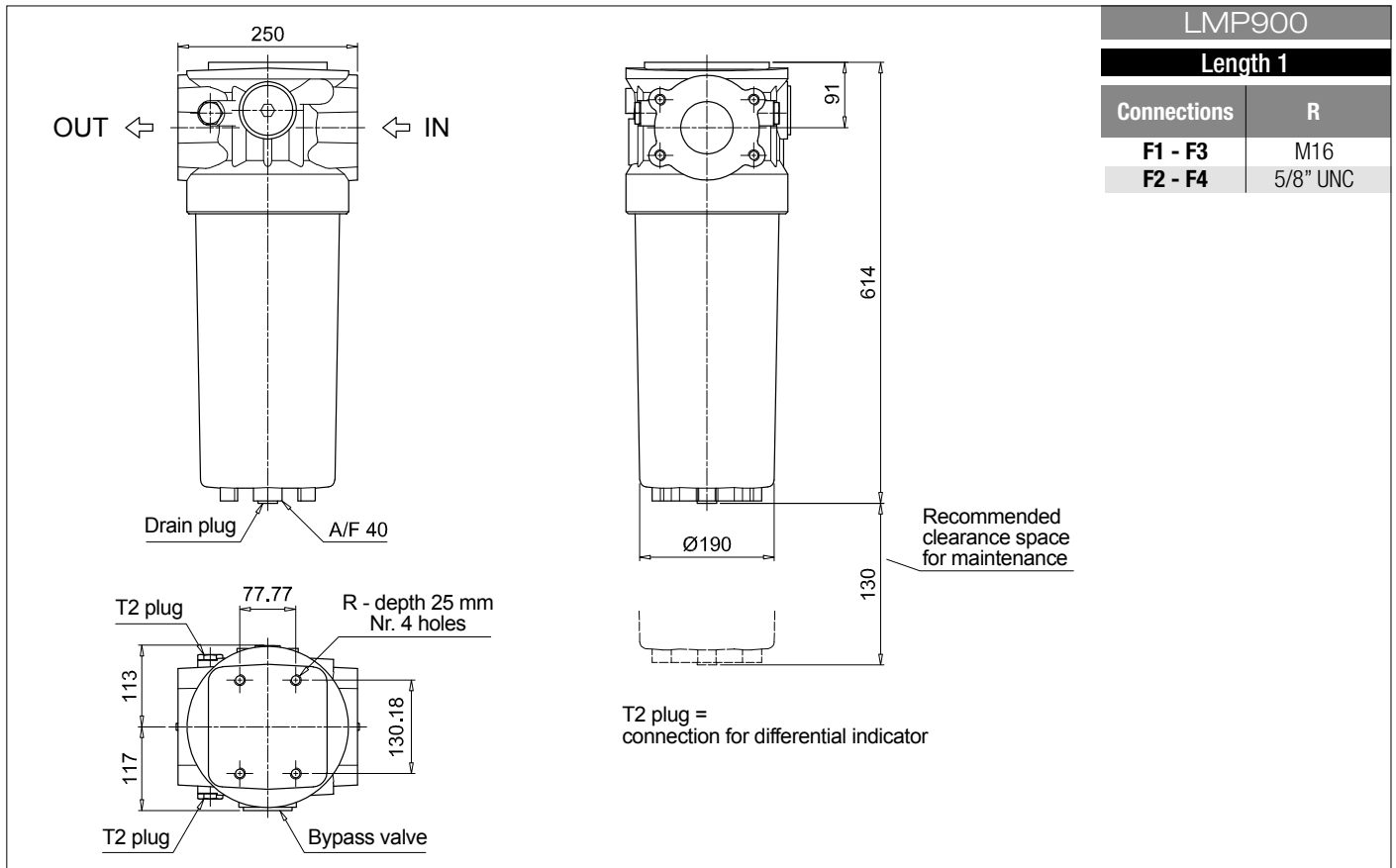
## ACCESSORIES

See page 486

**CFA** Retaining clamp - Filter length 2

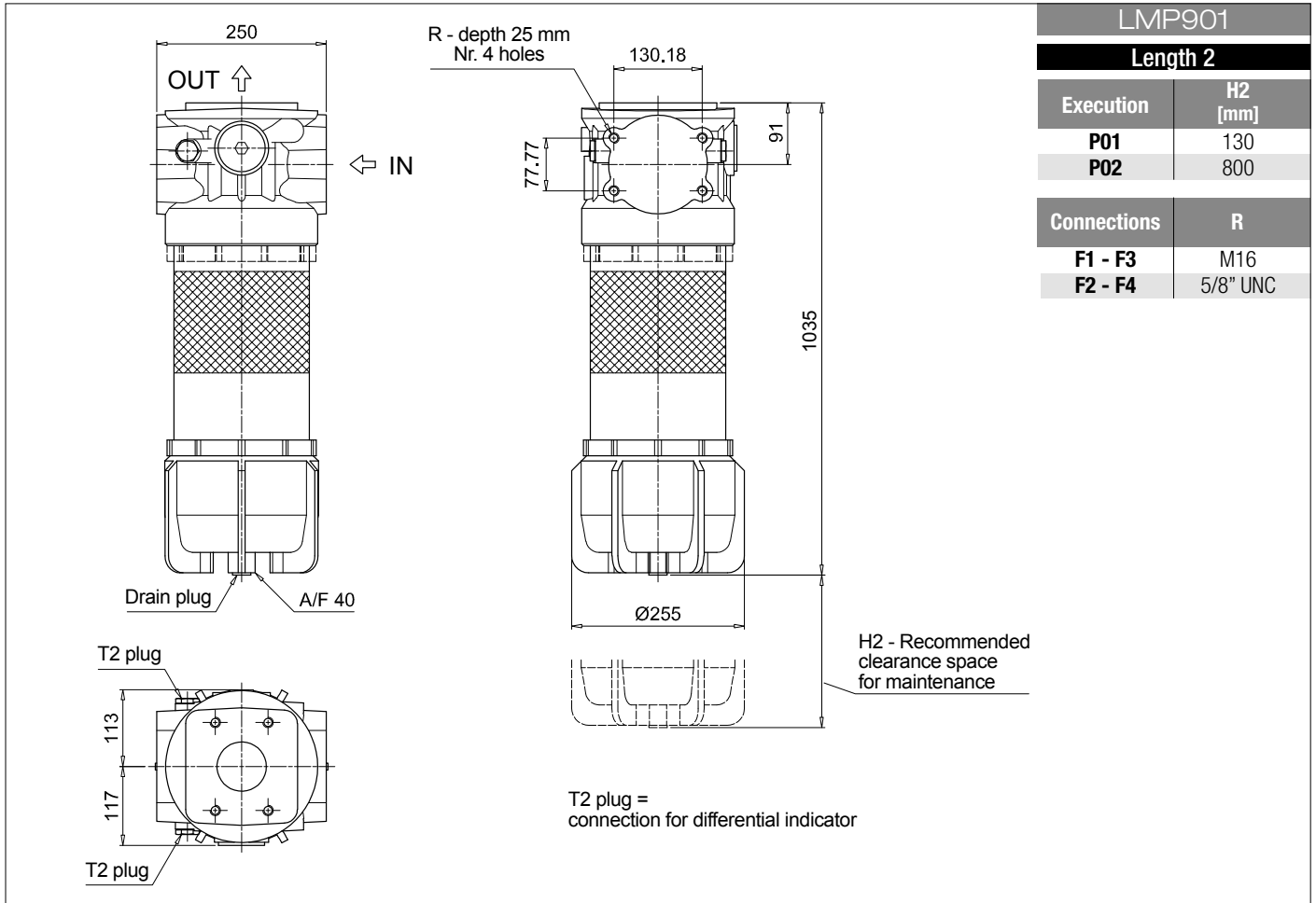
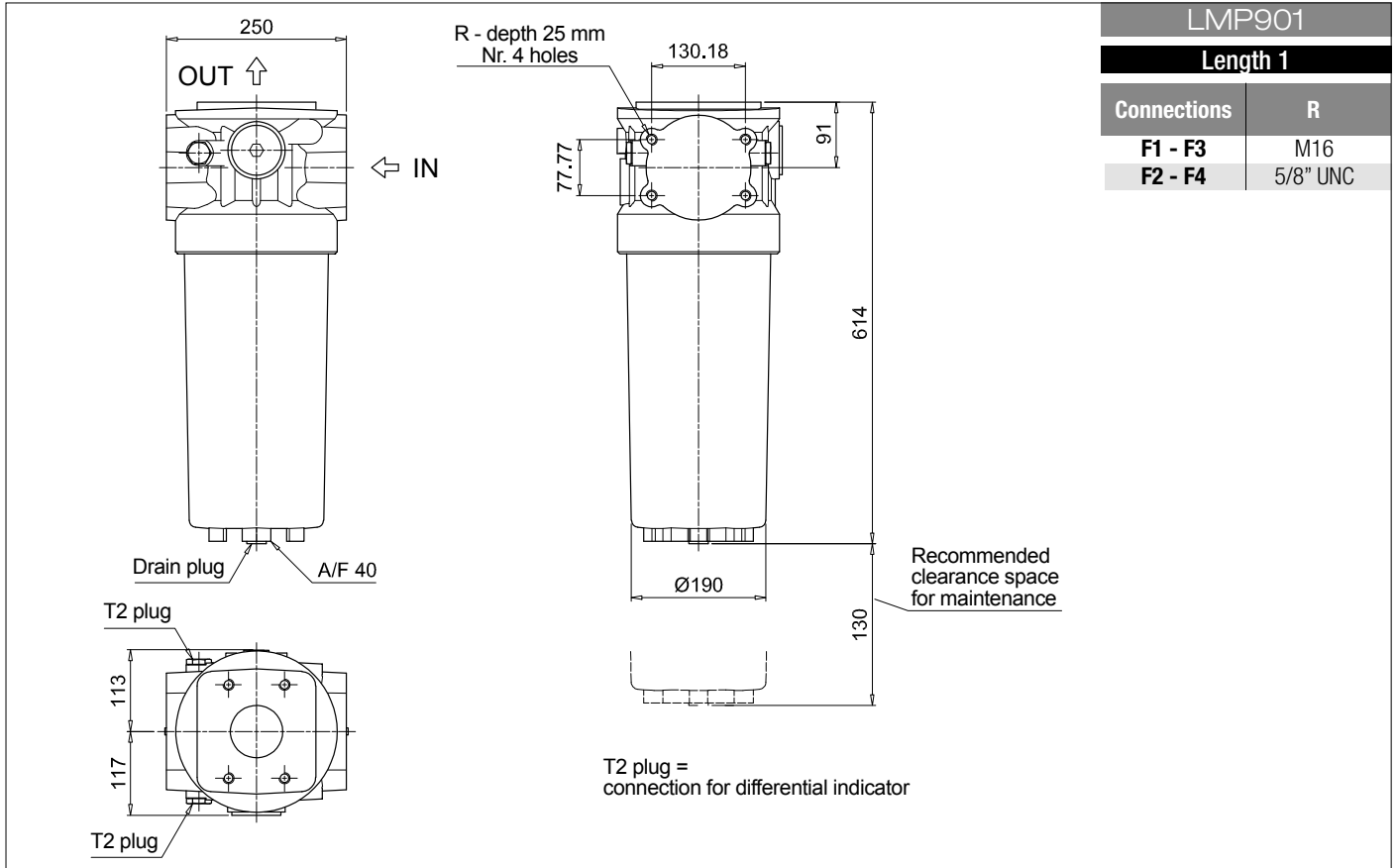
# Filter element according to DIN 24550 LMP 900-901

Dimensions



# LMP 900-901 Filter element according to DIN 24550

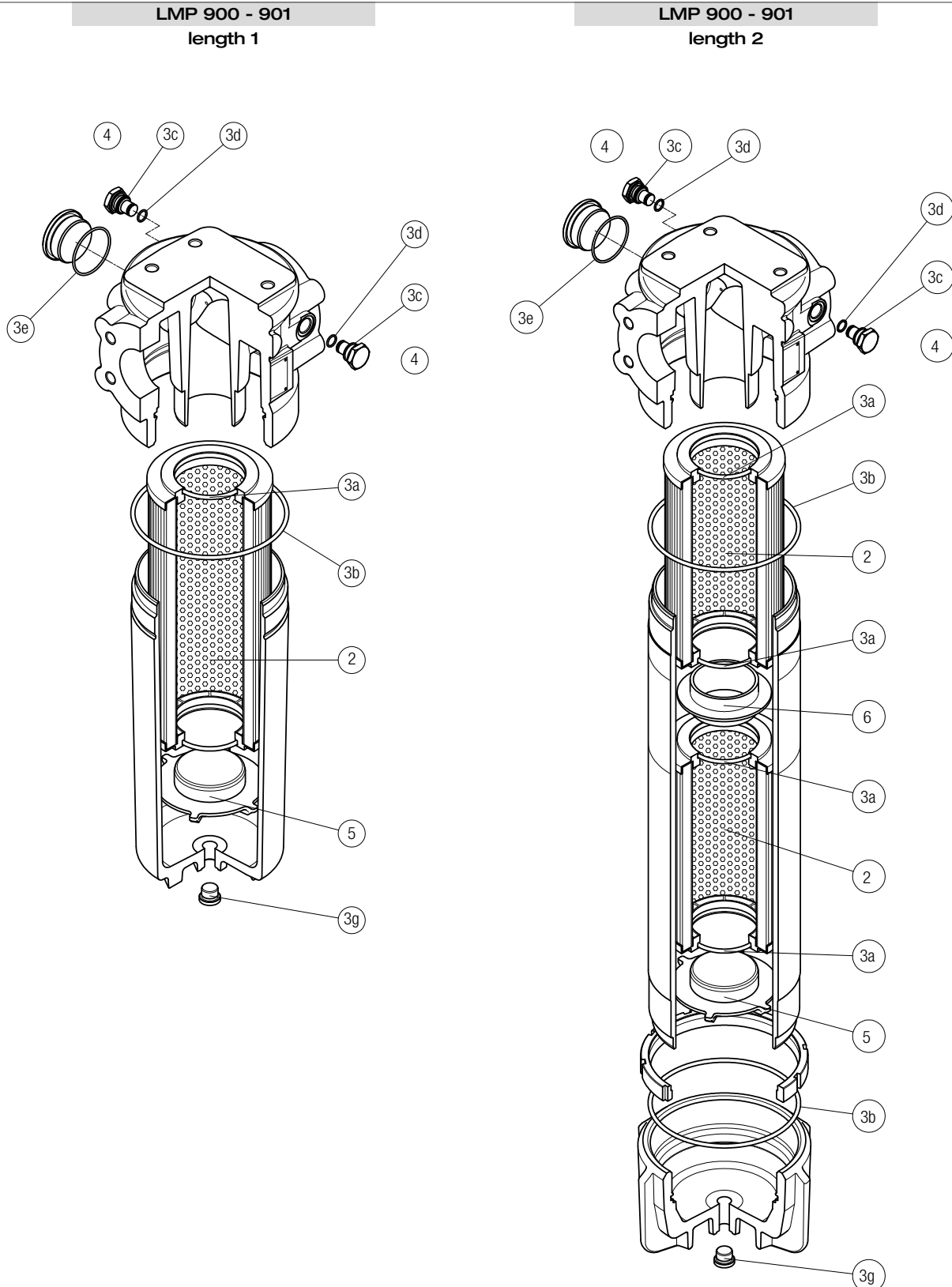
## Dimensions





# SPARE PARTS LMP 900-901

Order number for spare parts



Item:	2		3 (3a ÷ 3g)		4		5		6			
Filter series	Filter element	Seal Kit code number	Indicator connection plug	Housing spigot	Coupling spigot							
	Q.ty	Q.ty	NBR	FPM	Q.ty	NBR	FPM	Q.ty	Q.ty	Q.ty		
LMP 900-901 length 1	1 pc.	See order table	1 pc.	02050363	02050364	2 pcs.	T2H	T2V	1 pc.	01044104	-	01044099
LMP 900-901 length 2	2 pcs.	See order table	1 pc.	02050365	02050366	2 pcs.	T2H	T2V	1 pc.	01044104	1 pc.	01044099



# LMP 902-903 series

Filter element according to DIN 24550

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 3000 l/min



# LMP 902-903 GENERAL INFORMATION

## Filter element according to DIN 24550

### Description

#### Low & Medium Pressure filters

**Maximum working pressure up to 2 MPa (20 bar)**

**Flow rate up to 3000 l/min**

LMP902 and LMP903 are ranges of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.

Multiple LMP950 filters are connected to a manifold to reduce the pressure drop caused by the filter media and to increase the life time of the filter element.

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

#### Available features:

- 4" flanged connections, for a maximum flow rate of 3000 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid.  
For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

#### Common applications:

- Off-line filtration of reservoirs
- Filtration systems

### Technical data

#### Filter housing materials

- Head: Anodized aluminium
- Housing: Anodized aluminium
- Manifolds: Welded - Phosphatized steel
- Bypass valve: Steel
- Size 1000 filter elements complying with DIN 24550 standard

#### Pressure

- Test pressure: 3.5 MPa (35 bar)

#### Bypass valve

- Opening pressure 350 kPa (3.5 bar)  $\pm 10\%$
- Other opening pressures on request.

#### Number of filter elements

LMP 902: 4 filter elements CU900

LMP 903: 6 filter elements CU900

#### Filter elements

Filter element according to DIN 24550

Size: 1000

#### $\Delta p$ element type

- Microfibre filter elements - series N: 20 bar
- Fluid flow through the filter element from OUT to IN

#### Connections

LMP 902-903: In-line Inlet/Outlet

#### Seals

- Standard NBR series A
- Optional FPM series V

#### Temperature

From -25 °C to +110 °C

#### Note

LMP 902 - 903 filters are provided for vertical mounting

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

Filter series	Weights [kg]		Volumes [dm <sup>3</sup> ]	
	Length	2	Length	2
<b>LMP 902</b>		89.6		58
<b>LMP 903</b>		129.2		87

# GENERAL INFORMATION LMP 902-903

Filter element according to DIN 24550

FILTER ASSEMBLY SIZING  
Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
<b>LMP 902</b>	<b>2</b>	2217	2576	3241	3282	3506	3987
<b>LMP 903</b>	<b>2</b>	2838	3170	3720	3755	3926	4278

## Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ 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.

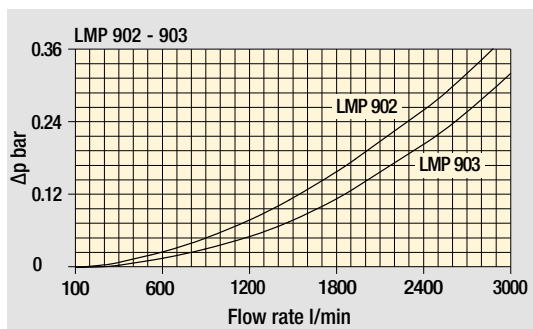
## Hydraulic symbols

Filter series	Execution S	Execution B	Execution S	Execution B
<b>LMP 902</b>	•	•	-	-
<b>LMP 903</b>	-	-	•	•

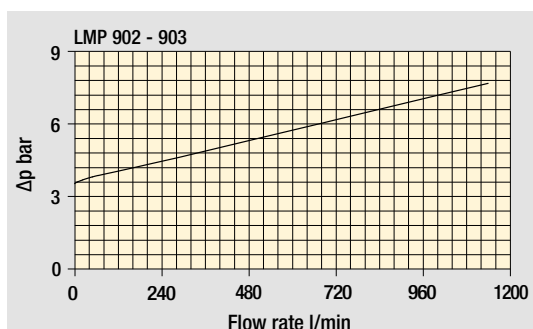
  

## Pressure drop

Filter housings  $\Delta p$  pressure drop



Bypass valve pressure drop

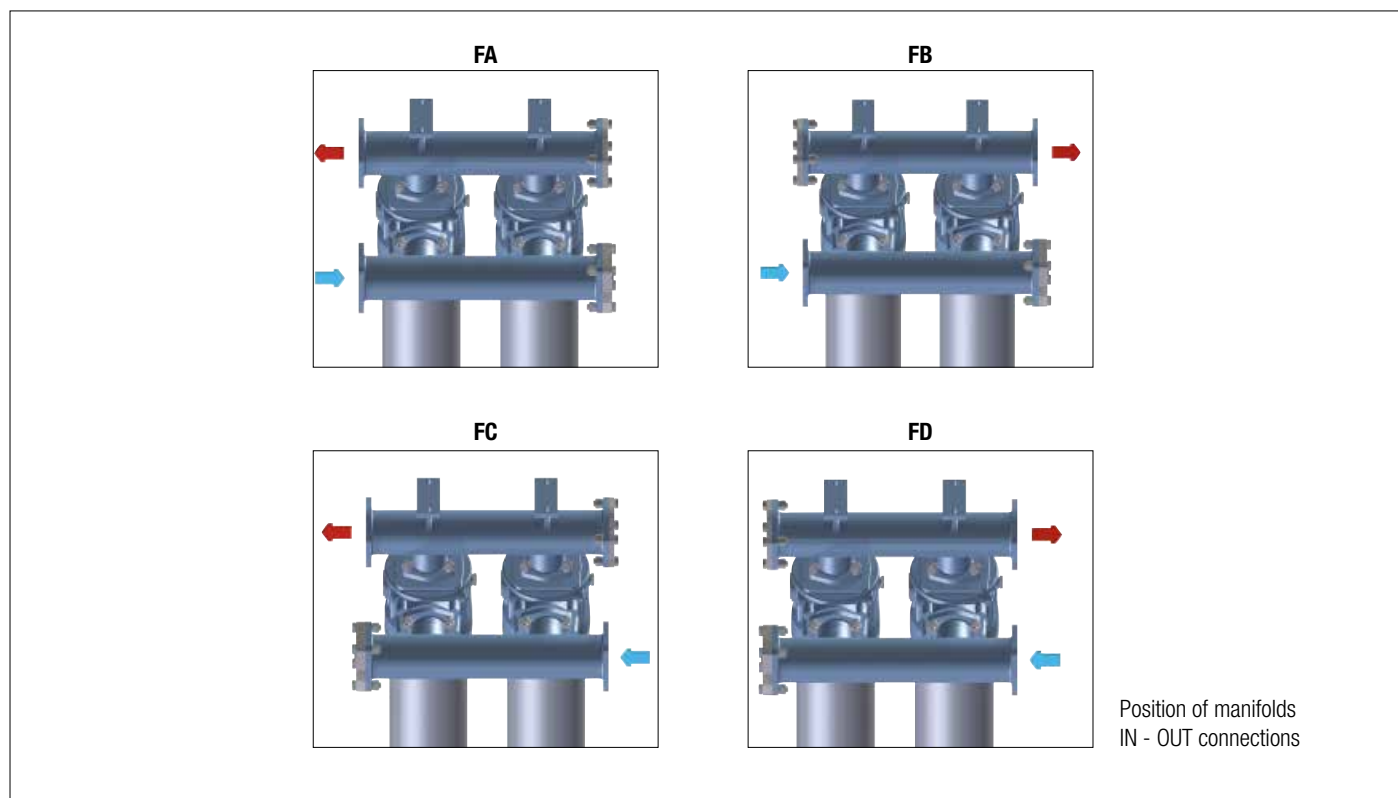


The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

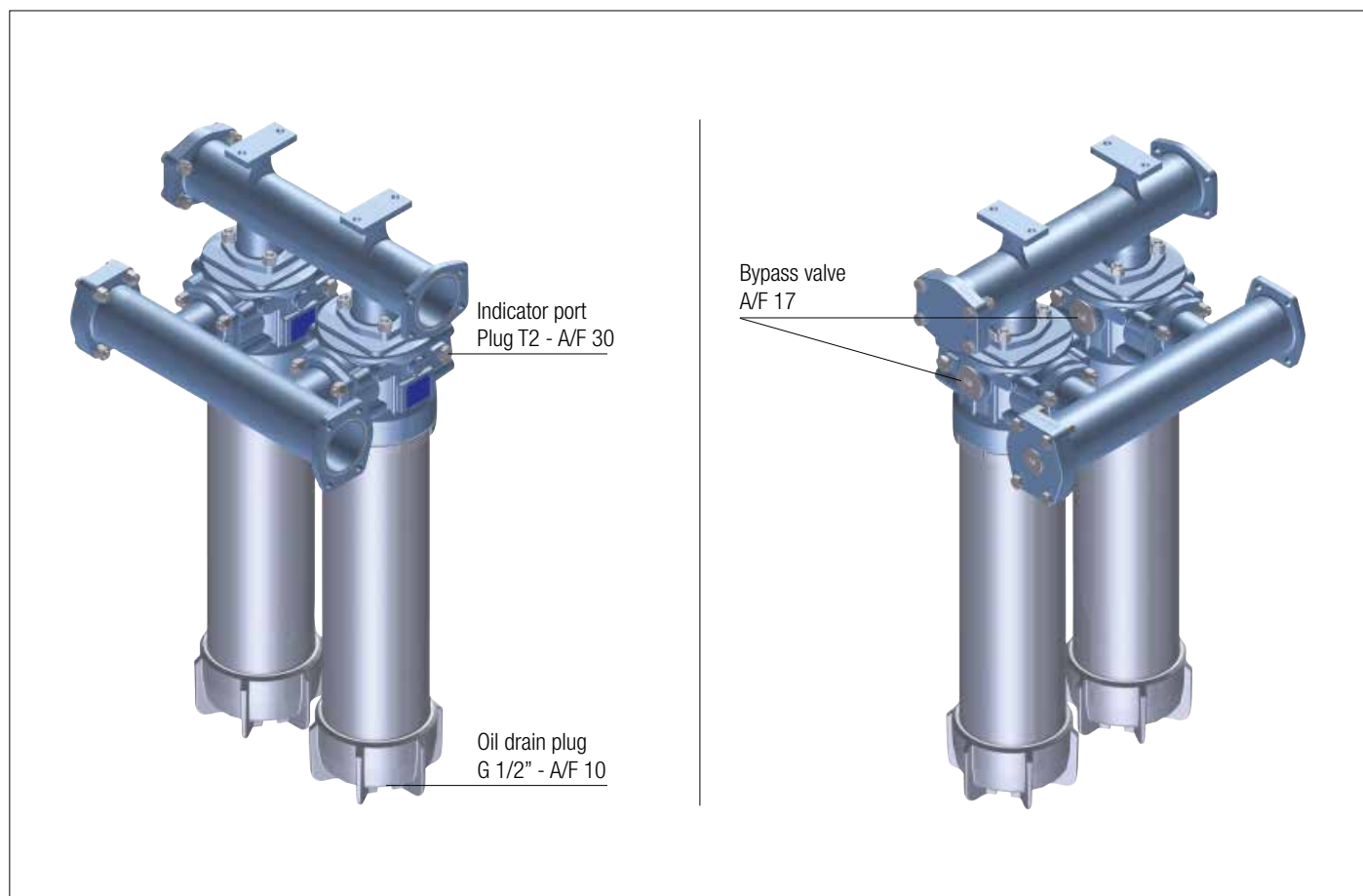
# LMP 902-903 GENERAL INFORMATION

Filter element according to DIN 24550

## Manifolds



## Focus on





# LMP 902-903 Filter element according to DIN 24550

Designation & Ordering code

## COMPLETE FILTER

Configuration example: **LMP902** **2** **B** **A** **FA** **A10** **N** **P01**

**Series and size**  
**LMP902** | **LMP903**

**Length**  
**2**

**Bypass valve**  
**S** Without bypass      **B** With bypass 3.5 bar

**Seals and treatments**  
**A** NBR  
**V** FPM

Connections	IN	OUT
<b>FA</b> 4" SAE 3000 psi	left	left
<b>FB</b> 4" SAE 3000 psi	left	right
<b>FC</b> 4" SAE 3000 psi	right	left
<b>FD</b> 4" SAE 3000 psi	right	right

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

## FILTER ELEMENT

Configuration example: **CU900** **A10** **A** **N** **P01**

**Element series and size**  
**CU900**

**Filter series and size**  
**LMP902** Nr. 4 filter elements  
**LMP903** Nr. 6 filter elements

**Filtration rating (filter media)**

<b>A03</b> Inorganic microfiber 3 µm	<b>M25</b> Wire mesh 25 µm
<b>A06</b> Inorganic microfiber 6 µm	<b>M60</b> Wire mesh 60 µm
<b>A10</b> Inorganic microfiber 10 µm	<b>M90</b> Wire mesh 90 µm
<b>A16</b> Inorganic microfiber 16 µm	
<b>A25</b> Inorganic microfiber 25 µm	

**WA025** Water absorber inorganic microfiber 25 µm

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

**Element Δp**  
**N** 20 bar

**Execution**  
**P01** MP Filtri standard  
**Pxx** Customized

## CLOGGING INDICATORS

See page 478

**DEA** Electrical differential indicator

**DEM** Electrical differential indicator

**DLA** Electrical / visual differential indicator

**DLE** Electrical / visual differential indicator

**DTA** Electronic differential indicator

**DVA** Visual differential indicator

**DVM** Visual differential indicator

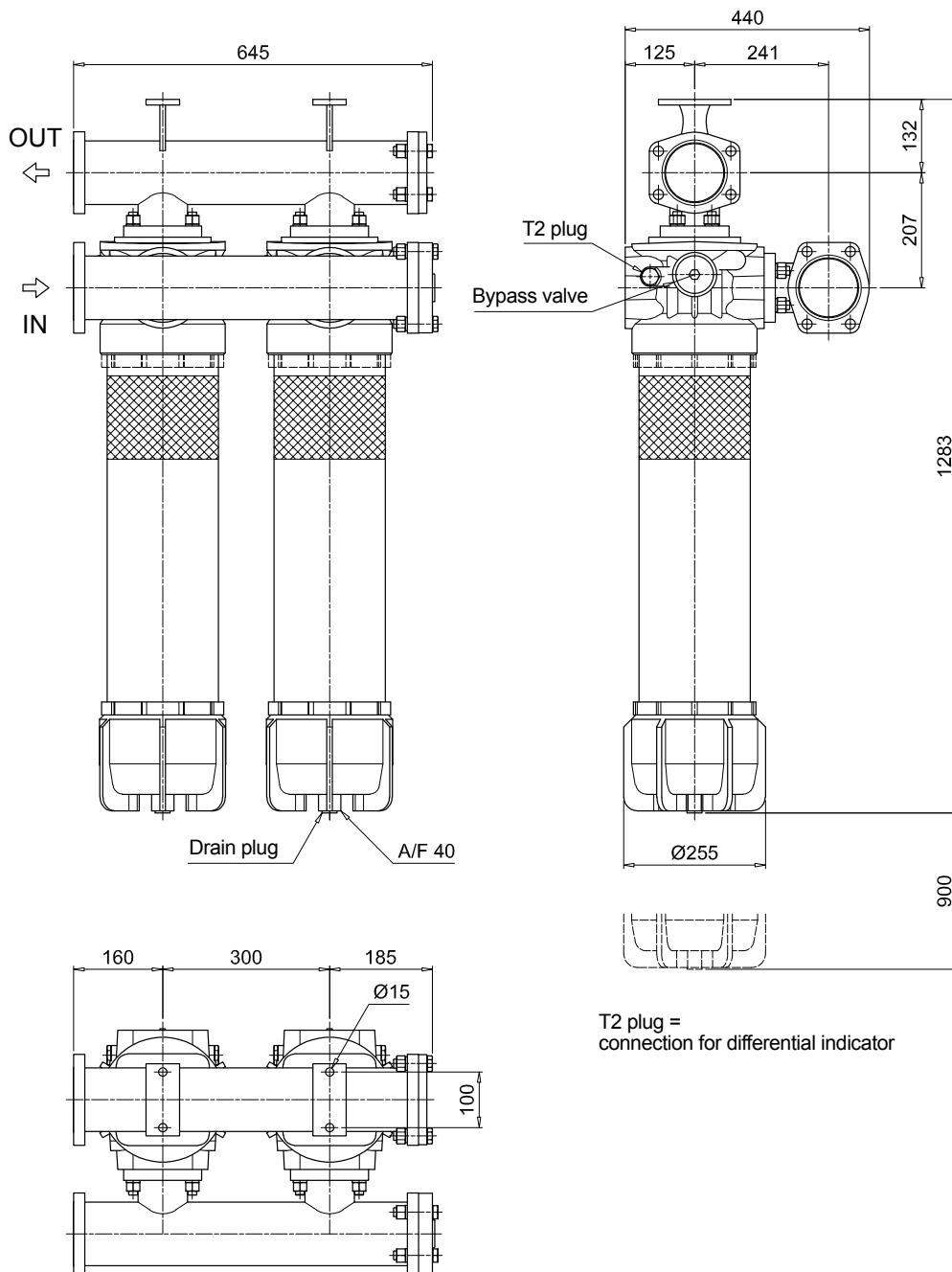
**T2** Plug



# Filter element according to DIN 24550 LMP 902-903

Dimensions

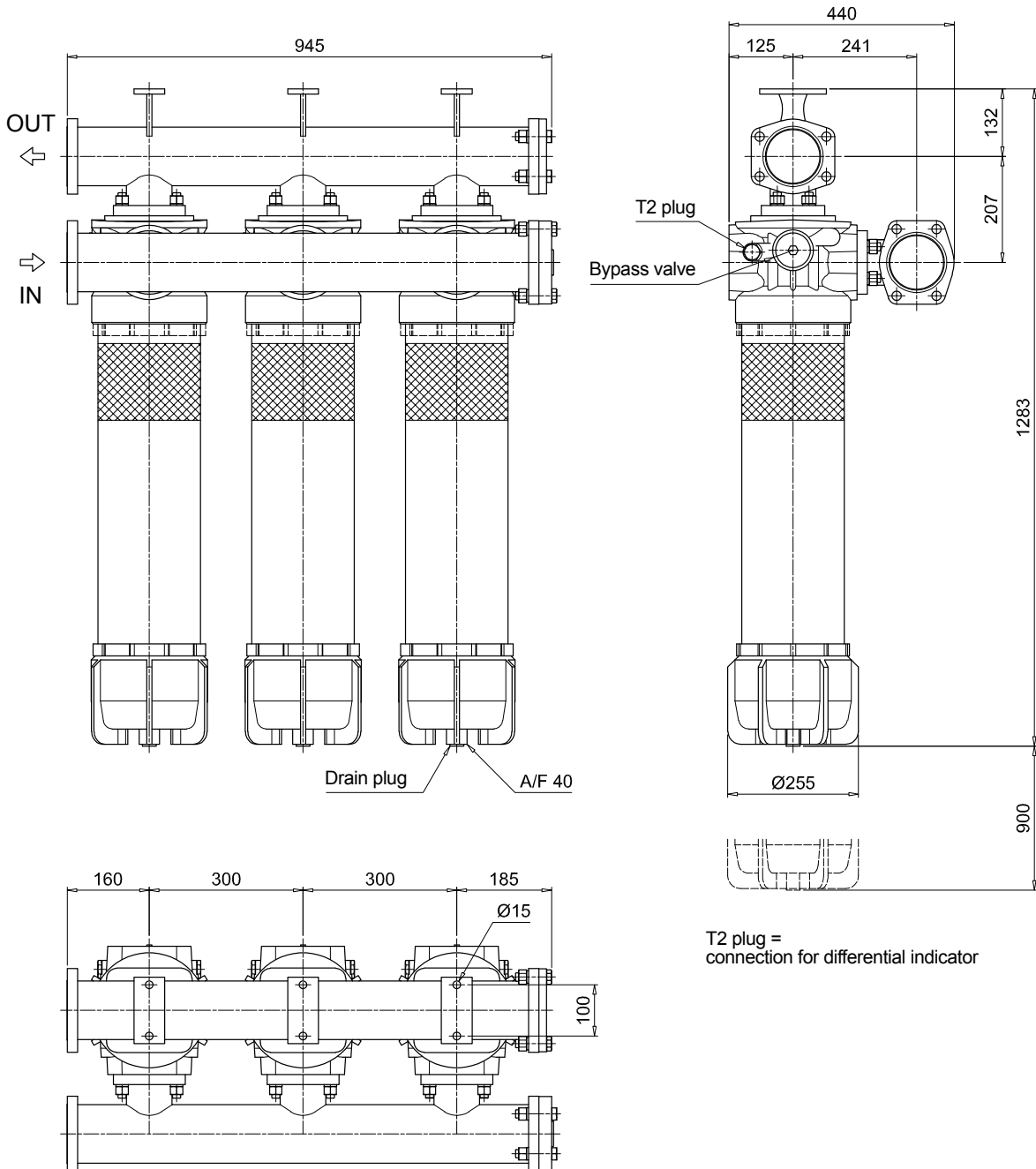
LMP902



# LMP 902-903 Filter element according to DIN 24550

## Dimensions

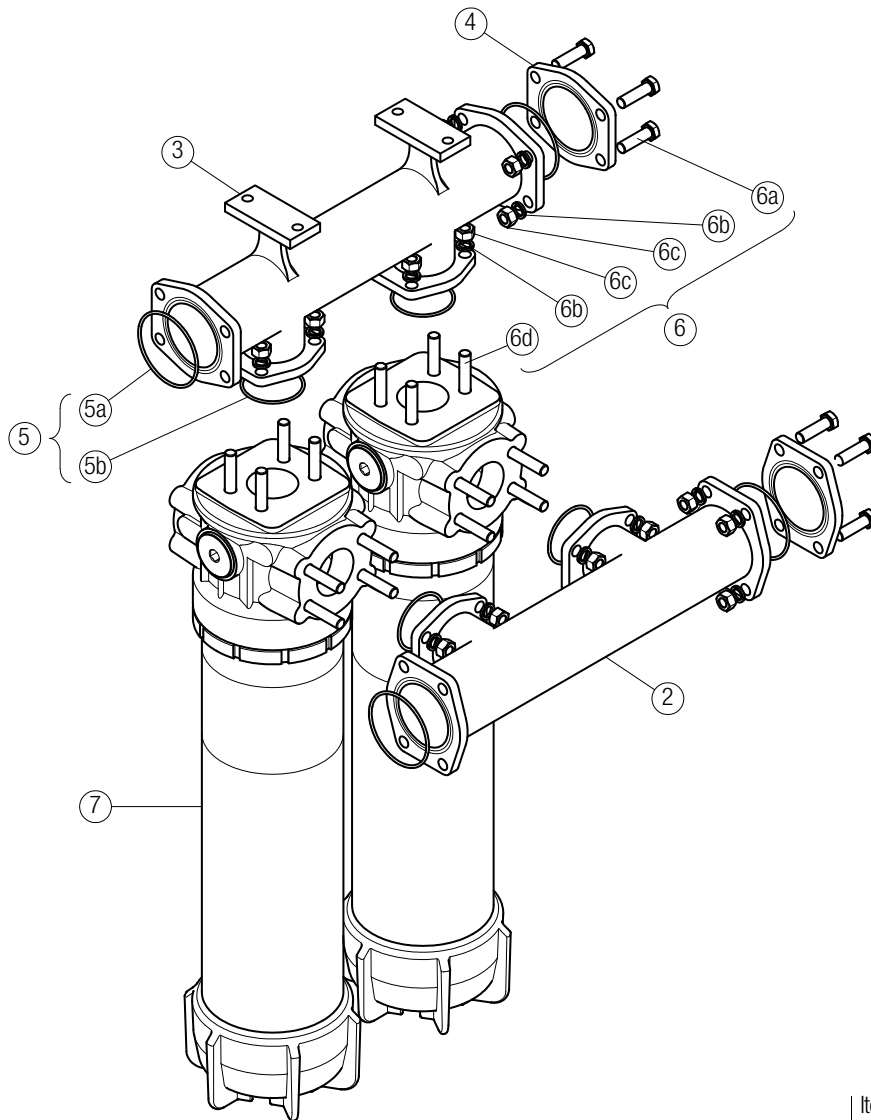
LMP903



# SPARE PARTS LMP 902-903

Order number for spare parts

LMP 902 - 903



Item 7:  
for complete filter code and  
spare parts, see  
LMP 900 - 901 series chapter

Quantity:  
- filter spare parts:  
LMP 902 - 2 pcs.  
LMP 903 - 3 pcs.

- filter seal kit:  
LMP 902 - 2 pcs.  
LMP 903 - 3 pcs.

Item:	2		3	4		5 (5a-5b)			6 (6a ÷ 6d)		7	
Filter series	Q.ty	Manifold IN	OUT	Q.ty	4" SAE 3000 psi plugged flange	Q.ty	Manifolds seal kit NBR	FPM	Q.ty	Threaded fasteners kit	Q.ty	Filter
LMP 902	1 pc.	01039270	01039271	2 pcs.	01042012	1 pc.	02050404	02050405	1 pc.	02049051	2 pcs.	LMP9012xxF1xxxNP02
LMP 903	1 pc.	01039337	01039338	2 pcs.		1 pc.	02050404	02050405	1 pc.	02049052	3 pcs.	

# Clogging indicators

## Introduction

Filter elements are efficient only if their Dirt Holding Capacity is fully exploited. This is achieved by using filter housings equipped with clogging indicators.

These devices trip when the clogging of the filter element causes an increase in pressure drop across the filter element.

The indicator is set to alarm before the element becomes fully clogged.

MP Filtri can supply indicators of the following designs:

- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

These type of devices can be provided with a visual, electrical or both signals.

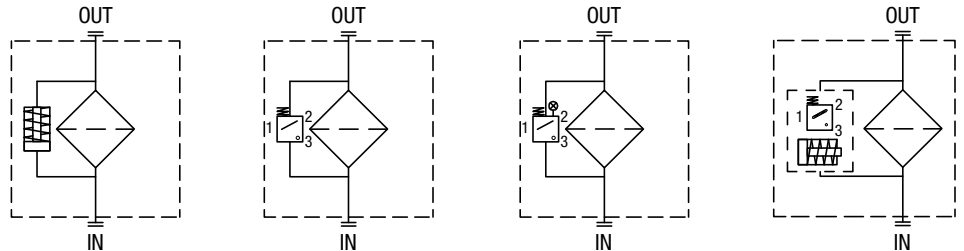
## Suitable indicator types

### DIFFERENTIAL INDICATORS

Differential indicators are used on the Pressure line to check the efficiency of the filter element. They measure the pressure upstream and downstream of the filter element (differential pressure).

Standard items are produced with special connection G 1/2" size.

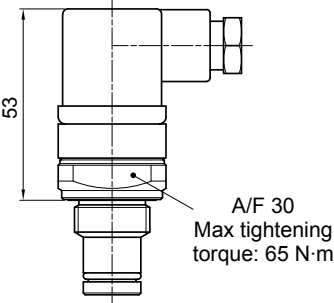
Also available in Stainless Steel models.



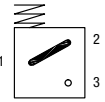
## Quick reference guide

Filter family	Filter series	Visual indicators	Electrical indicators	Electrical / Visual indicators
LOW & MEDIUM PRESSURE FILTERS	<b>ELIXIR®</b> LFEX060-080-110-160	DVS25HP01	DES25HA10P01 DES25HA30P01 DES25HA80P01	
	With bypass valve 3.5 bar LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20XX10P01 DEM20XX20P01 DEM20XX30P01 DEM20XX35P01 DTA20xF70P01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01
	<b>ELIXIR®</b> LFEX060-080-110-160	DVS40HP01	DES40HA10P01 DES40HA30P01 DES40HA80P01	
	Without bypass valve LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50XX10P01 DEM50XX20P01 DEM50XX30P01 DEM50XX35P01 DTA50xF70P01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01

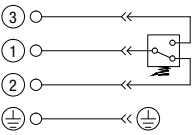
DEA*50	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DE A 20 x A 50 P01
5.0 bar $\pm 10\%$	DE A 50 x A 50 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

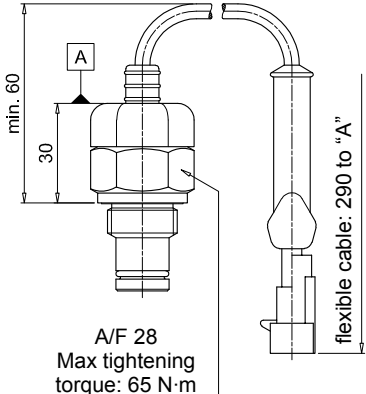
**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529  
IP69K according to ISO 20653

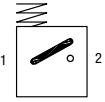
**Electrical data**

- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

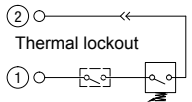
DEM*10	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DE M 20 x x 10 P01
5.0 bar $\pm 10\%$	DE M 50 x x 10 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

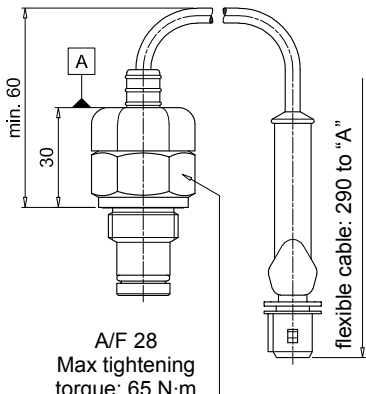
**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

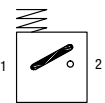
**Electrical data**

- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

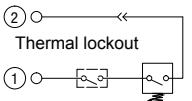
DEM*20	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DE M 20 x x 20 P01
5.0 bar $\pm 10\%$	DE M 50 x x 20 P01



**Hydraulic symbol**



**Electrical symbol**



**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

**Electrical data**

- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

# DIFFERENTIAL INDICATORS

## Dimensions

DEM*30	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DE M 20 x x 30 P01
5.0 bar $\pm 10\%$	DE M 50 x x 30 P01
<p><b>Hydraulic symbol</b></p>	
<p><b>Electrical symbol</b></p>	
<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Base: Black polyamide</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR - FPM</li> </ul>	
<p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 420 bar</li> <li>- Proof pressure: 630 bar</li> <li>- Burst pressure: 1260 bar</li> <li>- Working temperature: From -25 °C to +110 °C</li> <li>- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree protection: IP66 according to EN 60529</li> </ul>	
<p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: Deutsch DT-04-2-P</li> <li>- Resistive load: 0.2 A / 115 Vdc</li> <li>- Switching type: Normally open contacts (NC on request)</li> <li>- Thermal lockout: Normally open up to 30 °C (option "F")</li> </ul>	

DEM*35	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm 10\%$	DE M 20 x x 35 P01
5.0 bar $\pm 10\%$	DE M 50 x x 35 P01
<p><b>Hydraulic symbol</b></p>	
<p><b>Electrical symbol</b></p>	
<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Base: Black polyamide</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR - FPM</li> </ul>	
<p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 420 bar</li> <li>- Proof pressure: 630 bar</li> <li>- Burst pressure: 1260 bar</li> <li>- Working temperature: From -25 °C to +110 °C</li> <li>- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree protection: IP66 according to EN 60529</li> </ul>	
<p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: Deutsch DT-04-3-P</li> <li>- Resistive load: 0.2 A / 115 Vdc</li> <li>- Switching type: SPDT contact</li> <li>- Thermal lockout: Normally open up to 30 °C (option "F")</li> </ul>	

DES*10	
<b>Electrical Differential Indicator</b>	
Settings	Ordering code
2.5 bar $\pm 10\%$	DE S 25 HA 10 P01
4.0 bar $\pm 10\%$	DE S 40 HA 10 P01
<p><b>Hydraulic symbol</b></p>	
<p><b>Electrical symbol</b></p>	
<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>- Body: Brass</li> <li>- Internal parts: Brass - Polyamide</li> <li>- Contacts: Silver</li> <li>- Seal: HNBR</li> </ul>	
<p><b>Technical data</b></p> <ul style="list-style-type: none"> <li>- Max working pressure: 16 bar</li> <li>- Proof pressure: 24 bar</li> <li>- Burst pressure: 48 bar</li> <li>- Working temperature: From -25 °C to +110 °C</li> <li>- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943</li> <li>- Degree protection: IP67 according to EN 60529</li> </ul>	
<p><b>Electrical data</b></p> <ul style="list-style-type: none"> <li>- Electrical connection: AMP Superseal series 1.5</li> <li>- Resistive load: 0.2 A / 24 Vdc</li> <li>- Switching type: Normally open contacts (NC on request)</li> </ul>	



# DIFFERENTIAL INDICATORS

## Dimensions

DLA*71	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar ±10%	DLA 20 x A 71 P01
5.0 bar ±10%	DLA 50 x A 71 P01

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529  
IP69K according to ISO 20653

**Electrical data**

- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps: 24 Vdc
- Resistive load: 0.4 A / 24 Vdc

DLE*A50	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar ±10%	DL E 20 x A 50 P01
5.0 bar ±10%	DL E 50 x A 50 P01

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

**Electrical data**

- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps

DLE*F50	
<b>Electrical/Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar ±10%	DL E 20 x F 50 P01
5.0 bar ±10%	DL E 50 x F 50 P01

**Hydraulic symbol**

**Electrical symbol**

**Materials**

- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids  
HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

**Electrical data**

- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Thermal lockout setting: +30 °C



DTA*70	
<b>Electronic Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DT A 20 x x 70 P01
5.0 bar $\pm$ 10%	DT A 50 x x 70 P01

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A/F 30  
Max tightening torque: 50 N·m

**Hydraulic symbol**

**Materials**

- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

**Electrical data**

- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

**Electrical symbol**

①	○	○	+24 Vdc
②	○	○	4 ÷ 20 mA
③	○	○	75% - N.O. Digital output
④	○	○	100% - N.O. Digital output
⑤	○	○	0 Vdc

DVA	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DV A 20 x P01
5.0 bar $\pm$ 10%	DV A 50 x P01

39

Green / Red clogging indicator

A/F 28  
Max tightening torque: 65 N·m

**Hydraulic symbol**

**Materials**

- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

**Technical data**

- Reset: Automatic reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

DVM	
<b>Visual Differential Indicator</b>	
Settings	Ordering code
2.0 bar $\pm$ 10%	DV M 20 x P01
5.0 bar $\pm$ 10%	DV M 50 x P01

34

Red clogging indicator

A/F 30  
Max tightening torque: 65 N·m

**Hydraulic symbol**

**Materials**

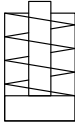
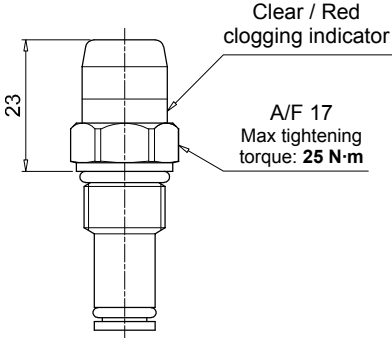
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

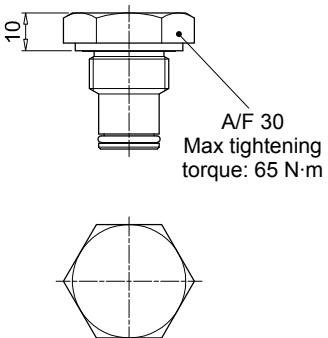
**Technical data**

- Reset: Manual reset
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

# DIFFERENTIAL INDICATORS

## Dimensions

DVS		Hydraulic symbol	Materials
<b>Visual Differential Indicator</b>			
<b>Settings</b>	<b>Ordering code</b>		<b>Materials</b> - Body: Brass - Internal parts: Brass - Polyamide - Contacts: Silver - Seal: HNBR
2.5 bar $\pm 10\%$	DV S 25 H P01		
4.0 bar $\pm 10\%$	DV S 40 H P01		
		<b>Technical data</b> - Reset: Automatic reset - Max working pressure: 16 bar - Proof pressure: 24 bar - Burst pressure: 48 bar - Working temperature: From -25 °C to +110 °C - Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943 - Degree protection: IP67 according to EN 60529	

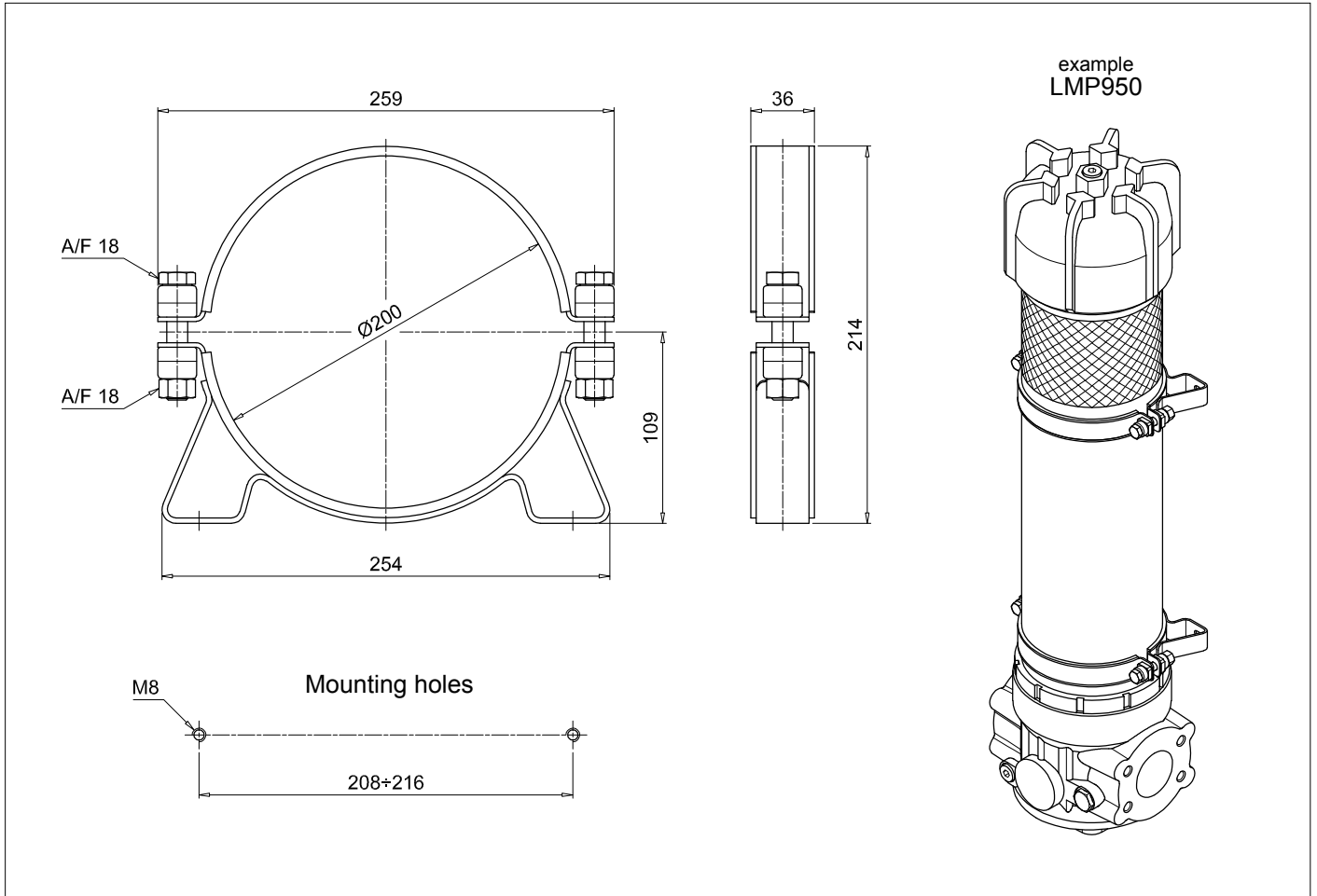
T2		Materials
<b>Indicator plug</b>		
<b>Seal</b>	<b>Ordering code</b>	<b>Materials</b> - Body: Phosphatized steel - Seal: HNBR / FPM
HNBR	T2 H	
FPM	T2 V	
		

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS										
<b>Series</b>		Configuration example 1:								P01
<b>DE</b>	Electrical differential indicator	DE	M	20	H	F	50			
<b>DL</b>	Electrical/Visual differential indicator	Configuration example 2:								P01
		DL	E	50	V	A	71			
<b>DT</b>	Electronic differential indicator	Configuration example 3:								P01
		DT	A	20	H	F	70			
<b>DV</b>	Visual differential indicator	Configuration example 4:								P01
		DV	M	50	V					
<b>Type</b>		DE	DL	DT	DV					
<b>A</b>	Standard type	•	•	•	<b>A</b>	With automatic reset				
<b>M</b>	With wired electrical connection	•	-	-	<b>M</b>	With manual reset				
<b>E</b>	For high power supply	-	•	-	<b>S</b>	With automatic reset				
<b>S</b>	Compact version	•	-	-						
<b>Pressure setting</b>										
<b>20</b>	2.0 bar									
<b>25</b>	2.5 bar									
<b>40</b>	4.0 bar									
<b>50</b>	5.0 bar									
<b>Seals</b>										
<b>H</b>	HNBR									
<b>V</b>	FPM									
<b>Thermostat</b>										
<b>A</b>	Without	•	•	•	•	-	-			
<b>F</b>	With thermostat	-	•	-	•	•	-			
<b>Electrical connections</b>										
<b>10</b>	Connection AMP Superseal series 1.5	-	•	-	-	-	-			
<b>20</b>	Connection AMP Timer Junior	-	•	-	-	-	-			
<b>30</b>	Connection Deutsch DT-04-2-P	-	•	-	-	-	-			
<b>35</b>	Connection Deutsch DT-04-3-P	-	•	-	-	-	-			
<b>50</b>	Connection EN 175301-803	•	-	-	•	-	-			
<b>51</b>	Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	•	-	-	-			
<b>52</b>	Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	•	-	-	-			
<b>70</b>	Connection IEC 61076-2-101 D (M12)	-	-	-	-	•	-			
<b>71</b>	Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	•	-	-	-			
<b>Option</b>										
<b>P01</b>	MP Filtri standard									
<b>Pxx</b>	Customized									

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG				
<b>Series</b>		Configuration example	T2	H
<b>T2</b>	Indicator plug			
<b>Seals</b>				
<b>H</b>	HNBR			
<b>V</b>	FPM			

# Accessories

## RETAINING CLAMP



**Series**  
**CFA** Retaining clamp

Configuration example: **CFA** **20** **M** **P01**

**Size**  
**20**

**Screw**  
**M** Metric

**Execution**  
**P01** MP Filtri standard





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