

HYDRAULIC FILTRATION PRODUCTS

LOW & MEDIUM PRESSURE FILTERS



PASSION TO PERFORM





A WORLDWIDE LEADER IN THE FIELD OF HYDRAULIC FILTRATION EQUIPMENT.

Our company started life in 1964, when Bruno Pasotto decided to attempt to cater for the requests of a market still to be fully explored, with the study, design, development, production and marketing of a vast range of filters for hydraulic equipment, capable of satisfying the needs of manufacturers in all sectors. The quality of our products, our extreme competitiveness compared with major international producers and our constant activities of research, design and development has made us a worldwide leader in the field of hydraulic circuit filtering. Present for over 50 years in the market, we have played a truly decisive role in defining our sector, and by now we are a group capable of controlling our entire chain of production, monitoring all manufacturing processes to guarantee superior quality standards and to provide concrete solutions for the rapidly evolving needs of customers and the market.

MARKET LEADER



Our work is based on a skillful interaction between advanced technology and fine workmanship, **customizing products according to specific market requests**, focusing strongly on innovation and quality, and following every step in the manufacturing of both standard and special products, fully respecting customer expectations.



Our customer-oriented philosophy, which enables us to satisfy all customer requests **rapidly and with personalized products**, makes us a **dynamic and flexible enterprise**. The possibility of constantly controlling and monitoring the entire production process is essential to allow us to guarantee the quality of our products.

WORLDWIDE PRESENCE

Our foreign Branches enable us to offer a diversified range of products that allow us to successfully face the aggressive challenge of international competition, and also to maintain a stable presence at a local level.

The Group boasts **8** business branches



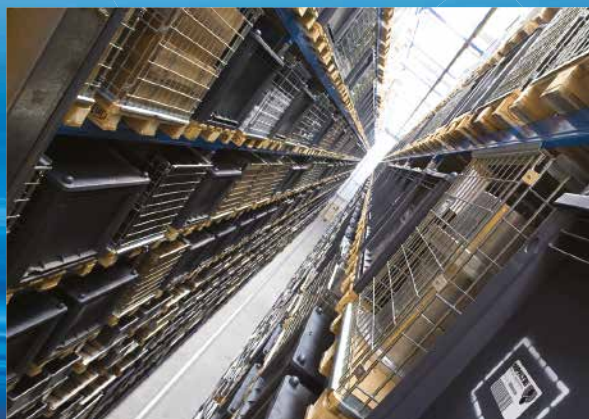
TECHNOLOGY

Our constant **quest for excellence in quality and technological innovation** allows us to offer only the best solutions and services for applications in many fields, including general industry, test rigs, lubrication, heavy engineering, renewable energies, naval engineering, offshore engineering, aviation systems, emerging technologies and mobile plant (i.e. tractors, excavators, concrete pumps, platforms).



AND PRODUCTION

Our high level of technological expertise means **we can rely entirely on our own resources, without resorting to external providers.** This in turn enables us to satisfy a growing number of customer requests, also exploiting our constantly updated range of machines and equipment, featuring **fully-automated workstations** capable of **24-hour production.**





SUCTION FILTERS

Flow rates
up to 875 l/min

- Mounting:
- Tank immersed
 - In-Line
 - In tank with shut off valve
 - In tank with flooded suction

RETURN FILTERS

Flow rates
up to 3000 l/min

- Pressure
up to 20 bar
- Mounting:
- In-Line
 - Tank top
 - In single and duplex designs

RETURN / SUCTION FILTERS

Flow rates
up to 300 l/min

- Pressure
up to 80 bar
- Mounting:
- In-Line
 - Tank top

SPIN-ON FILTERS

Flow rates
up to 365 l/min

- Pressure
up to 35 bar
- Mounting:
- In-Line
 - Tank top

LOW & MEDIUM PRESSURE FILTERS

Flow rates
up to 3000 l/min

- Pressure
up to 80 bar
- Mounting:
- In-Line
 - Parallel manifold version
 - In single and duplex designs

HIGH PRESSURE FILTERS

Flow rates
up to 750 l/min

- Pressure from 110 bar
up to 560 bar
- Mounting:
- In-Line
 - Manifold
 - In single and duplex designs

PRODUCT RANGE

MP Filtri can offer a vast and articulated range of products for the global market, suitable for all industrial sectors using hydraulic equipment.

This includes filters (suction, return, return/suction, spin-on, pressure, stainless steel pressure) and structural components (motor/pump bell-housings, transmission couplings, damping rings, foot brackets, aluminium tanks, cleaning covers).

We can provide all the skills and solutions required by the modern hydraulics industry to monitor contamination levels and other fluid conditions.

Mobile filtration units and a full range of accessories allow us to supply everything necessary for a complete service in the hydraulic circuits.



STAINLESS STEEL HIGH PRESSURE FILTERS

Flow rates up to 125 l/min
Pressure from 320 bar up to 1000 bar

- Mounting:
- In-Line
 - Manifold
 - In single and duplex designs

CONTAMINATION MONITORING PRODUCTS

- Online, in-line particle counters
- Off-line bottle sampling products
- Fully calibrated using relevant ISO standards
- A wide range of variants to support fluid types and communication protocols

MOBILE FILTRATION UNITS

Flow rates from 15 l/min up to 200 l/min

POWER TRANSMISSION PRODUCTS

- Aluminium bell-housings for motors from 0.12 kW to 400 kW
- Couplings in Aluminium Cast Iron - Steel
- Damping rings
- Foot bracket
- Aluminium tanks
- Cleaning covers

TANK ACCESSORIES

- Oil filler and air breather plugs
- Optical and electrical level gauges
- Pressure gauge valve selectors
- Pipe fixing brackets
- Pressure gauges

HYDRAULIC FILTRATION PRODUCTS

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28	page	SUCTION FILTERS			up to Q_{max}
					l/min gpm
31	STR & MPA - MPM	Submerged suction filter, with bypass or magnetic column			875 231
39	SF2 250 - 350	Semi-submerged positive head suction filter, low flow rate			160 42
47	SF2 500	Semi-submerged positive head suction filter, high flow rate			800 211
57	CLOGGING INDICATORS				

60	page	RETURN FILTERS		up to P_{max}	up to Q_{max}
			bar psi	l/min gpm	
63	MPFX	Tank top semi-immersed filter, standard filter element disassembly	8 116	750 198	
91	MPLX	Tank top semi-immersed filter, standard filter element disassembly	10 145	1800 476	
99	MPTX	Tank top semi-immersed filter, easy filter element disassembly	8 116	300 79	
117	MFBX	Bowl assembly	8 116	500 132	
125	MPF	Tank top semi-immersed filter, standard filter element disassembly	8 116	750 198	
153	MPT	Tank top semi-immersed filter, easy filter element disassembly	8 116	300 79	
171	MFB	Bowl assembly	8 116	500 132	
179	MPH	Tank top semi-immersed filter, standard filter element disassembly	10 145	3000 793	
203	MPI	Tank top semi-immersed filter, standard filter element disassembly	10 145	3000 793	
215	FRI	Tank top semi-immersed filter, easy filter element disassembly, it can be used also as in-line filter	20 290	1500 396	
231	RF2	Semi-immersed under-head filter, easy filter element disassembly	20 290	350 92	
238	CLOGGING INDICATORS				
248	ACCESSORIES				

250	page	RETURN / SUCTION FILTERS		up to P_{max}	up to Q_{max}
			bar psi	l/min gpm	
253	MRSX	Unique TANK TOP filter for mobile machinery, with combined filtration on return and suction to the inlet at the hydrostatic transmissions in closed circuit	10 145	300 79	
265	LMP 124 MULTIPORT	Unique IN-LINE filter for mobile machinery, with combined filtration on return and suction to the inlet at the hydrostatic transmissions in closed circuit	80 1160	200 53	
273	CLOGGING INDICATORS				

286	page	SPIN-ON FILTERS		up to P_{max}	up to Q_{max}
			bar psi	l/min gpm	
289	MPS	Low pressure filter, available with single cartridge (CS) for in-line or flange mounting or with two cartridge on the same axis on the opposite sides	12 174	365 96	
305	MSH	In-line low and medium pressure filter available with single cartridge (CH)	35 508	195 52	
311	CLOGGING INDICATORS				

page	LOW & MEDIUM PRESSURE FILTERS	up to P _{max}		up to Q _{max}		
		bar	psi	l/min	gpm	
325	LMP 110 - 120 - 123 MULTIPORT	In-line filter with Multiport design for multiple choice connection	80	1160	200	53
341	LMP 210 - 211	In-line low & medium pressure filter, low flow rate	60	870	330	87
351	LMP 400 - 401 & 430 - 431	In-line low & medium pressure filter, high flow rate	60	870	740	195
363	LMP 950 - 951	In-line filter, available with 2 and up to 6 different heads	30	435	2400	634
371	LMP 952 - 953 - 954	In-line low pressure filter specifically designed to be mounted in series	25	363	3000	793
383	LMD 211	In-line duplex medium pressure filter	60	870	330	87
391	LMD 400 - 401 & 431	In-line duplex low pressure filter	16	232	590	156
407	LMD 951	In-line duplex filter, available with 2 up to 6 different heads	16	232	1200	317
415	Filter elements designed according to DIN 24550					
417	LDP - LDD	In-line and duplex medium pressure filter	60	870	330	87
427	LMP 900 - 901	In-line low pressure filter	30	435	2000	528
435	LMP 902 - 903	In-line filter specifically designed to be mounted in series	20	290	3000	793
444	CLOGGING INDICATORS					
450	ACCESSORIES					

page	HIGH PRESSURE FILTERS	up to P _{max}		up to Q _{max}		
		bar	psi	l/min	gpm	
455	FMP 039	Filter high pressure, low flow rate applications	110	1595	80	21
463	FMP	Filter high pressure, high flow rate applications	320	4641	475	125
475	FHP	Typical high pressure filter for mobile applications, high flow rate	420	6092	750	198
493	FMM	Typical high pressure filter for mobile applications, low flow rate	420	6092	250	66
503	FHA 051	Filter optimized for use in high pressure operating systems, low flow rate	560	8122	140	37
511	FHM	High pressure filter with intermediate manifold construction	320	4641	450	119
529	FHB	High pressure for block mounting	320	4641	485	128
543	FHF 325	In-line manifold top mounting	350	5076	500	132
553	FHD	In-line duplex high pressure filter	350	5076	345	91
566	CLOGGING INDICATORS					

page	STAINLESS STEEL HIGH PRESSURE FILTERS	up to P _{max}		up to Q _{max}		
		bar	psi	l/min	gpm	
577	FZP	In-line pressure filter with threaded mount	420	6092	150	40
587	FZH	In-line pressure filter with threaded mount for higher pressure	700	10153	50	13
597	FZX	In-line pressure filter with threaded mount up to 1000 bar	1000	14504	10	3
605	FZM	Manifold top mounting	320	4641	70	18
613	FZB	Manifold side mounting	320	4641	75	20
621	FZD	Duplex pressure filter for continuous operation requirements	350	5076	90	24
631	CLOGGING INDICATORS					

page	CLOGGING INDICATORS
639	QUICK REFERENCE GUIDE

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

THE MAXIMUM TOTAL PRESSURE DROP ALLOWED BY A NEW AND CLEAN LOW & MEDIUM PRESSURE FILTER HAVE TO BE IN THE RANGE 0.1 ÷ 0.6 bar IN FUNCTION OF THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δp_c of the housing is proportional to the fluid density (kg/dm^3); all the graphs in the catalogue are referred to mineral oil with density of $0.86 \text{ kg}/\text{dm}^3$.

The filter element pressure drop Δp_e is proportional to its viscosity (mm^2/s), the corrective factor Y have to be used in case of an oil viscosity different than $30 \text{ mm}^2/\text{s}$ (cSt).

Sizing data for single filter element, head at top

Δp_c = Filter housing pressure drop [bar]

Δp_e = Filter element pressure drop [bar]

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)

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

V2 = operating oil viscosity in mm^2/s (cSt)

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

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

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

Verification formula

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

Maximum total pressure drop (Δp_{max}) allowed by a new and clean filter

Application	Range (bar)
Suction filters	0.08 ÷ 0.10
Return filters	0.4 ÷ 0.6
Return - Suction filters*	0.8 ÷ 1.0
Low & Medium Pressure filters	0.4 ÷ 0.6 return lines
	0.3 ÷ 0.5 lubrication lines
	0.3 ÷ 0.4 off-line in power systems
	0.1 ÷ 0.3 off-line in test benches
High Pressure filters	0.4 ÷ 0.6 over-boost
High Pressure filters	0.8 ÷ 1.5
Stainless Steel filters	0.8 ÷ 1.5

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

Generic filter calculation example

Application data:

Off-line filtration in power systems

Pressure Pmax = 50 bar

Flow rate Q = 120 l/min

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

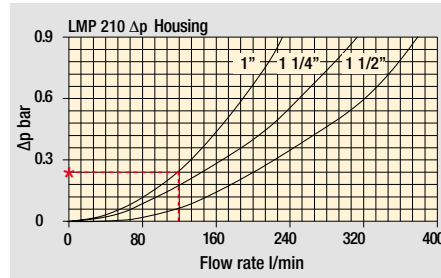
Oil density = $0.86 \text{ kg}/\text{dm}^3$

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

With bypass valve and 1" SAE 3000 psi/UNC inlet connection

Calculation:

$\Delta p_c = 0.24 \text{ bar}$ (see graphic below)



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

$\Delta p_e = (0.7 : 1000) \times 120 \times (46 : 30) = 0.13 \text{ bar}$

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
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	-	-
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

$\Delta p_{\text{Tot.}} = 0.24 + 0.13 = 0.37 \text{ bar}$

The selection is correct because the total pressure drop value is inside the admissible range for low and medium pressure filters. In case the allowed max total pressure drop is not verified, it is necessary to repeat the calculation changing the filter length/size.

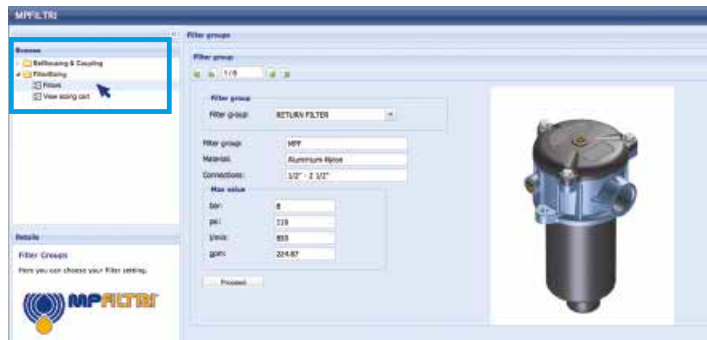
Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm²/s

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
	7	0.60	0.45	0.25	0.22	0.14	0.17	0.15	0.04
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

TYPICAL FILTER SIZING Selection Software

Step 1 Select "FILTERS"



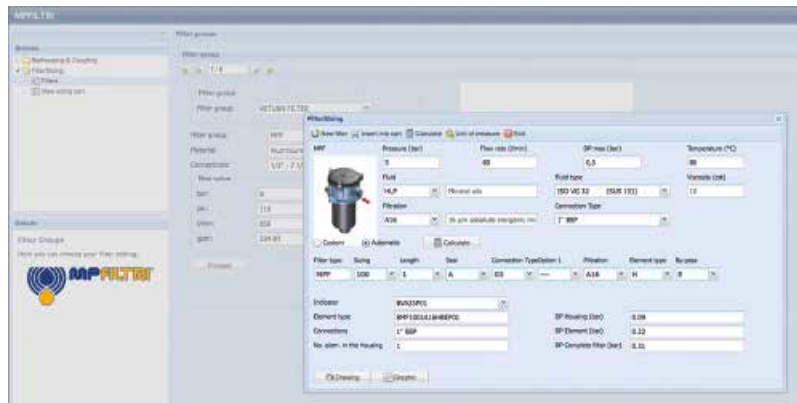
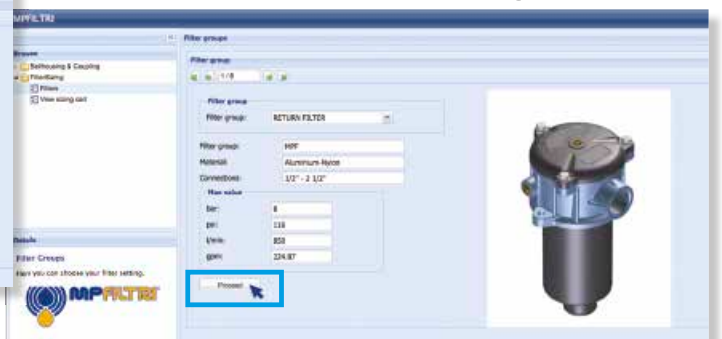
Step 2 Choose filter group (Return Filter, Pressure Filter, etc.)



Step 3 Choose filter type (MPF, MPT, etc.) in function of the max working pressure and the max flow rate



Step 4 Push "PROCEED"



Step 5

Insert all application data to calculate the filter size following the sequence:

- working pressure
- working flow rate
- working pressure drop
- working temperature
- fluid material and fluid type
- filtration media
- connection type

Step 6

Push "CALCULATE" to have result; in case of any mistake, the system will advice which parameter is out of range to allow to modify/adjust the selection



Step 7

Download PDF Datasheet "Report.aspx" pushing the button "Drawing"

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 [click here](#).

Low & Medium Pressure filters



LMP 110 - 120 - 123 MULTIPORT	page 325
LMP 210 - 211	341
LMP 400 - 401 & 430 - 431	351
LMP 950 - 951	363
LMP 952 - 953 - 954	371
LMD 211	383
LMD 400 - 401 & 431	391
LMD 951	407

Filter element according to DIN 24550	page 415
LDP - LDD	417
LMP 900 - 901	427
LMP 902 - 903	435

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LMP 110-120-123 series

MULTIPOINT

Maximum working pressure up to 8 MPa (80 bar) - Flow rate up to 200 l/min



Description

Technical data

Low & Medium Pressure filters

Maximum working pressure up to 8 MPa (80 bar)
Flow rate up to 200 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 200 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
- Multipoint 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: Cathaphoresis - 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 [dm³]

Filter series	Weights [kg]				Volumes [dm ³]					
	Length	1	2	3	4	Length	1	2	3	4
LMP 110-112-116-118-119		1.60	1.80	2.10	2.60		0.75	0.81	1.11	1.53
LMP 120-122		1.90	2.10	2.40	2.90		0.75	0.81	1.11	1.53
LMP 123		1.70	1.90	2.20	2.70		0.75	0.81	1.11	1.53

FILTER ASSEMBLY SIZING
Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90 M250	P10	P25
LMP 110	1	40	42	65	69	85	163	117	120
	2	49	57	83	83	101	163	136	138
	3	66	70	92	102	124	164	142	144
	4	86	102	118	124	144	165	148	149
LMP 112	1	36	38	55	57	67	105	84	86
	2	44	49	66	66	76	105	93	94
	3	56	58	71	77	87	106	96	97
	4	67	77	85	88	97	106	99	99
LMP 116	1	36	38	54	56	64	96	79	80
	2	43	49	63	64	72	96	86	87
	3	54	57	68	73	82	96	88	89
	4	65	73	79	82	89	96	91	91
LMP 118	1	40	42	65	69	85	163	117	120
	2	49	57	83	83	101	163	136	138
	3	66	70	92	102	124	164	142	144
	4	86	102	118	124	144	165	148	149
LMP 120	1	40	43	66	70	87	172	121	125
	2	50	58	85	85	104	172	142	144
	3	67	71	94	105	129	173	149	151
	4	88	106	122	129	151	174	155	157
LMP 122	1	39	42	64	67	81	146	109	111
	2	49	56	80	80	96	146	124	126
	3	65	68	88	96	114	146	129	130
	4	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 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

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

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

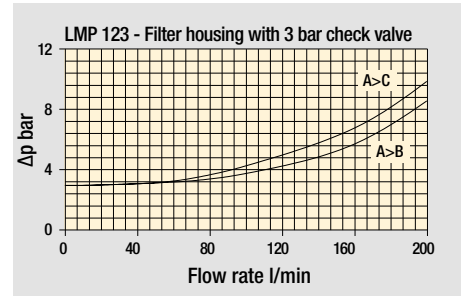
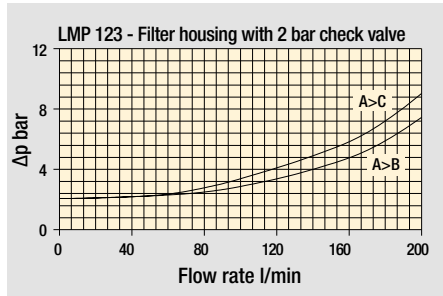
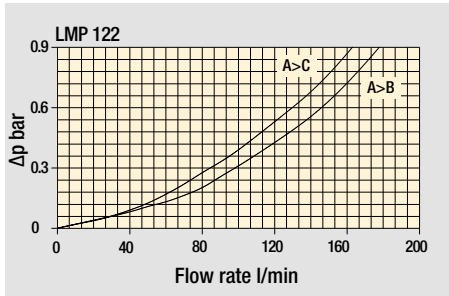
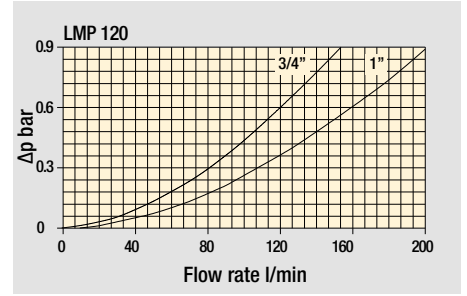
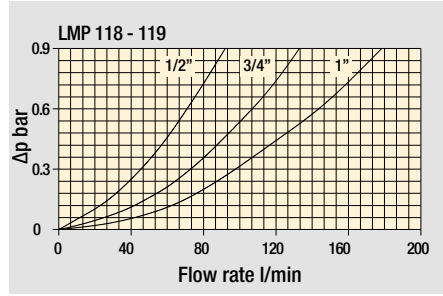
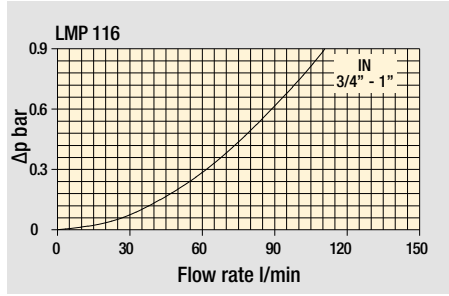
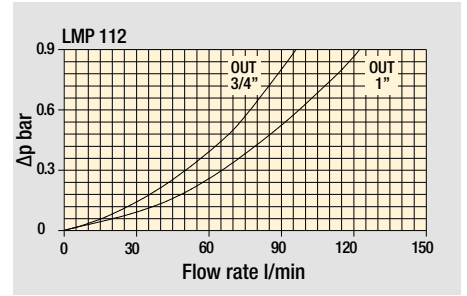
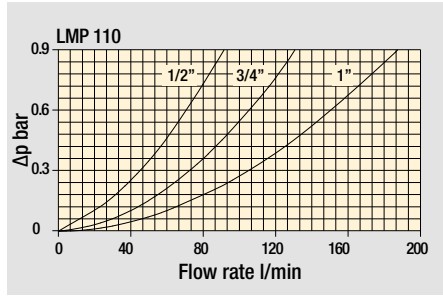
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

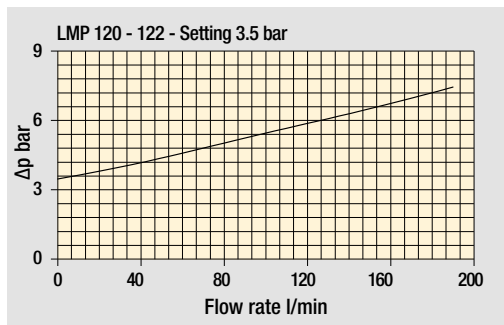
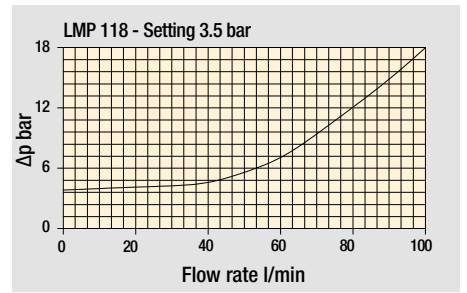
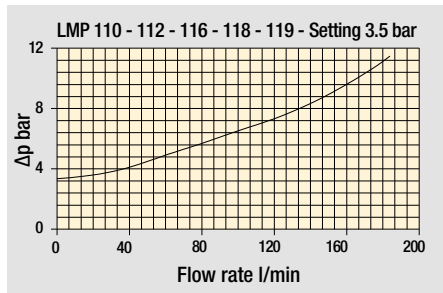
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Pressure drop

Filter housings Δp pressure drop


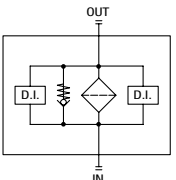


Bypass valve pressure drop




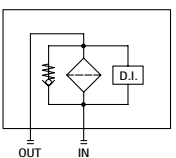
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

LMP 110 In-Line filter


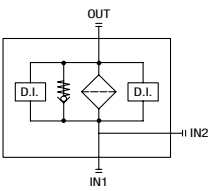
The hydraulic symbol shows a central diamond-shaped filter element connected in series between the IN and OUT ports. Two side ports are labeled D.I. (Direct Inlet).

LMP 120 Port IN-OUT on the same side


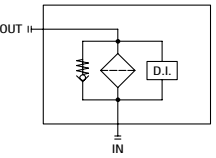
The hydraulic symbol shows a diamond-shaped filter element with a bypass line. The IN and OUT ports are on the same side of the filter, and a D.I. port is also shown.

LMP 112 Double IN port


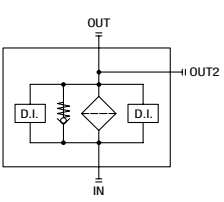
The hydraulic symbol shows a diamond-shaped filter element with two IN ports (IN1 and IN2) and one OUT port. Two side ports are labeled D.I.

LMP 122 Lateral OUT port high flow


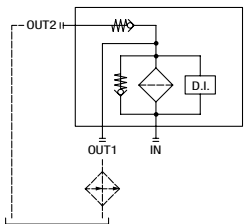
The hydraulic symbol shows a diamond-shaped filter element with one IN port and one OUT port. A second OUT port is shown laterally with a bypass line. A D.I. port is also present.

LMP 116 Double OUT port


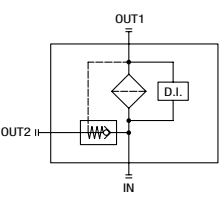
The hydraulic symbol shows a diamond-shaped filter element with one IN port and two OUT ports (OUT1 and OUT2). Two side ports are labeled D.I.

LMP 123 Bypass valve for heat exchanger high flow
Type 1


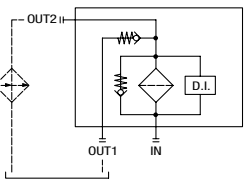
The hydraulic symbol shows a diamond-shaped filter element with a bypass valve. The IN port is at the bottom, and two OUT ports (OUT1 and OUT2) are shown. A D.I. port is also present.

LMP 118 Bypass lateral
Always cleaning fluid in OUT port


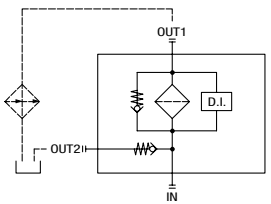
The hydraulic symbol shows a diamond-shaped filter element with a bypass valve. The IN port is at the bottom, and two OUT ports (OUT1 and OUT2) are shown. A D.I. port is also present.

LMP 123 Bypass valve for heat exchanger high flow
Type 2

The hydraulic symbol shows a diamond-shaped filter element with a bypass valve. The IN port is at the bottom, and two OUT ports (OUT1 and OUT2) are shown. A D.I. port is also present.

LMP 119 Safety valve 6 bar for heat exchanger

The hydraulic symbol shows a diamond-shaped filter element with a safety valve. The IN port is at the bottom, and two OUT ports (OUT1 and OUT2) are shown. A D.I. port is also present.

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** 3.5 bar

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

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

Element Δp **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)	
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

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

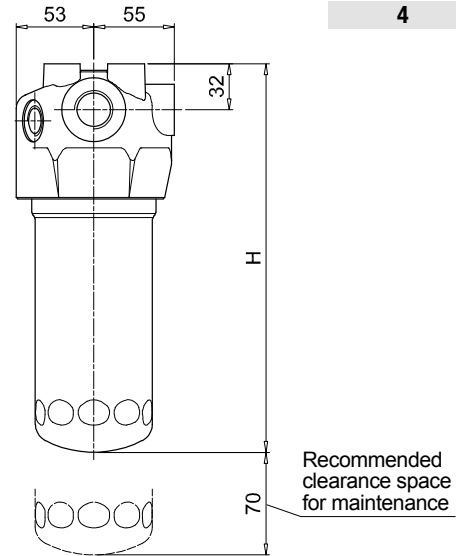
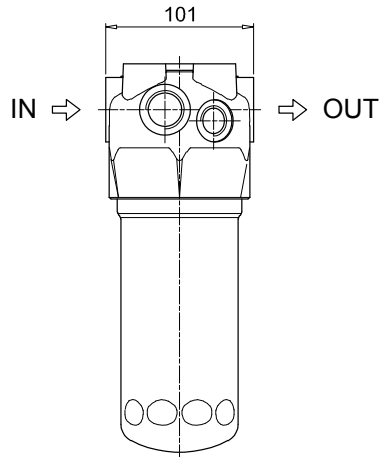
Element Δp **N** 20 bar Execution **P01** MP Filtri standard | **Pxx** Customized

ACCESSORIES

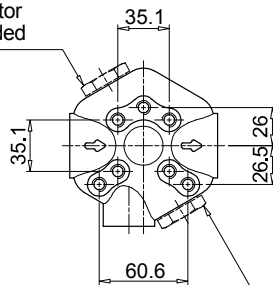
Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		

LMP110 - LMP112
LMP116

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

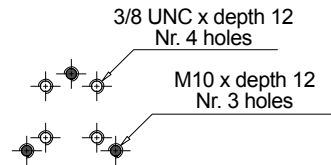


2 - Standard connection for differential indicator
T2 plug not included

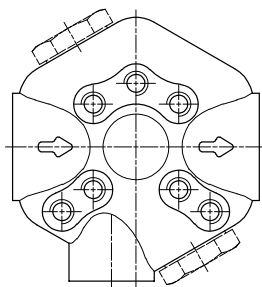


3 - Connection for differential indicator on the opposite side
T2 plug not included

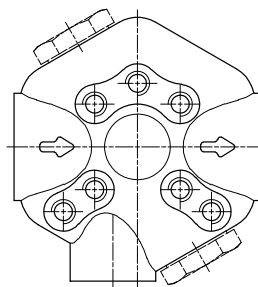
Fixing holes
Option for Metric and UNC screws



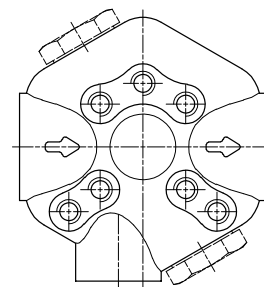
LMP 110



LMP 112



LMP 116



↑
Aux
IN

↓
Aux
OUT

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: LMP118 4 B A D 1 A10 N P01									
LMP118 LMP119											
Length											
1 2 3 4											
Bypass valve											
B 3.5 bar											
Seals and treatments		Filtration rating									
		Axx	Mxx	Pxx							
A NBR		•	•	•							
V FPM		•	•	•							
W NBR compatible with fluids HFA-HFB-HFC		•	•								
Connections											
		Aux OUT									
A	G 3/4"	G 3/4"									
B	G 1"	G 3/4"									
C	3/4" NPT	3/4" NPT									
D	1" NPT	3/4" NPT									
E	SAE 12 - 1 1/16" - 12 UN	SAE 12 - 1 1/16" - 12 UN									
F	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)											
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									
		Element Δp		Execution							
		N 20 bar		P01 MP Filtri standard							
				Pxx Customized							

FILTER ELEMENT

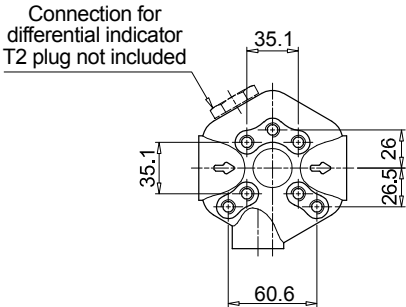
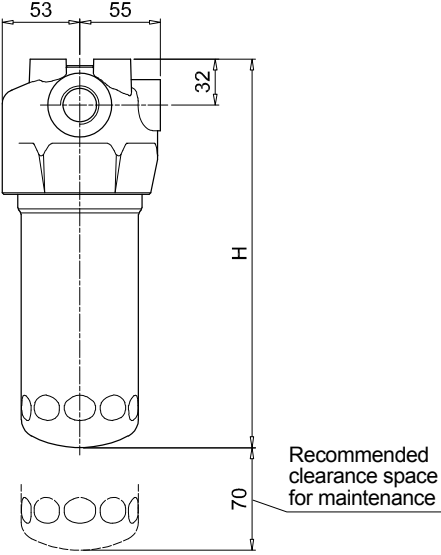
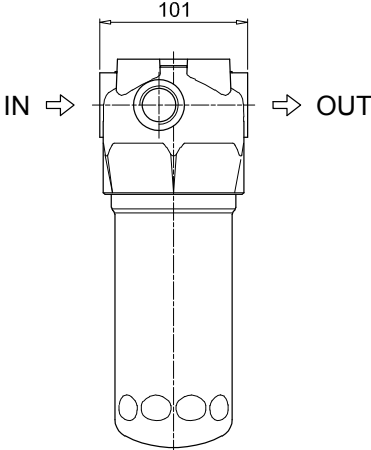
Element series and size		Configuration example: CU110 4 A10 A N P01							
CU110									
Element length									
1 2 3 4									
Filtration rating (filter media)									
A03	Inorganic microfiber 3 µm	M25 Wire mesh 25 µm							
A06	Inorganic microfiber 6 µm	M60 Wire mesh 60 µm							
A10	Inorganic 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							
Seals		Filtration rating							
		Axx	Mxx	Pxx					
A NBR		•	•	•					
V FPM		•	•	•					
W NBR compatible with fluids HFA-HFB-HFC		•	•						
		Element Δp		Execution					
		N 20 bar		P01 MP Filtri standard					
				Pxx Customized					

ACCESSORIES

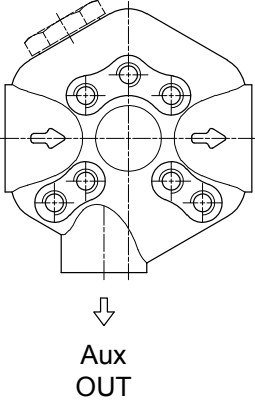
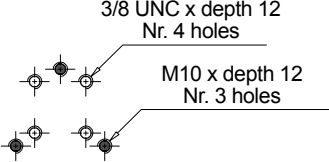
Differential indicators		page			page
DEA	Electrical differential indicator	445	DTA	Electronic differential indicator	448
DEM	Electrical differential indicator	445-446	DVA	Visual differential indicator	448
DLA	Electrical / visual differential indicator	446-447	DVM	Visual differential indicator	448
DLE	Electrical / visual differential indicator	447			
Additional features		page			
T2	Plug	449			

LMP118 - LMP119

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



Fixing holes
Option for Metric and UNC screws



Designation & Ordering code

COMPLETE FILTER

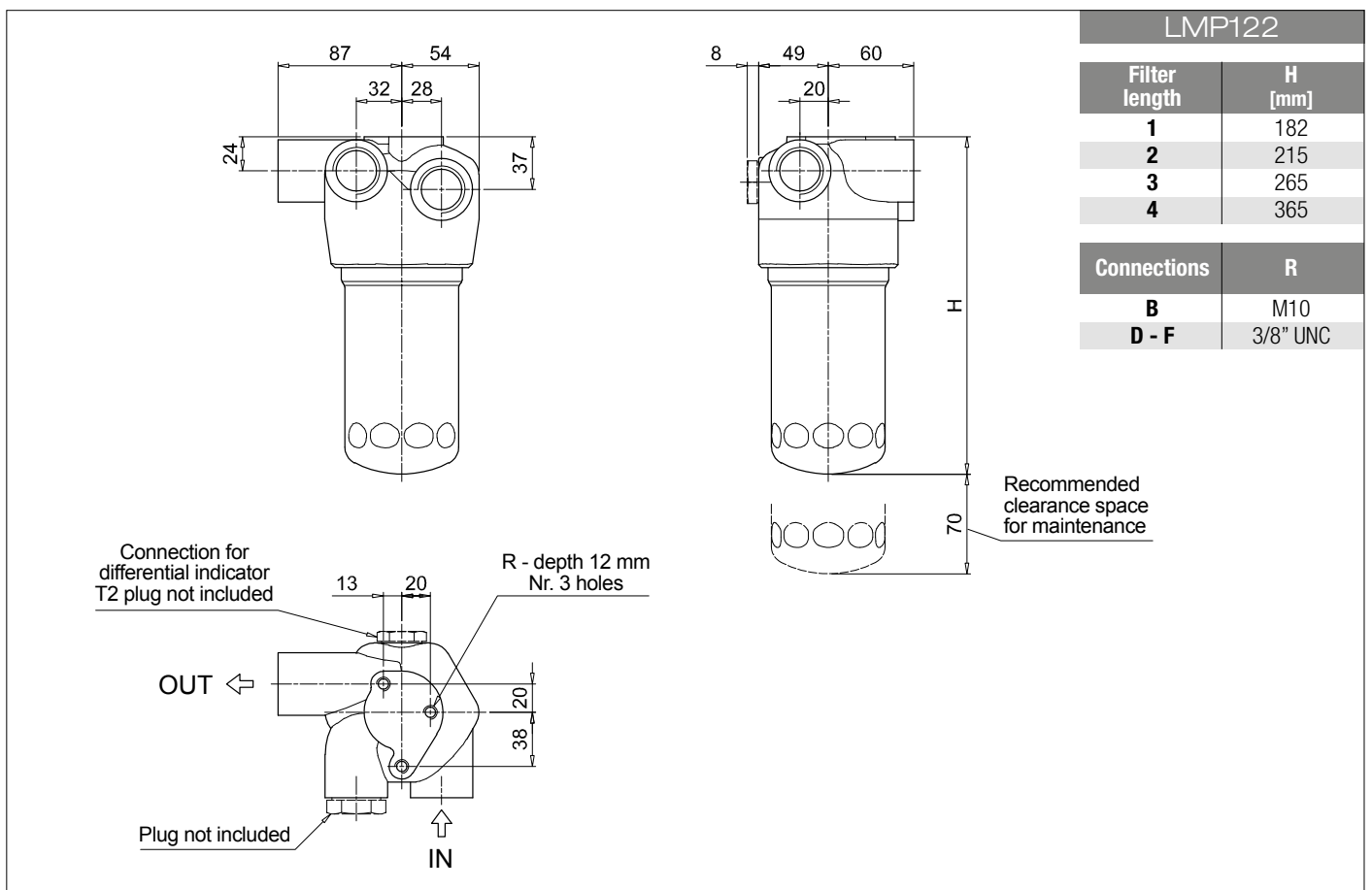
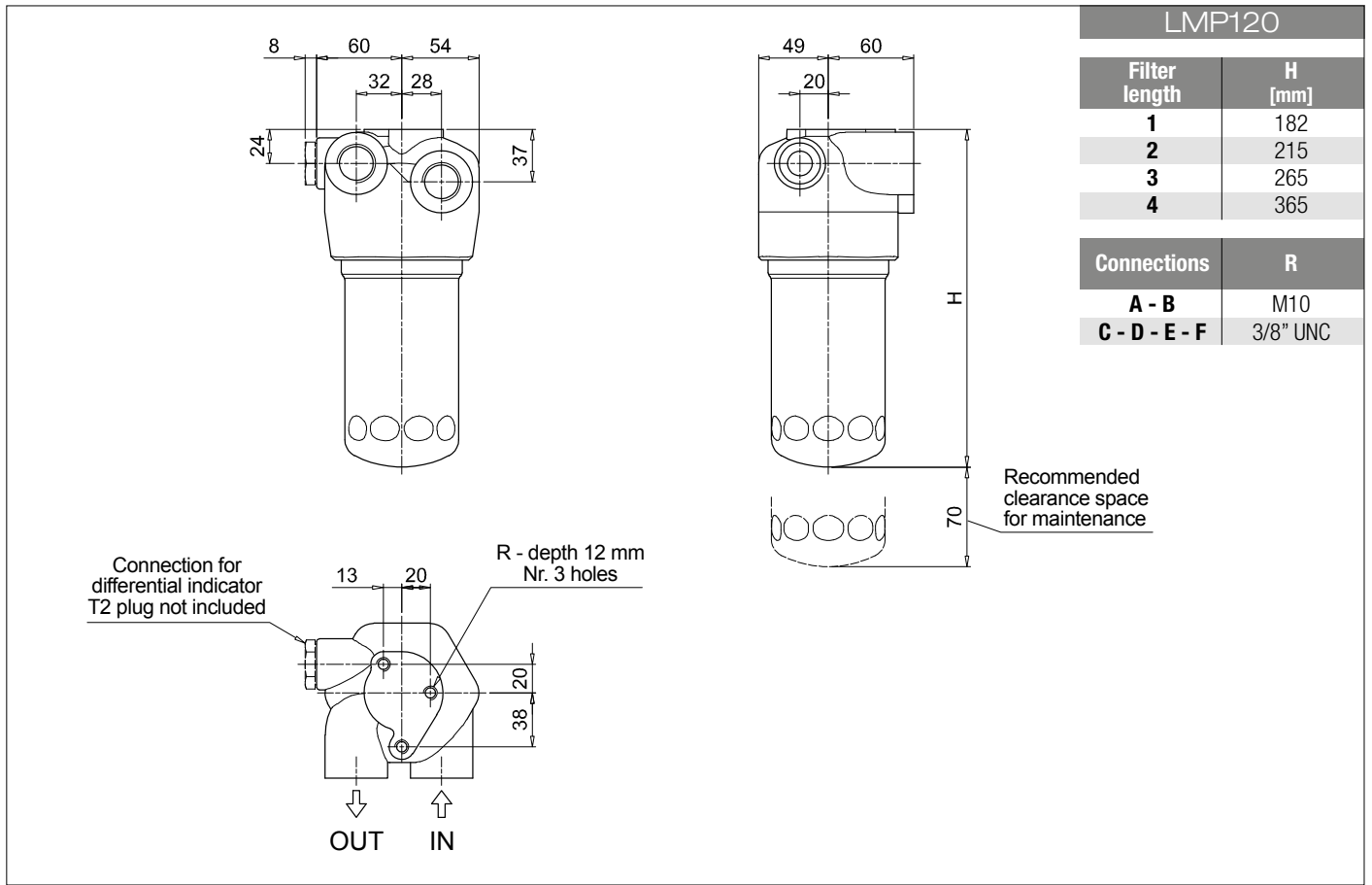
Series and size		Configuration example: LMP120 4 B A D 1 A10 N P01									
LMP120 LMP122											
Length											
1 2 3 4											
Bypass valve											
S Without bypass		B 3.5 bar									
Seals and treatments		Filtration rating									
		Axx	Mxx	Pxx							
A NBR		•	•	•							
V FPM		•	•	•							
W NBR compatible with fluids HFA-HFB-HFC		•	•								
Connections		LMP120		LMP122							
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 differential indicator											
1 Without											
2 With standard 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									
				Element Δp		Execution					
				N 20 bar		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)											
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									
Seals		Filtration rating									
		Axx	Mxx	Pxx							
A NBR		•	•	•							
V FPM		•	•	•							
W NBR compatible with fluids HFA-HFB-HFC		•	•								
				Element Δp		Execution					
				N 20 bar		P01 MP Filtri standard					
						Pxx Customized					

ACCESSORIES

Differential indicators		page			page
DEA Electrical differential indicator		445	DTA Electronic differential indicator		448
DEM Electrical differential indicator		445-446	DVA Visual differential indicator		448
DLA Electrical / visual differential indicator		446-447	DVM Visual differential indicator		448
DLE Electrical / visual differential indicator		447			
Additional features		page			
T2 Plug		449			



Designation & Ordering code

COMPLETE FILTER

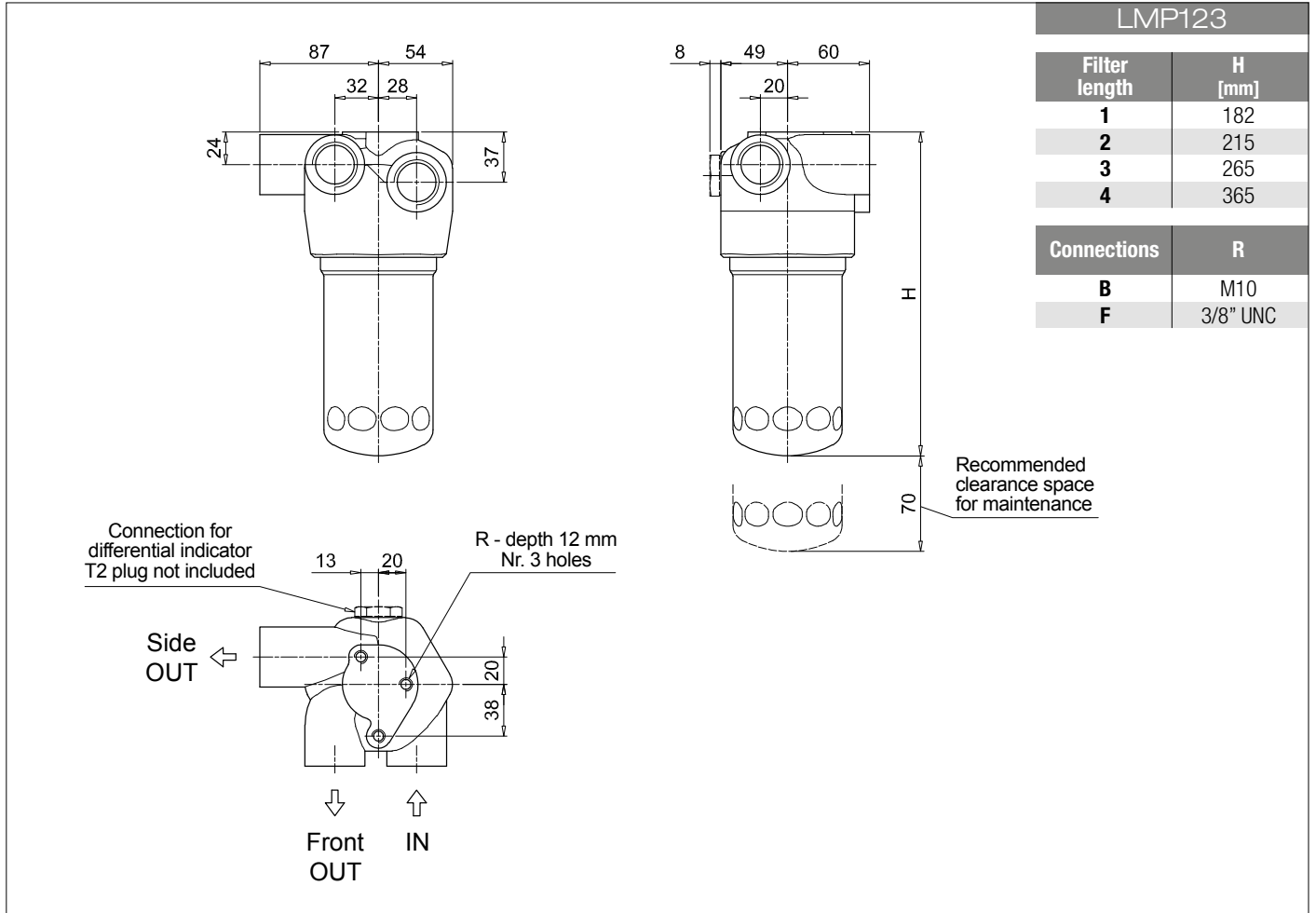
Series and size		Configuration example: LMP123 4 R A F 1 A10 N P01									
LMP123											
Length		1 2 3 4									
Valves	Bypass	OUT to cooler	Check valve								
C	without	front	2 bar								
D			3 bar								
G		side	2 bar								
H			3 bar								
M	3.5 bar	front	2 bar								
N			3 bar								
Q		side	2 bar								
R			3 bar								
Seals and treatments		Filtration rating									
		Axx	Mxx	Pxx							
A	NBR	•	•	•							
V	FPM	•	•	•							
W	NBR compatible with fluids HFA-HFB-HFC	•	•								
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)											
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							
		Element Δp		Execution							
		N 20 bar		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)											
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							
Seals		Filtration rating									
		Axx	Mxx	Pxx							
A	NBR	•	•	•							
V	FPM	•	•	•							
W	NBR compatible with fluids HFA-HFB-HFC	•	•								
		Element Δp		Execution							
		N 20 bar		P01 MP Filtri standard Pxx Customized							

ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	445	DTA	Electronic differential indicator	448
DEM	Electrical differential indicator	445-446	DVA	Visual differential indicator	448
DLA	Electrical / visual differential indicator	446-447	DVM	Visual differential indicator	448
DLE	Electrical / visual differential indicator	447			
Additional features		page			
T2	Plug	449			

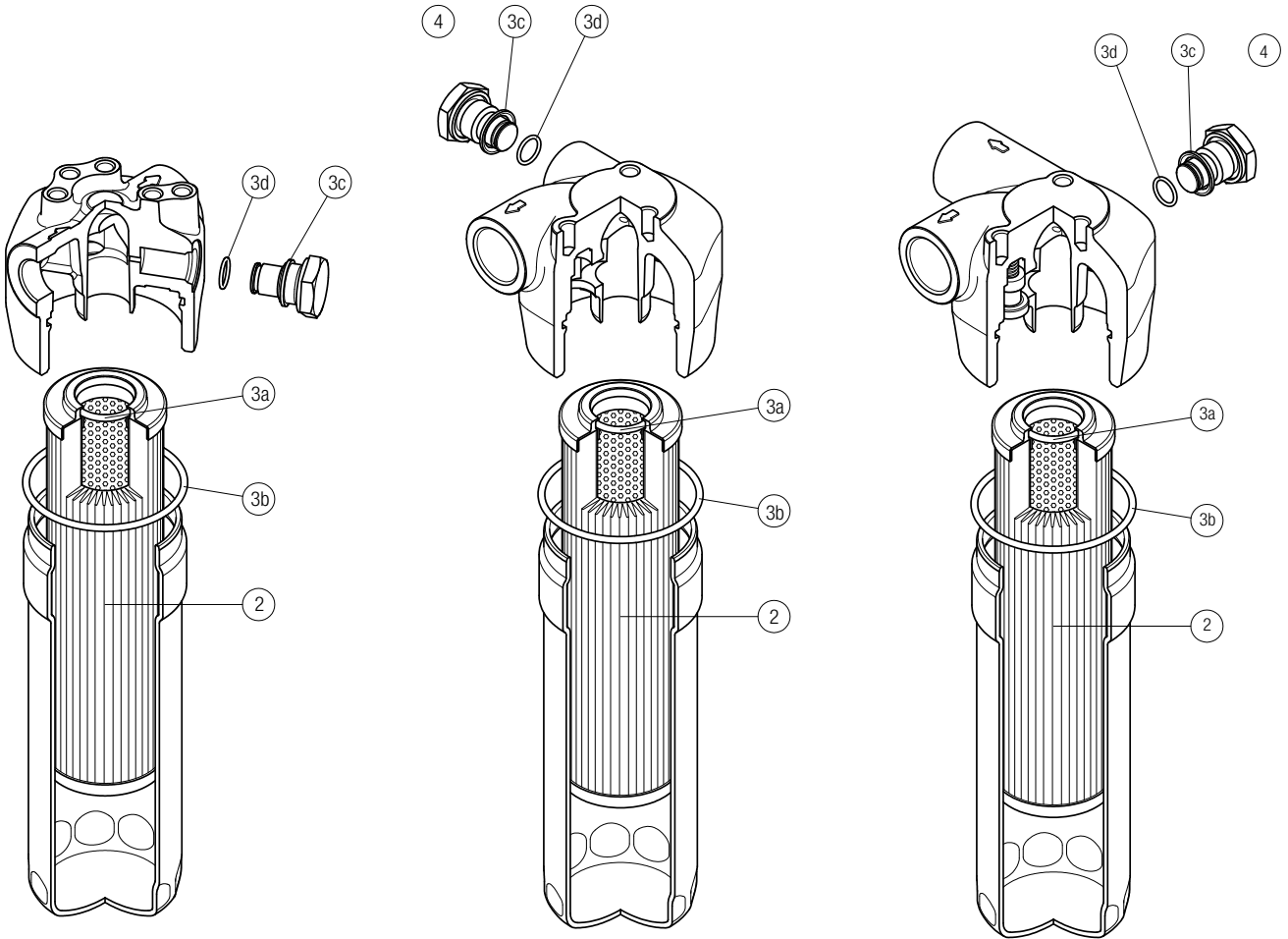


Order number for spare parts

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	
LMP 120		02050478	02050479	T2H	T2V	
LMP 122-123						

LMP 210-211

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 330 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 330 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 330 l/min (LMP210)
- Female threaded connections up to 1 1/2", for a maximum return flow rate of 330 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 - Nylon

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.

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 [dm³]

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

GENERAL INFORMATION LMP 210-211

FILTER ASSEMBLY SIZING Flow rates [l/min]

Filter series	Length	Filter element design - N Series										
		A03	A06	A10	A16	A25	M25	M60	M90	M250	P10	P25
LMP 210	1	106	130	190	200	221	286	287	287	288	261	265
	2	153	175	220	237	249	288	289	290	290	265	269
	3	204	214	248	260	265	289	290	291	291	277	281
LMP 211	1	118	149	227	240	269	358	359	360	361	324	330
	2	178	207	268	292	307	361	362	363	364	329	335
	3	247	260	306	323	329	362	363	364	365	345	351

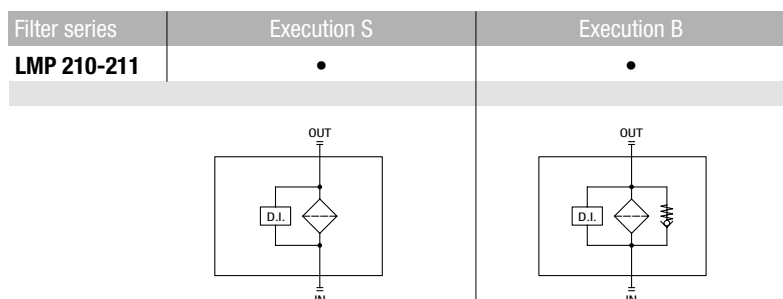
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

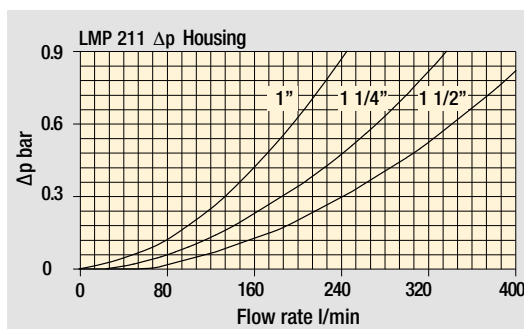
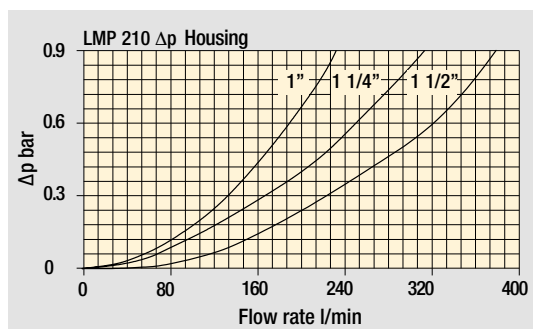
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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

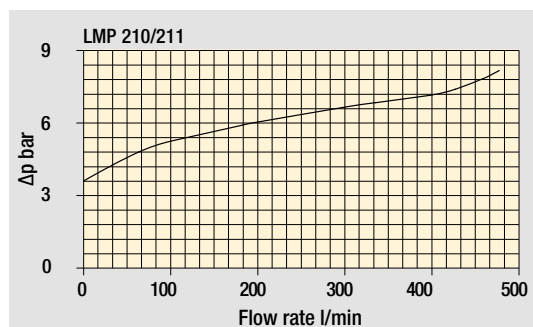
Hydraulic symbols



Pressure drop



Filter housings Δp pressure drop



Bypass valve pressure drop

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

LMP 210

Designation & Ordering code

COMPLETE FILTER

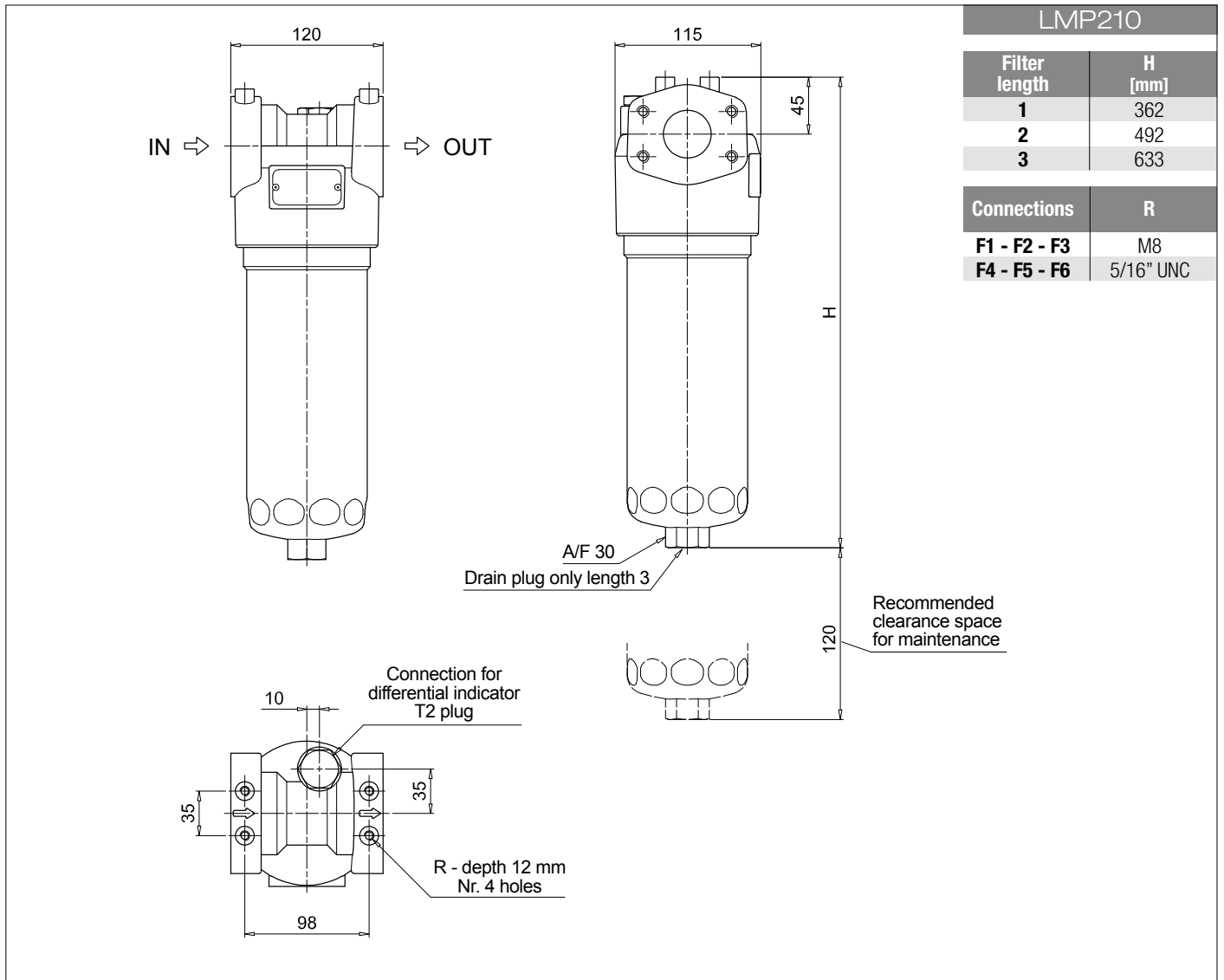
Series and size	Configuration example: LMP210 3 B A F1 A10 N P01									
LMP210										
Length	1 2 3									
Bypass valve	S Without bypass B 3.5 bar									
Seals and treatments	Filtration rating									
A NBR	Axx	Mxx	Pxx							
V FPM	•	•	•							
W NBR compatible with fluids HFA-HFB-HFC	•	•								
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						Execution
				N 20 bar						P01 MP Filtri standard
										Pxx Customized

FILTER ELEMENT

Element series and size	Configuration example: CU210 3 A10 A N P01							
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	Filtration rating							
A NBR	Axx	Mxx	Pxx					
V FPM	•	•	•					
W NBR compatible with fluids HFA-HFB-HFC	•	•						
				Element Δp				Execution
				N 20 bar				P01 MP Filtri standard
								Pxx Customized

ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		



LMP 211

Designation & Ordering code

COMPLETE FILTER

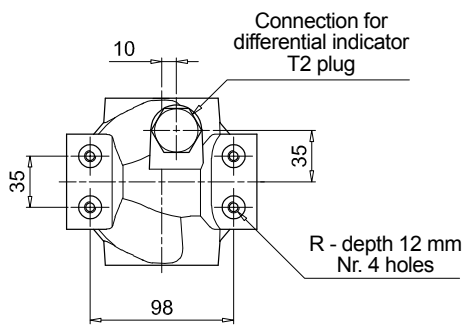
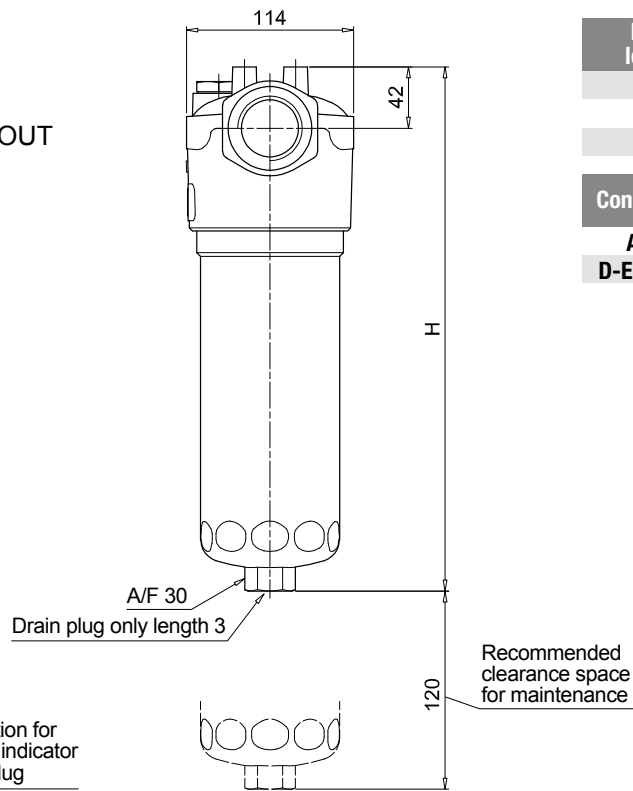
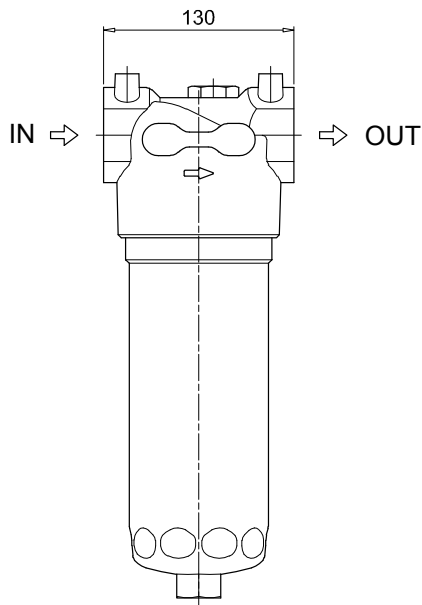
Series and size	Configuration example: LMP211 3 B A D 6 A10 N P01									
LMP211										
Length	1 2 3									
Bypass valve	S Without bypass B 3.5 bar									
Seals and treatments	Filtration rating									
A NBR	Axx	Mxx	Pxx							
V FPM	•	•	•							
W NBR compatible with fluids HFA-HFB-HFC	•	•								
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	Configuration example: CU210 3 A10 A N P01							
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	Filtration rating							
A NBR	Axx	Mxx	Pxx					
V FPM	•	•	•					
W NBR compatible with fluids HFA-HFB-HFC	•	•						
			Element Δp	N 20 bar				
						Execution	P01 MP Filtri standard Pxx Customized	

ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		



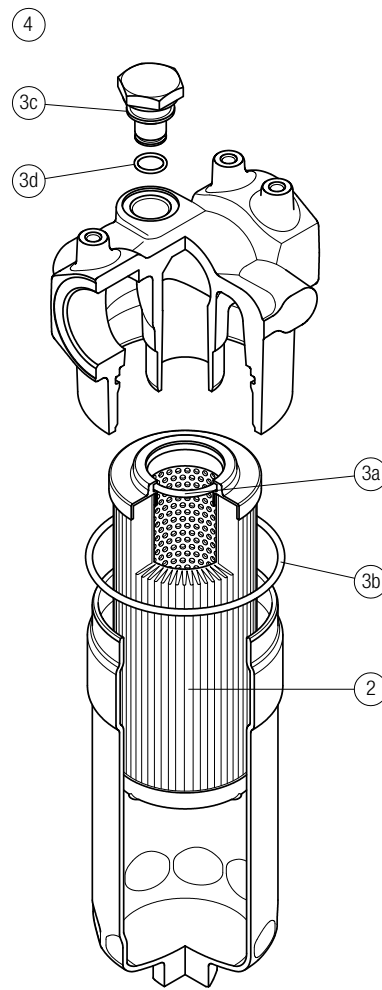
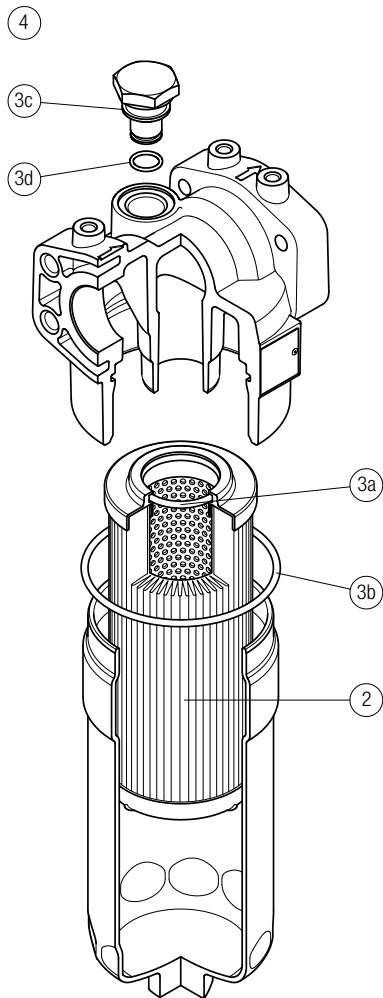
LMP211	
Filter length	H [mm]
1	358
2	488
3	629
Connections	R
A-B-C	M8
D-E-F-G-H-I	5/16" UNC

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	
	2	02050435	02050436	T2H	T2V	
		3 (3a ÷ 3d)		4		

LMP 400-401 & 430-431 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 740 l/min



Description

Technical data

Low & Medium Pressure filters

Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 740 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 740 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 [dm³]

Filter series	Weights [kg]					Volumes [dm ³]						
	Length	2	3	4	5	6	Length	2	3	4	5	6
LMP 400-401 & 430-431		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 M250	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

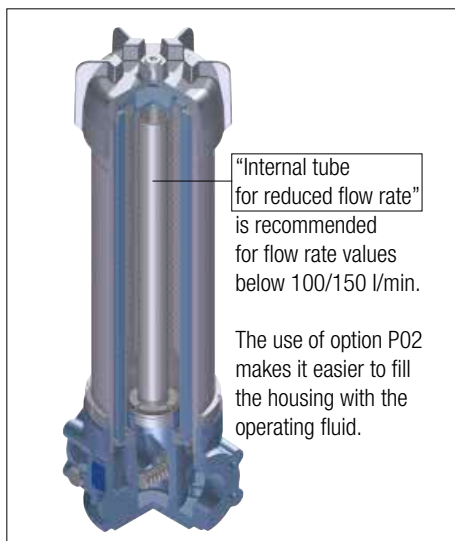
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

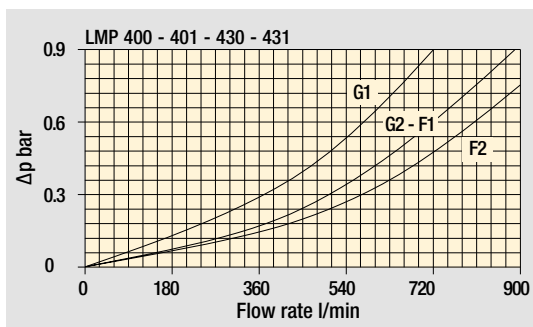
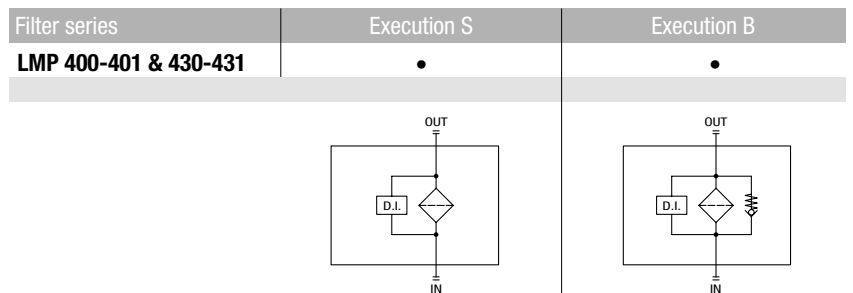
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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

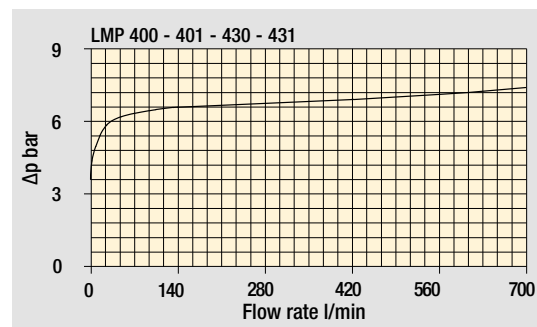
LMP 430-431: execution P02



Hydraulic symbols



Filter housings Δp pressure drop



Pressure drop

Bypass valve pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp 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 3.5 bar											
Seals and treatments		Filtration rating									
		Axx	Mxx	Pxx							
A NBR		•	•	•							
V FPM		•	•	•							
W NBR compatible with fluids HFA-HFB-HFC		•	•								
Connections											
G1 G 1 1/2"		F1 2" SAE 3000 psi/M									
G2 G 2"		F2 2 1/2" SAE 3000 psi/M									
G3 1 1/2" NPT		F3 2" SAE 3000 psi/UNC									
G4 2" NPT		F4 2 1/2" SAE 3000 psi/UNC									
G5 SAE 24 - 1 7/8" - 12 UN											
G6 SAE 32 - 2 1/2" - 12 UN											
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		Filter length							
				2	3	4	5	6			
		P01 MP Filtri standard		•	•	•	•	•			
		P02 Maintenance from the bottom of the housing							•	•	
		Pxx Customized									

FILTER ELEMENT

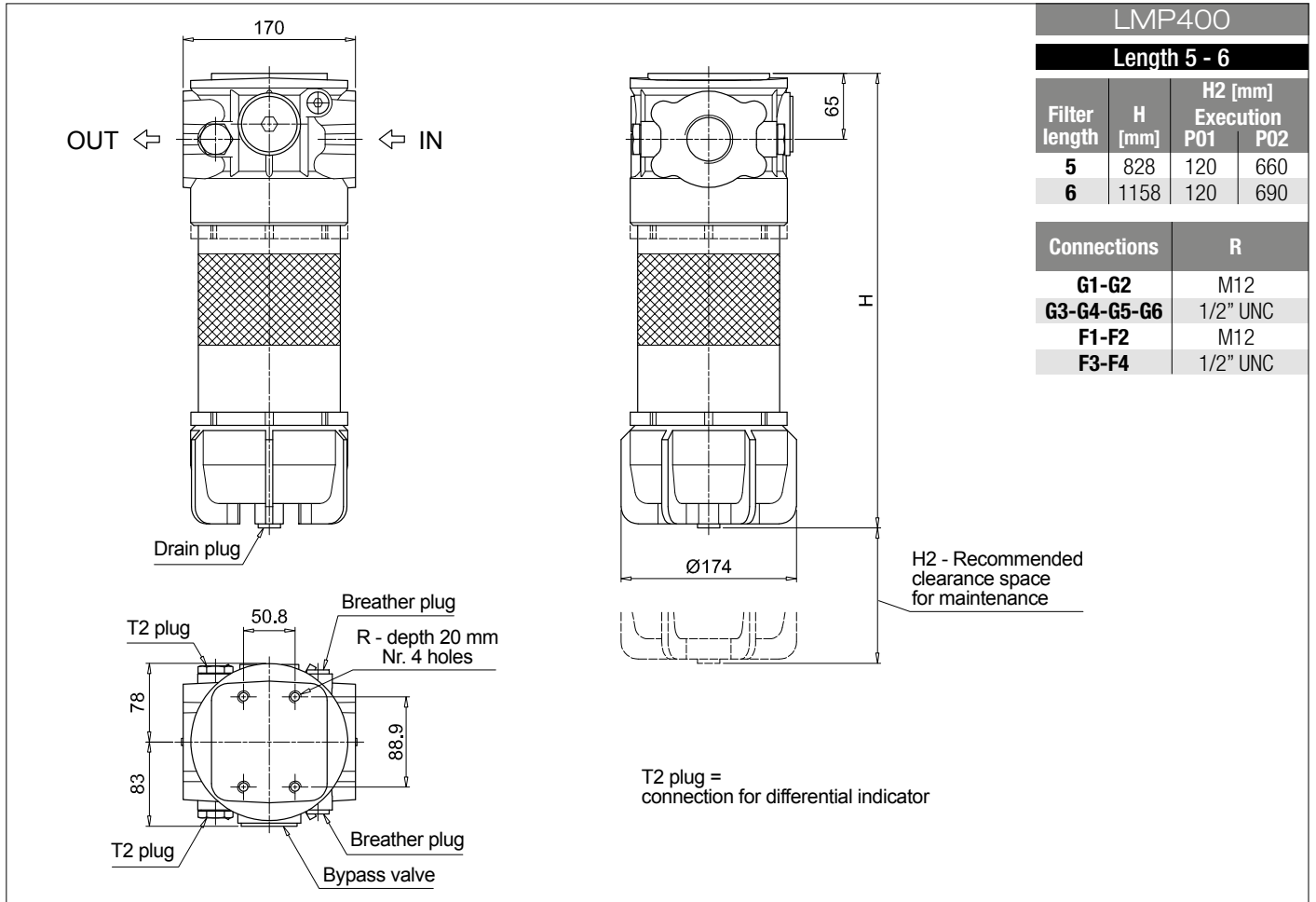
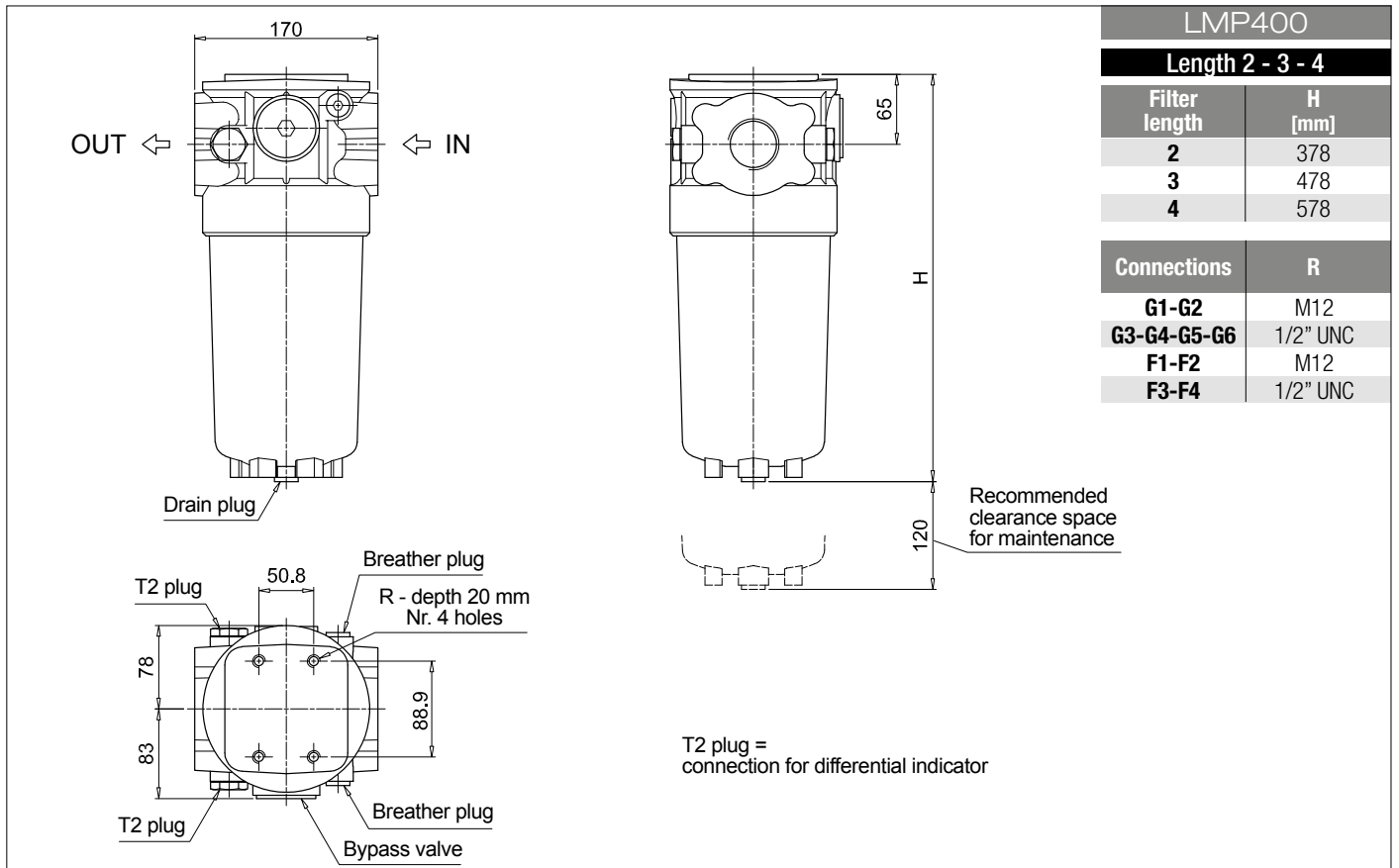
Element series and size CU400		Configuration example: CU400 3 A10 A N P01									
Element length 2 3 4 5 6											
Filtration rating (filter media)											
A03 Inorganic microfiber 3 µm		M25 Wire mesh 25 µm									
A06 Inorganic microfiber 6 µm		M60 Wire mesh 60 µm									
A10 Inorganic microfiber 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		Filtration rating									
		Axx	Mxx	Pxx							
A NBR		•	•	•							
V FPM		•	•	•							
W NBR compatible with fluids HFA-HFB-HFC		•	•								
Element Δp N 20 bar		Execution									
		P01 MP Filtri standard									
		Pxx Customized									

ACCESSORIES

Differential indicators		page			page
DEA Electrical differential indicator		445	DTA Electronic differential indicator		448
DEM Electrical differential indicator		445-446	DVA Visual differential indicator		448
DLA Electrical / visual differential indicator		446-447	DVM Visual differential indicator		448
DLE Electrical / visual differential indicator		447			
Additional features		page			
T2 Plug		449			

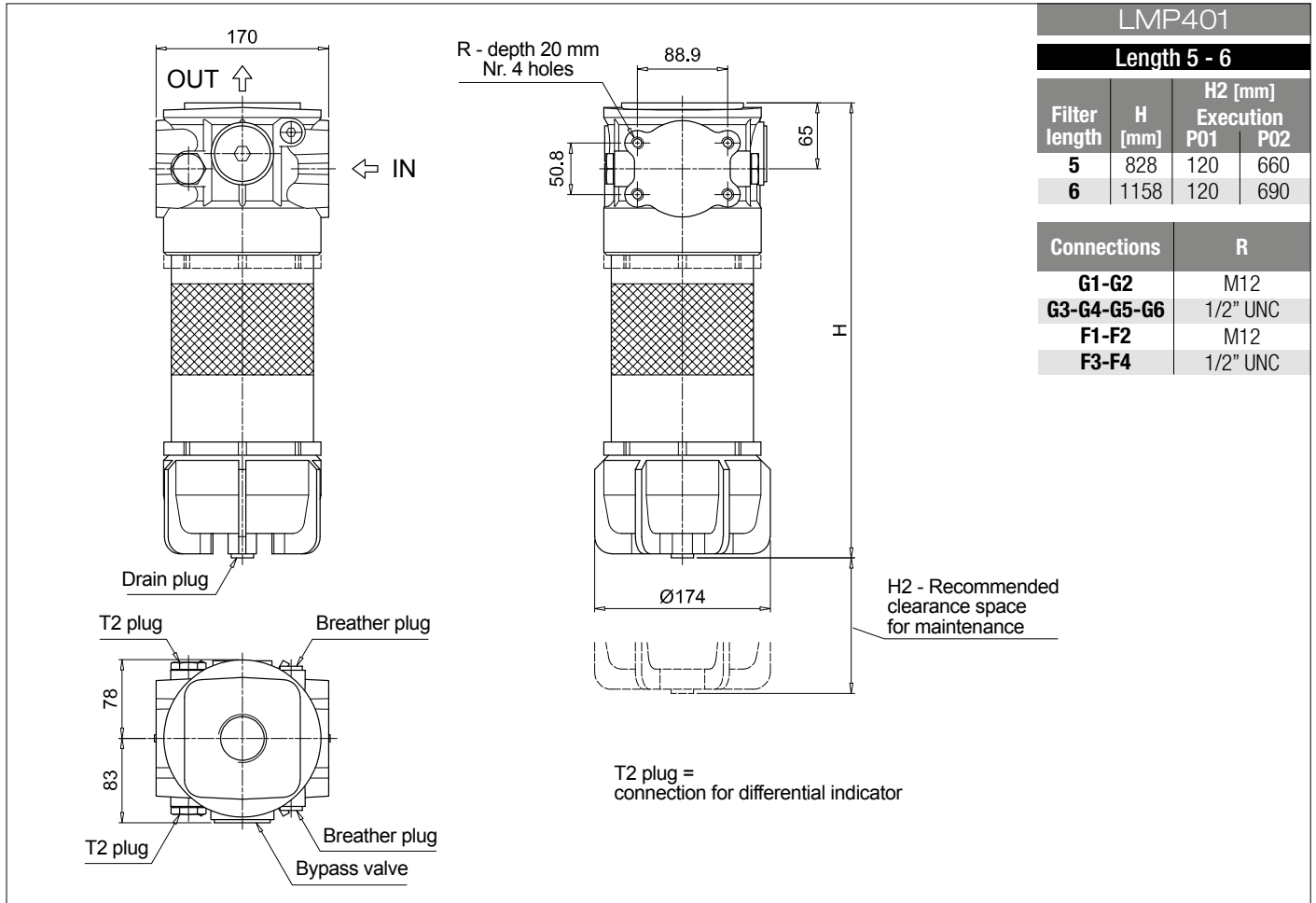
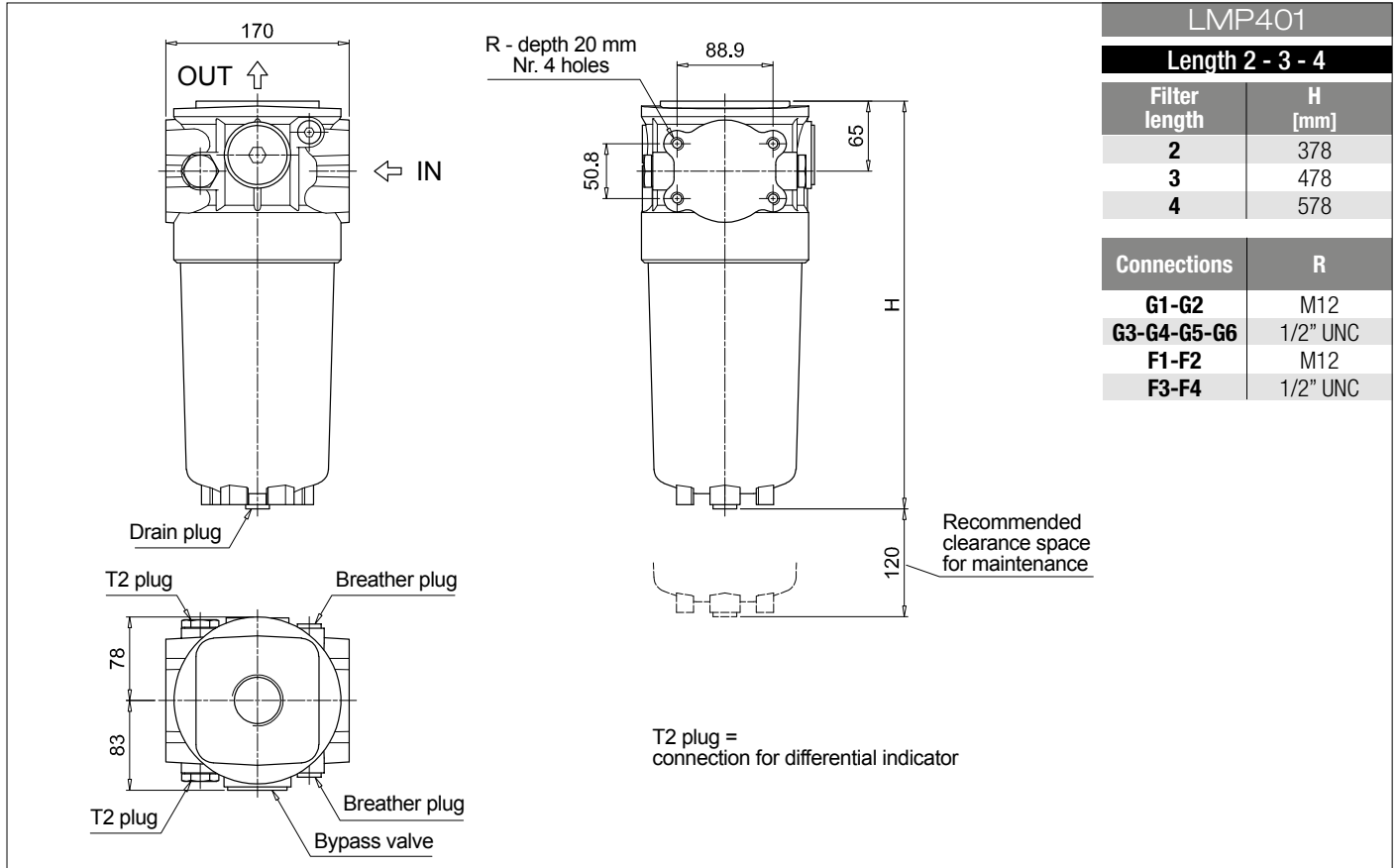
LMP 400-401

Dimensions



LMP 400-401

Dimensions



LMP 430-431

Designation & Ordering code

COMPLETE FILTER

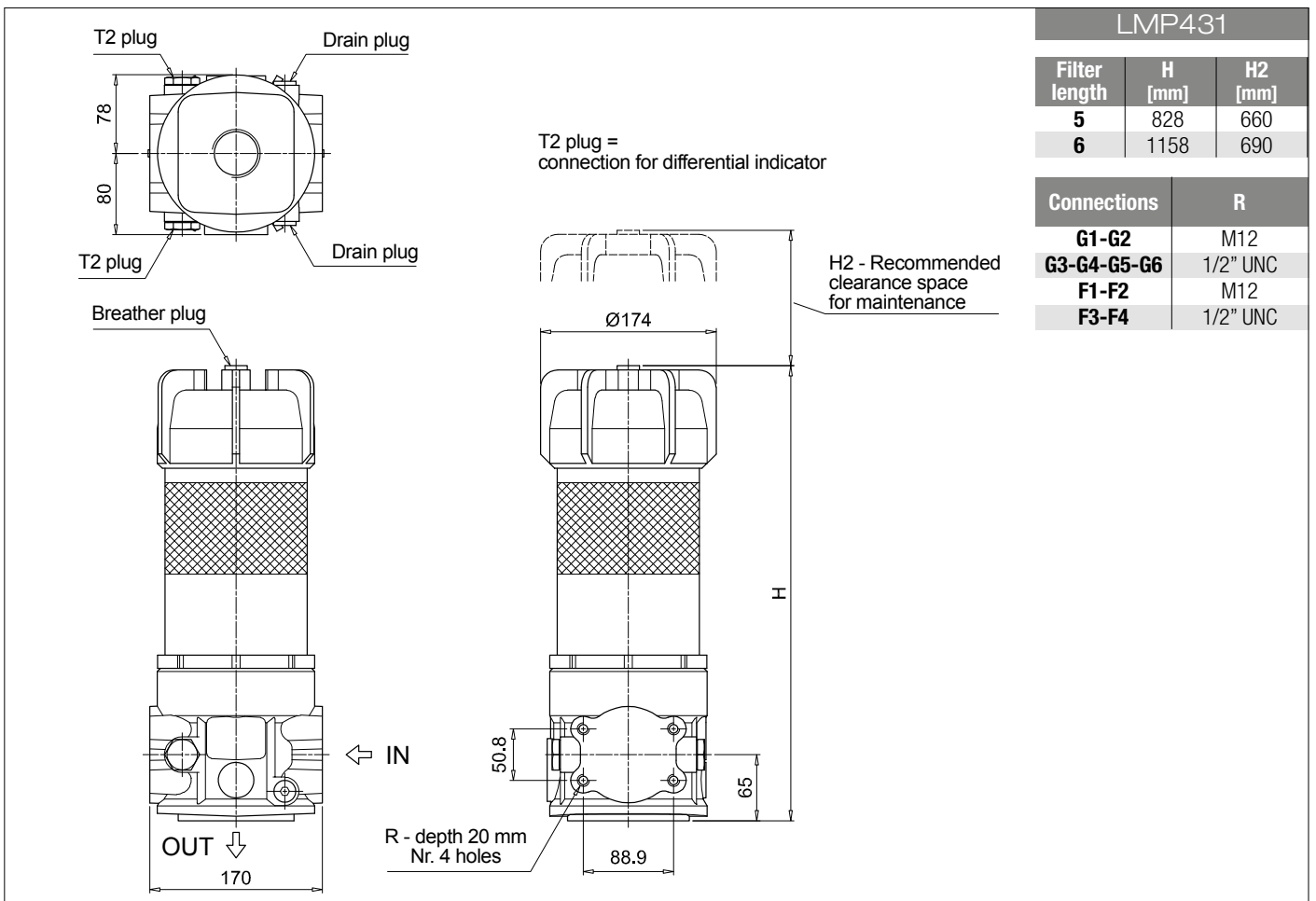
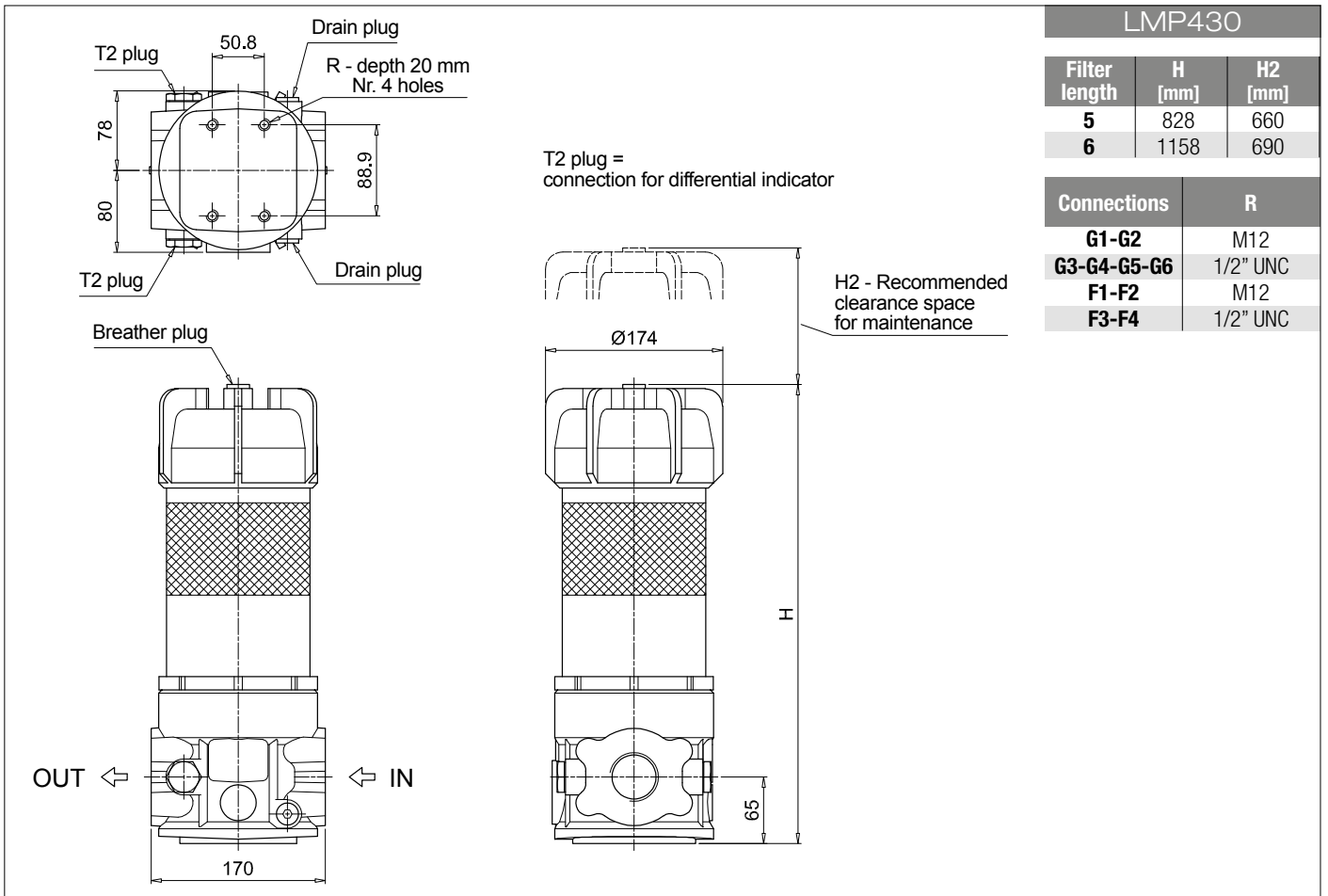
Series and size LMP430 LMP431		Configuration example: LMP431 5 B A G1 A10 N P01							
Length 5 6									
Bypass valve S Without bypass B 3.5 bar									
Seals and treatments		Filtration rating							
		Axx	Mxx	Pxx					
A NBR		•	•	•					
V FPM		•	•	•					
W NBR compatible with fluids HFA-HFB-HFC		•	•						
Connections									
G1 G 1 1/2"		F1 2" SAE 3000 psi/M							
G2 G 2"		F2 2 1/2" SAE 3000 psi/M							
G3 1 1/2" NPT		F3 2" SAE 3000 psi/UNC							
G4 2" NPT		F4 2 1/2" SAE 3000 psi/UNC							
G5 SAE 24 - 1 7/8" - 12 UN									
G6 SAE 32 - 2 1/2" - 12 UN									
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		Execution					
		N 20 bar		P01 MP Filtri standard					
				P02 With internal tube for reduced flow rate					
				Pxx Customized					

FILTER ELEMENT

Element series and size CU400		Configuration example: CU400 5 A10 A N P01					
Element length 5 6							
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		Filtration rating					
		Axx	Mxx	Pxx			
A NBR		•	•	•			
V FPM		•	•	•			
W NBR compatible with fluids HFA-HFB-HFC		•	•				
		Element Δp		Execution			
		N 20 bar		P01 MP Filtri standard			
				Pxx Customized			

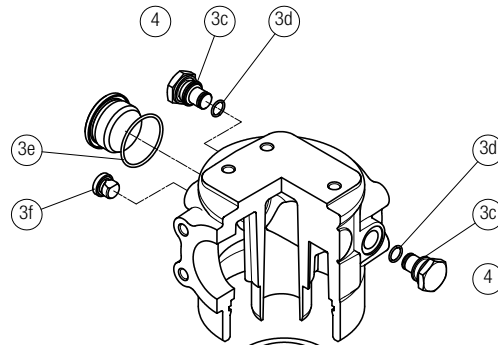
ACCESSORIES

Differential indicators		page			page
DEA	Electrical differential indicator	445	DTA	Electronic differential indicator	448
DEM	Electrical differential indicator	445-446	DVA	Visual differential indicator	448
DLA	Electrical / visual differential indicator	446-447	DVM	Visual differential indicator	448
DLE	Electrical / visual differential indicator	447			
Additional features		page			
T2	Plug	449			

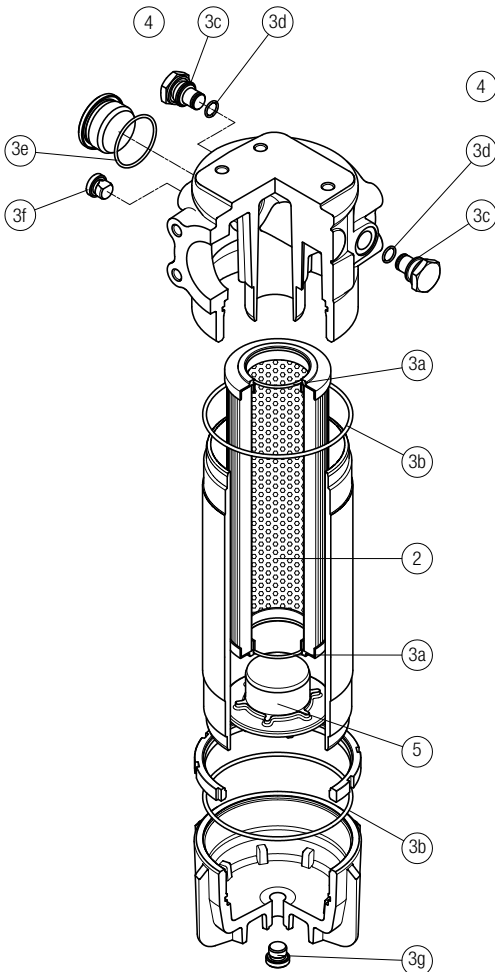


Order number for spare parts

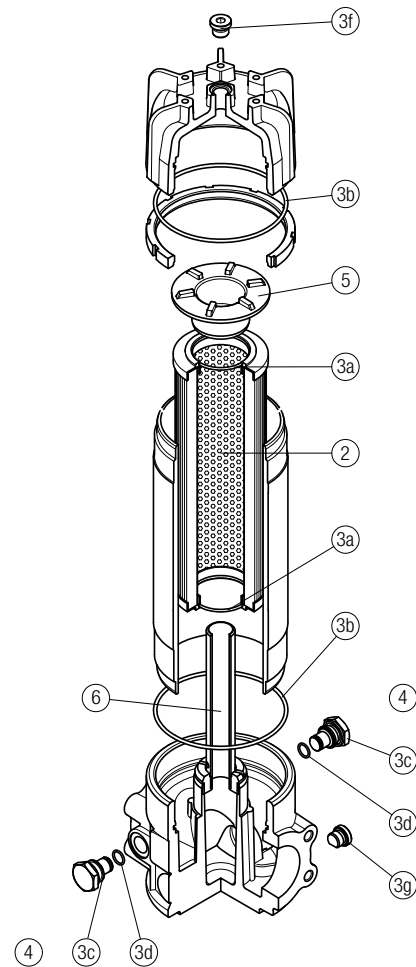
LMP 400 - 401
length 2 - 3 - 4



LMP 400 - 401
length 5 - 6



LMP 430 - 431
length 5 - 6



Item:	Q.ty: 1 pc.	Q.ty: 1 pc.	Q.ty: 2 pcs.	Q.ty: 2 pcs.	Q.ty: 1 pc.
Filter series	Filter element	Seal Kit code number NBR FPM	Indicator connection plug NBR FPM	Housing spigot no bypass with bypass	Tube assembly
LMP 400-401 length 2-3-4	See order table	02050391 02050392	T2H T2V	01044108	
LMP 400-401 length 5-6	See order table	02050393 02050394		01044108	
LMP 430-431 length 5-6	See order table	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 [dm³]

Filter series	Weights [kg]			Volumes [dm ³]		
	Length	2	3	Length	2	3
LMP 950-951		25.1	33.5		15	28

Filter series	Length	Filter element design - N Series						M25 M60 M90 M250
		A03	A06	A10	A16	A25		
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	

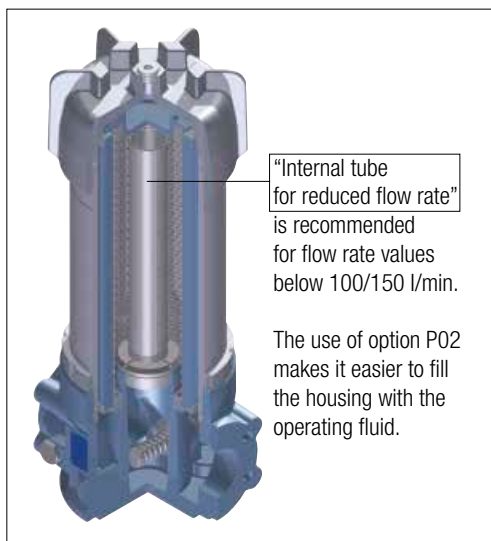
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

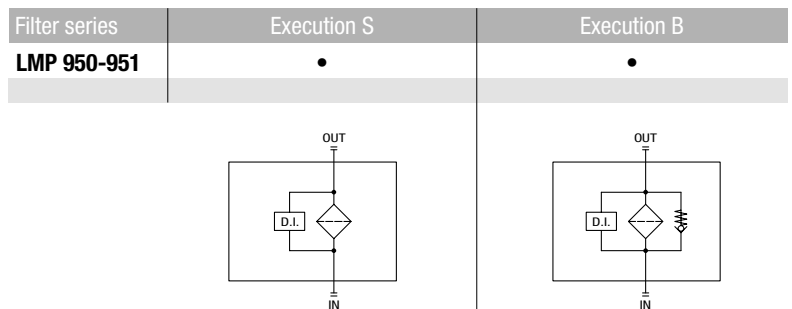
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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

Execution P02

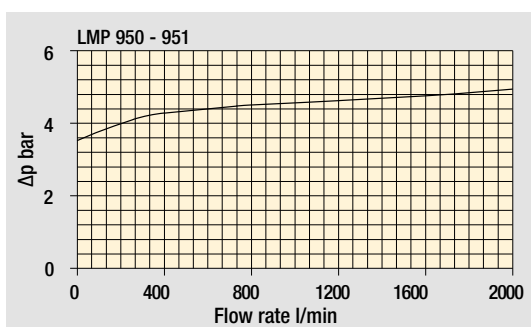
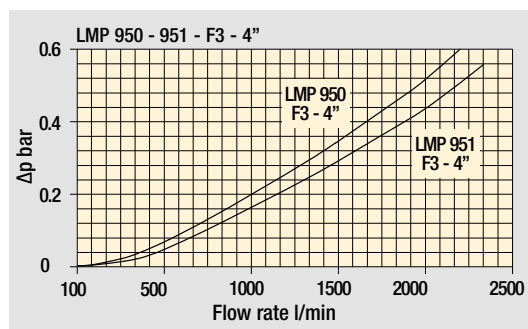
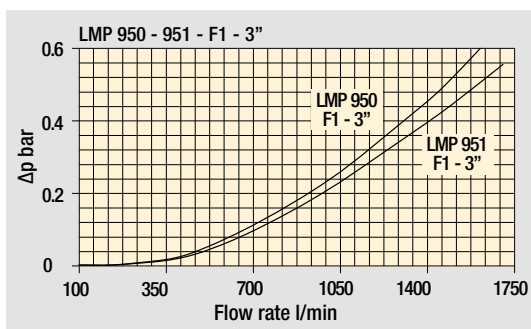


Hydraulic symbols



Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

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

LMP 950-951

Designation & Ordering code

COMPLETE FILTER

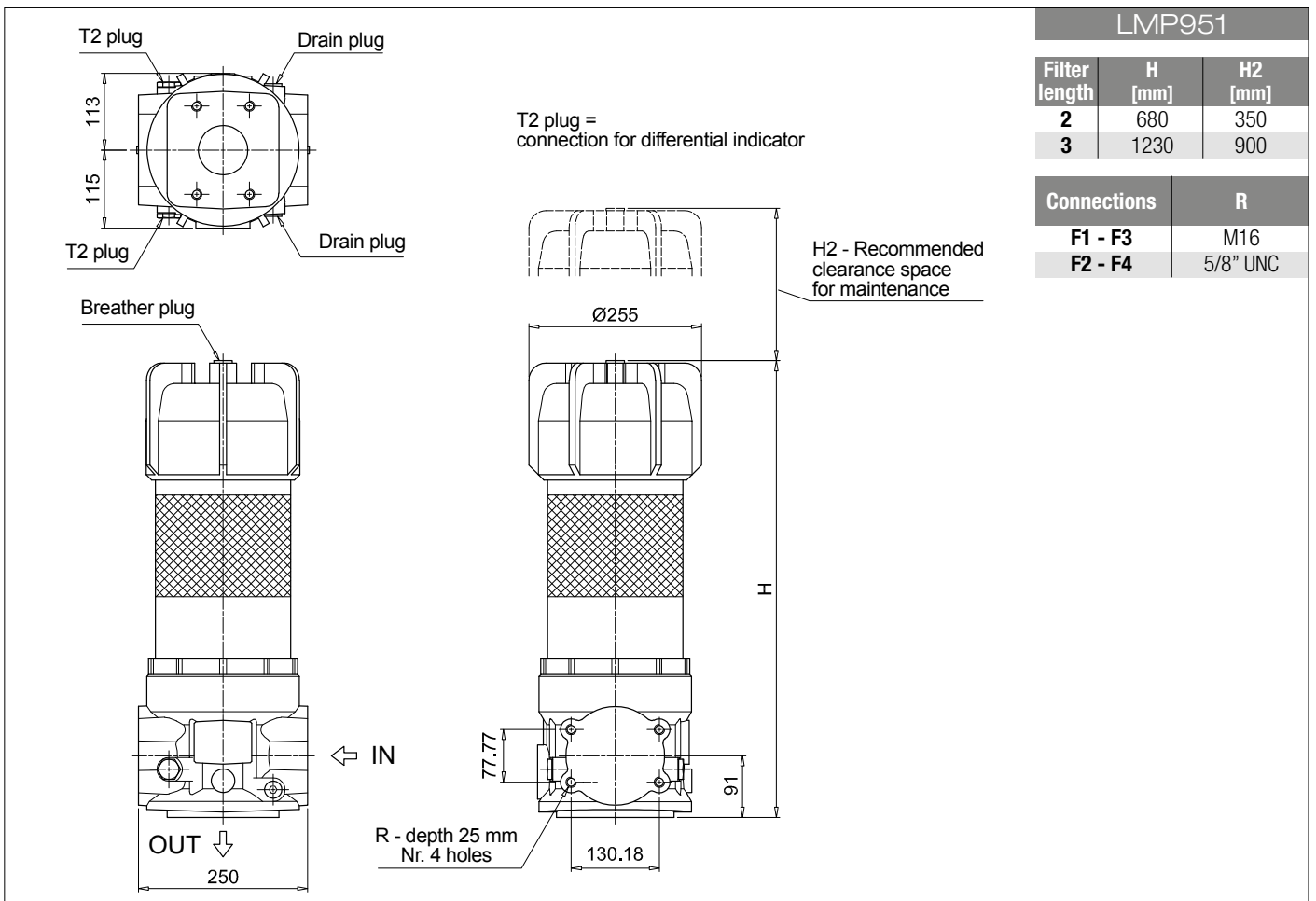
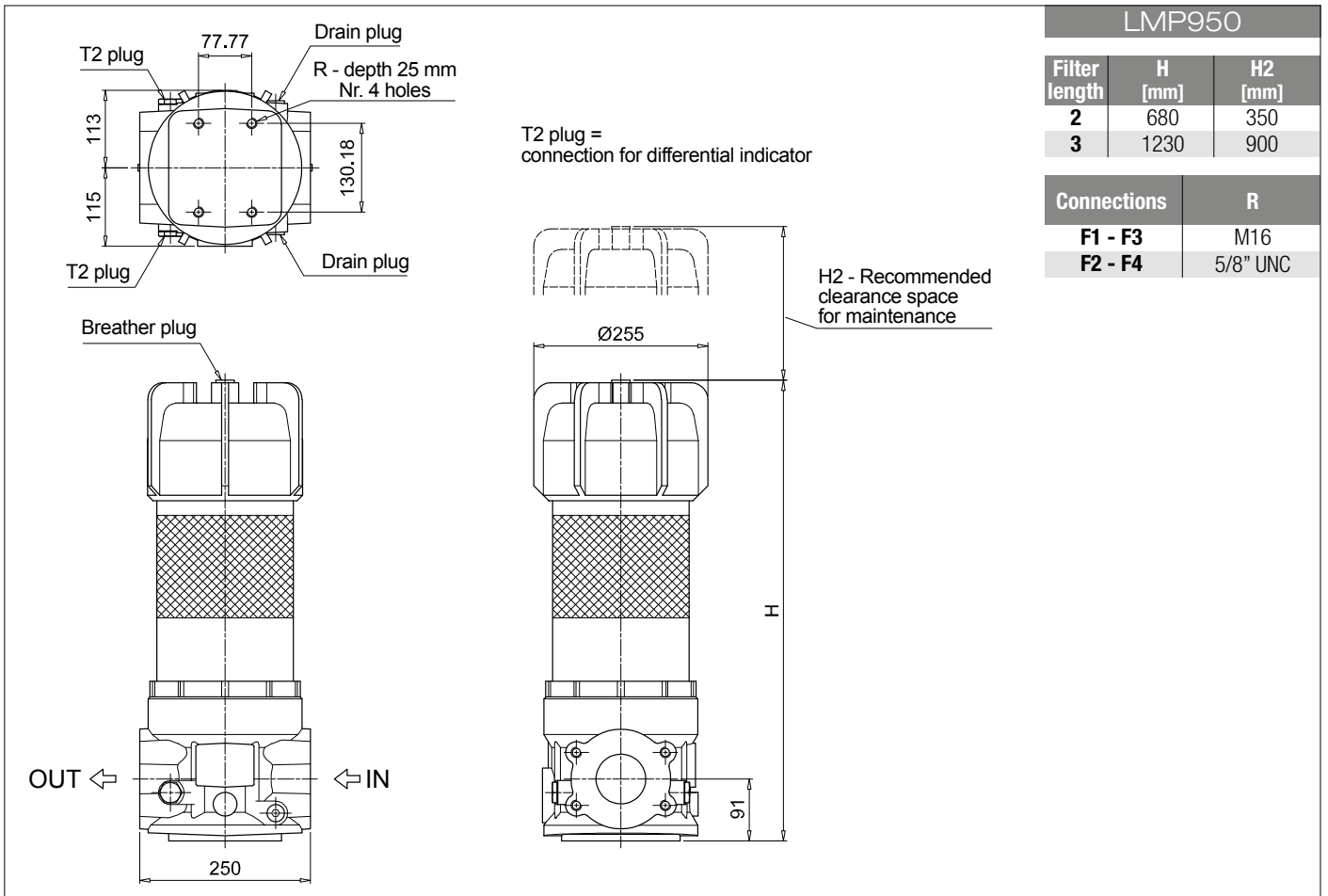
Series and size LMP950 LMP951	Configuration example: LMP951 2 B A F2 A10 N P01								
Length 2 3									
Bypass valve S Without bypass B 3.5 bar									
Seals and treatments A NBR V FPM									
Connections F1 3" SAE 3000 psi/M F2 3" SAE 3000 psi/UNC F3 4" SAE 3000 psi/M F4 4" SAE 3000 psi/UNC									
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									
	<table border="1"> <tr> <th>Element Δp</th> <th>Execution</th> </tr> <tr> <td>N 20 bar</td> <td>P01 MP Filtri standard</td> </tr> <tr> <td></td> <td>P02 With internal tube for reduced flow rate</td> </tr> <tr> <td></td> <td>Pxx Customized</td> </tr> </table>	Element Δp	Execution	N 20 bar	P01 MP Filtri standard		P02 With internal tube for reduced flow rate		Pxx Customized
Element Δp	Execution								
N 20 bar	P01 MP Filtri standard								
	P02 With internal tube for reduced flow rate								
	Pxx Customized								

FILTER ELEMENT

Element series and size CU950	Configuration example: CU950 2 A10 A N P01						
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							
	<table border="1"> <tr> <th>Element Δp</th> <th>Execution</th> </tr> <tr> <td>N 20 bar</td> <td>P01 MP Filtri standard</td> </tr> <tr> <td></td> <td>Pxx Customized</td> </tr> </table>	Element Δp	Execution	N 20 bar	P01 MP Filtri standard		Pxx Customized
Element Δp	Execution						
N 20 bar	P01 MP Filtri standard						
	Pxx Customized						

ACCESSORIES

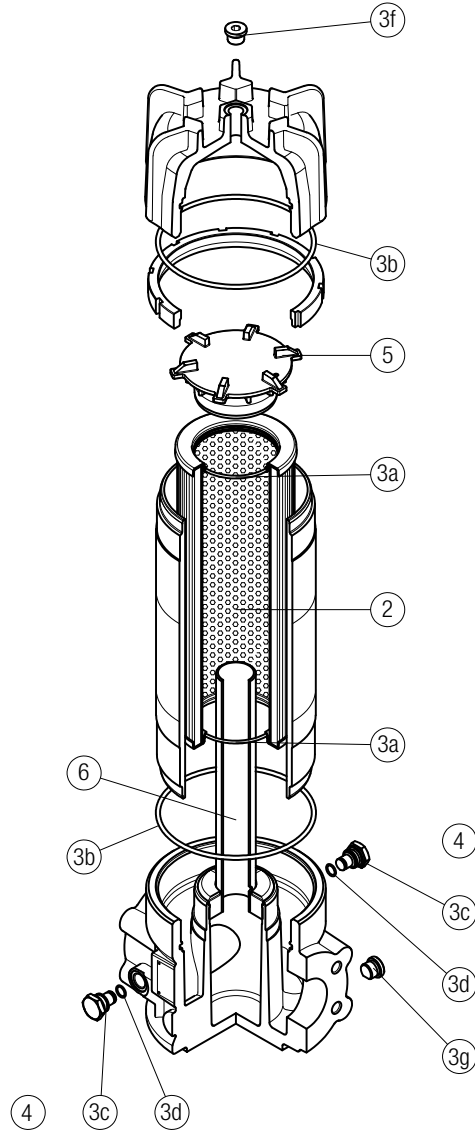
Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		page
T2 Plug	449	CFA Retaining clamp	450



LMP 950-951 SPARE PARTS

Order number for spare parts

LMP 950 - 951



Item:	Q.ty: 2 pcs. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)	Q.ty: 2 pcs. 4	Q.ty: 1 pc. 5	Q.ty: 1 pc. 6
Filter series	Filter element	Seal Kit code number NBR FPM	Indicator connection plug NBR FPM	Housing spigot no bypass with bypass	Tube assembly length 2 length 3
LMP 950-951 length 2-3	See order table	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 3000 l/min



Description

Technical data

Low & Medium Pressure filters

Maximum working pressure up to 2.5 MPa (25 bar)
Flow rate up to 3000 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 3000 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.

Δp 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 [dm³]

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

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90 M250
LMP 952	3	2172	2294	2766	3106	3256	3998
LMP 953	3	2842	2964	3403	3696	3820	4395
LMP 954	3	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 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

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

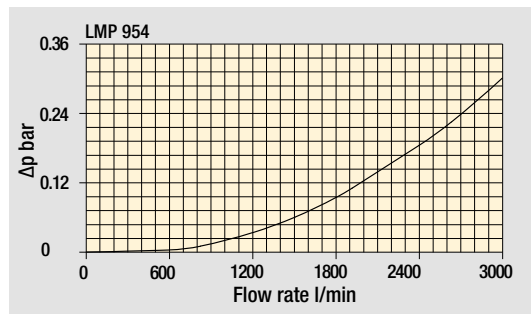
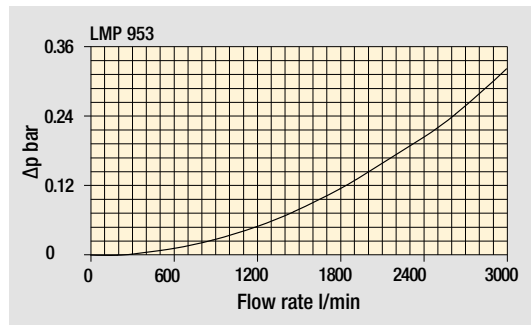
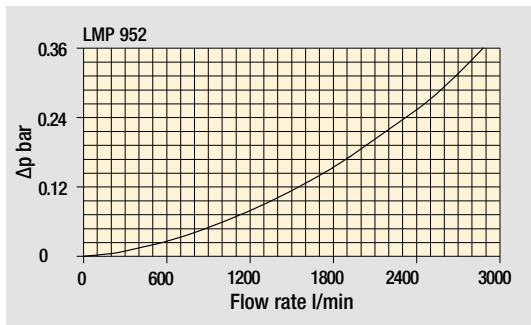
Hydraulic symbols

Filter series	Execution S - Execution B	Execution S - Execution B	Execution S - Execution B
LMP 952	•	•	•
LMP 953		•	
LMP 954			•

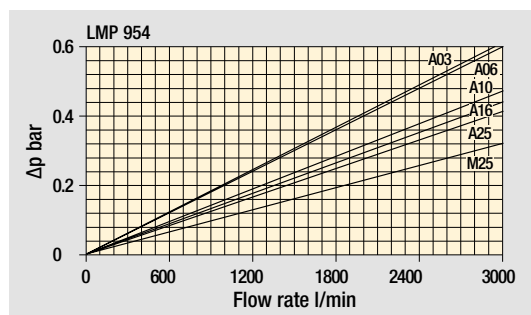
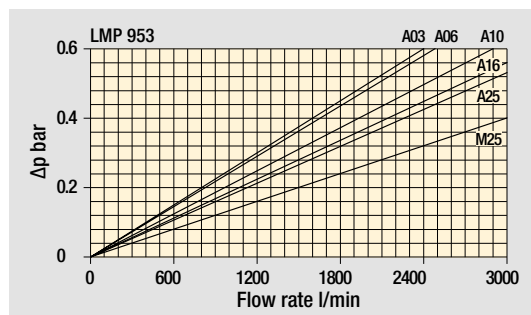
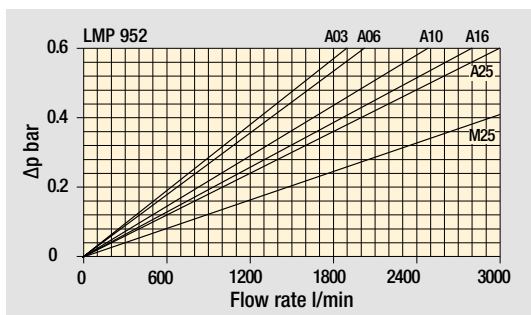
LMP 952-953-954 GENERAL INFORMATION

Pressure drop

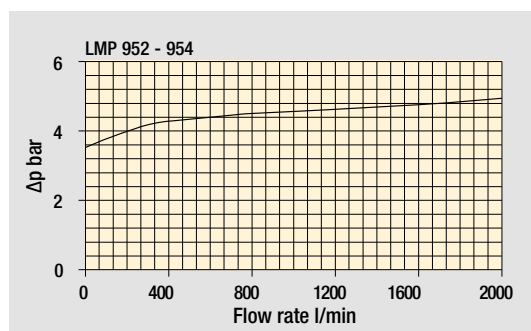
Filter housings Δp pressure drop



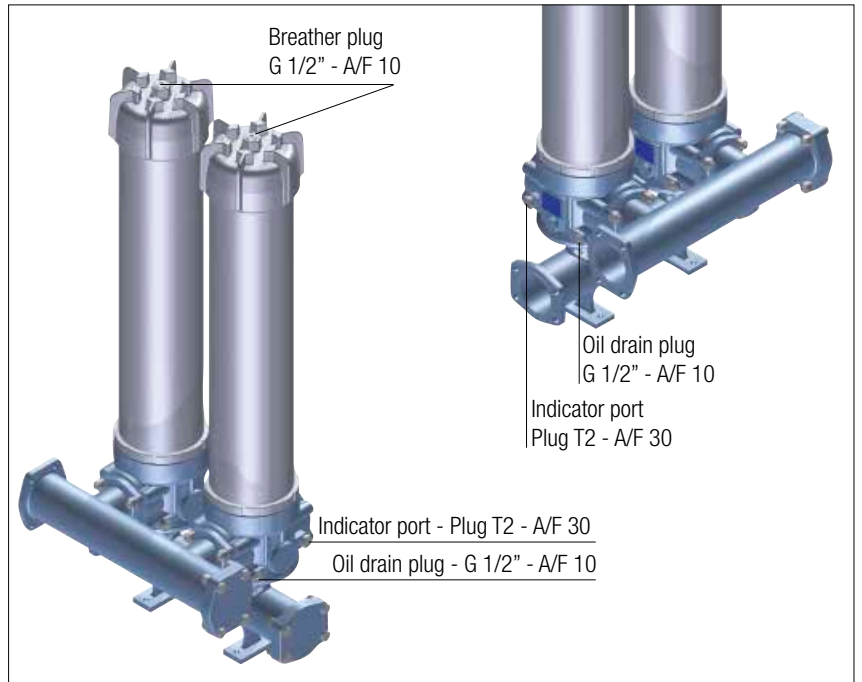
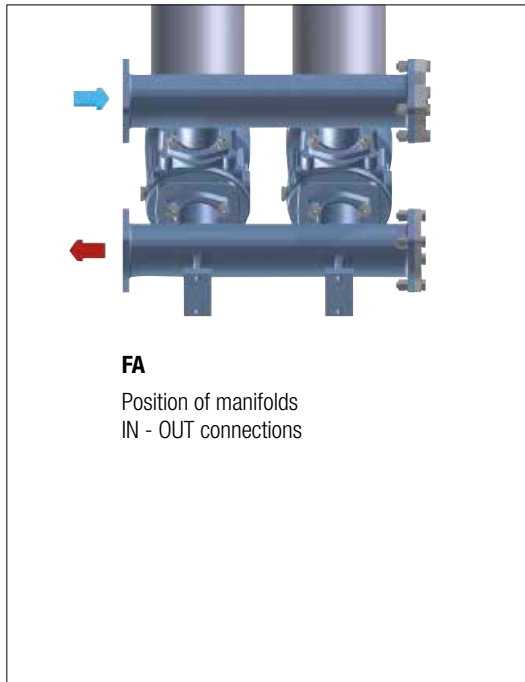
Pressure drop of filter complete with cartridge, oil viscosity 30 mm²/s (cSt)



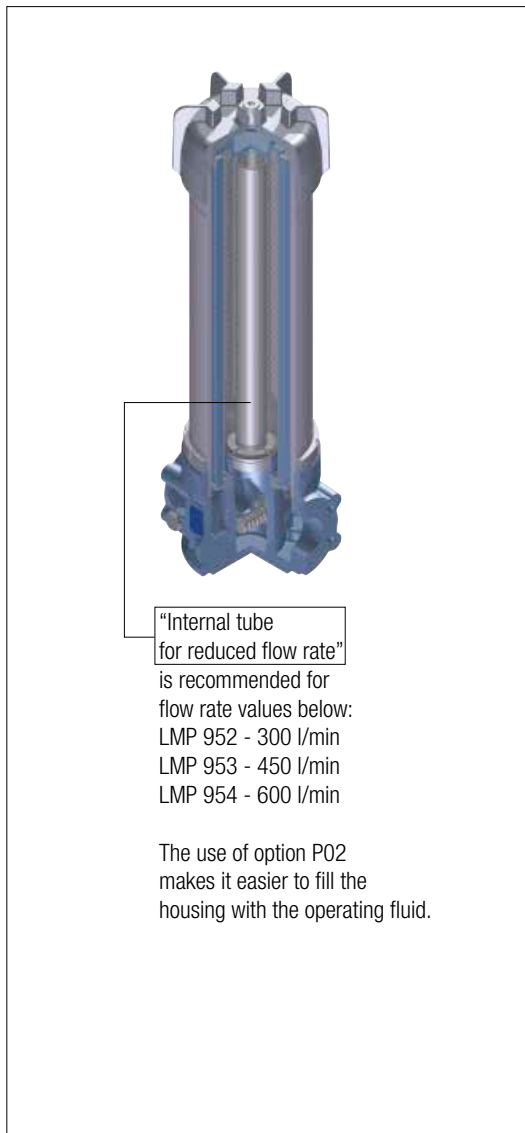
Bypass valve pressure drop



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

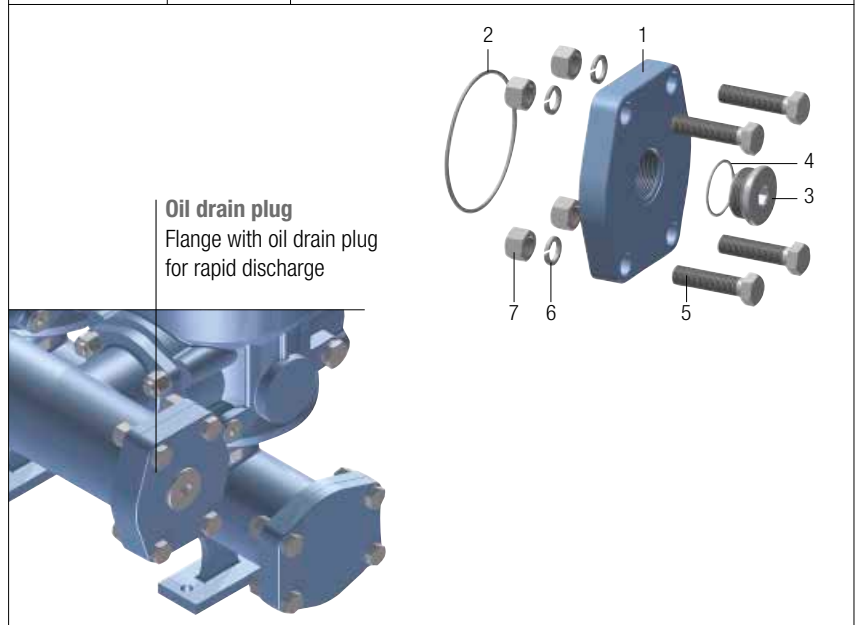


Execution P02



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	Configuration example: LMP952 3 B A FA A10 N P01																	
LMP952 LMP953 LMP954																		
Length	3																	
Bypass valve	S Without bypass B 3.5 bar																	
Seals and treatments	A NBR V FPM																	
Connections	FA 4" SAE 3000 psi																	
Filtration rating (filter media)	<table border="0"> <tr> <td>A03 Inorganic microfiber 3 µm</td> <td>M25 Wire mesh 25 µm</td> </tr> <tr> <td>A06 Inorganic microfiber 6 µm</td> <td>M60 Wire mesh 60 µm</td> </tr> <tr> <td>A10 Inorganic microfiber 10 µm</td> <td>M90 Wire mesh 90 µm</td> </tr> <tr> <td>A16 Inorganic microfiber 16 µm</td> <td></td> </tr> <tr> <td>A25 Inorganic microfiber 25 µm</td> <td></td> </tr> </table>								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	
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				Execution													
	N 20 bar				P01 MP Filtri standard P02 With internal tube for reduced flow rate Pxx Customized													

FILTER ELEMENT

Element series and size	Configuration example: CU950 3 A10 A N P01																
CU950																	
Element length	3																
Filter series and size	LMP952 Nr. 2 filter elements LMP953 Nr. 3 filter elements LMP954 Nr. 4 filter elements																
Filtration rating (filter media)	<table border="0"> <tr> <td>A03 Inorganic microfiber 3 µm</td> <td>M25 Wire mesh 25 µm</td> </tr> <tr> <td>A06 Inorganic microfiber 6 µm</td> <td>M60 Wire mesh 60 µm</td> </tr> <tr> <td>A10 Inorganic microfiber 10 µm</td> <td>M90 Wire mesh 90 µm</td> </tr> <tr> <td>A16 Inorganic microfiber 16 µm</td> <td></td> </tr> <tr> <td>A25 Inorganic microfiber 25 µm</td> <td></td> </tr> </table>							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	
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				Execution												
	N 20 bar				P01 MP Filtri standard Pxx Customized												

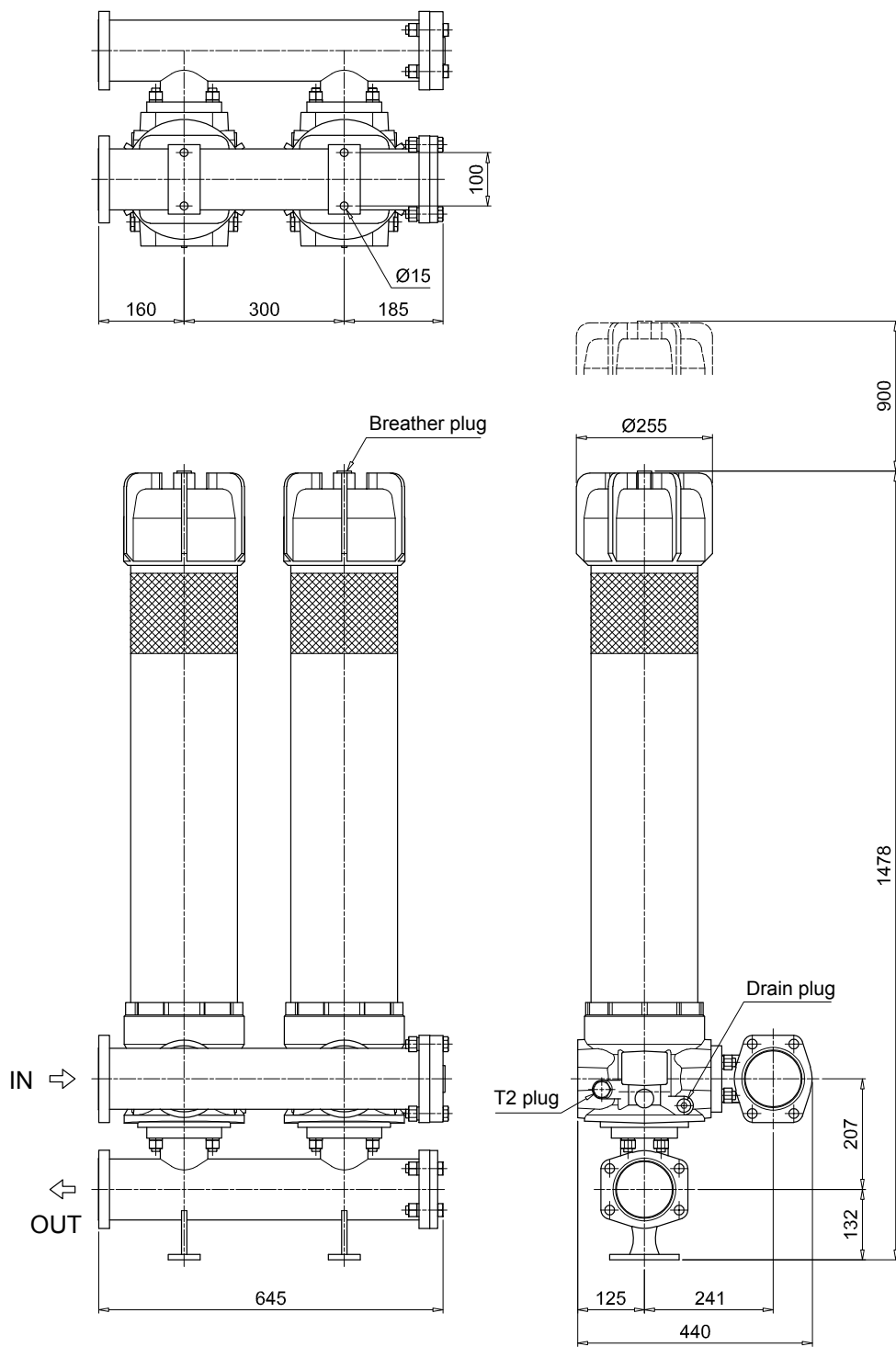
ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		

LMP 952-953-954

Dimensions

LMP952

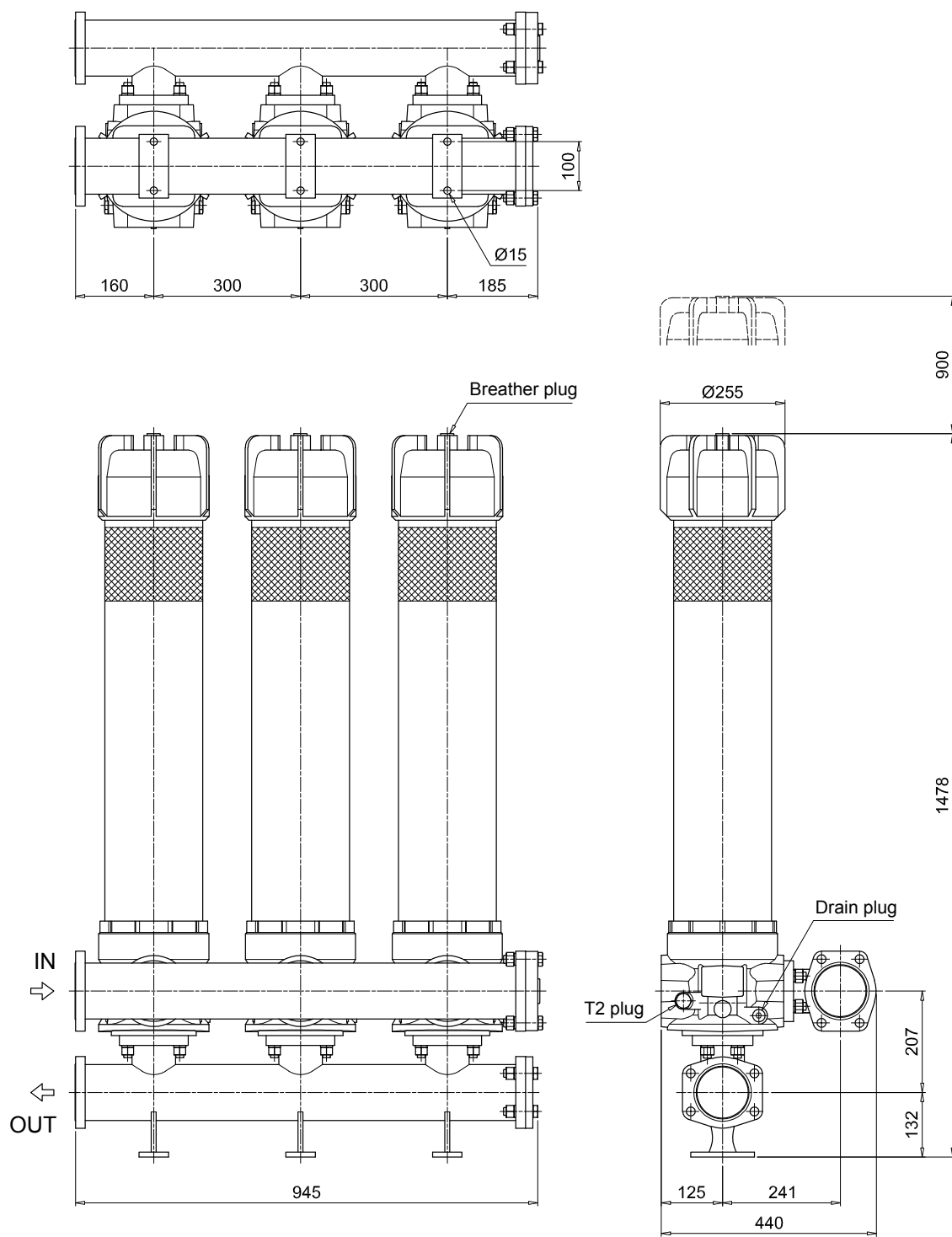


T2 plug =
connection for differential indicator

LMP 952-953-954

Dimensions

LMP953

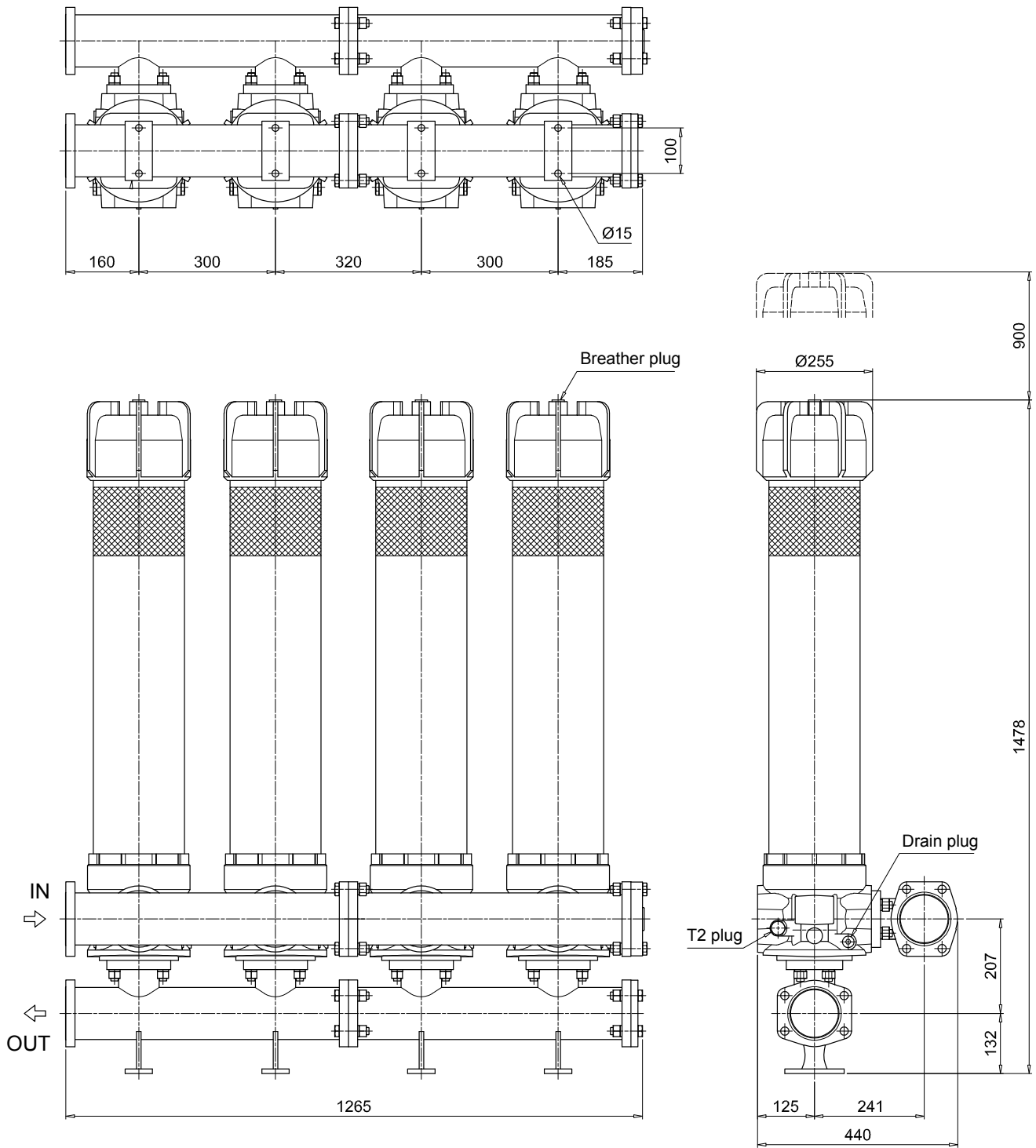


T2 plug =
connection for differential indicator

LMP 952-953-954

Dimensions

LMP954

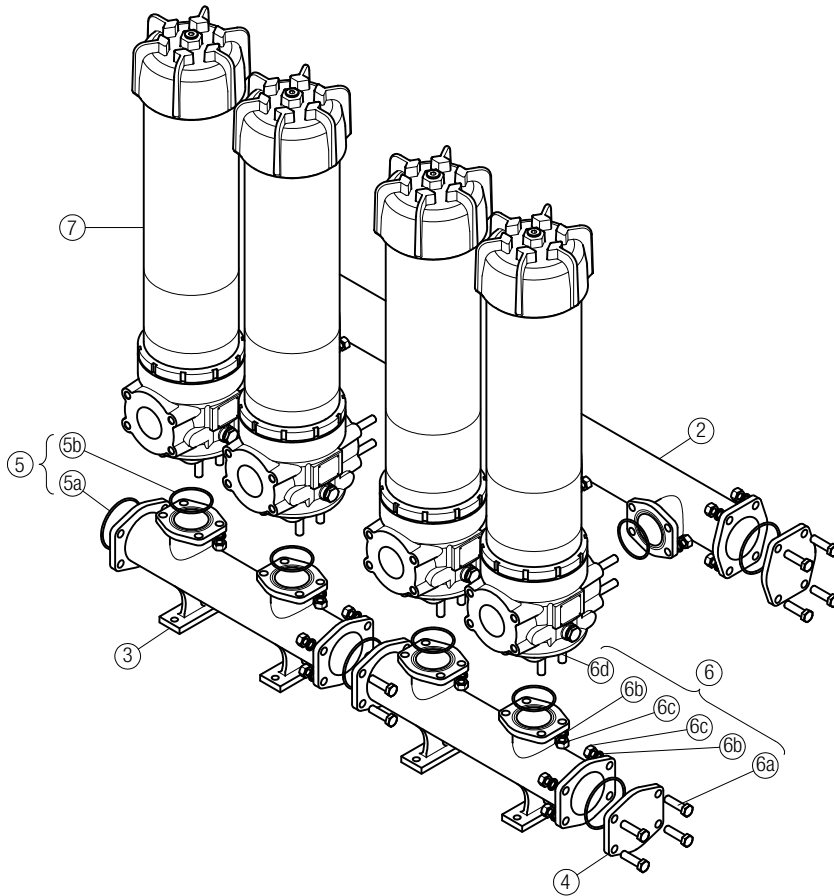


T2 plug =
connection for differential indicator

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 330 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 330 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 330 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 - Nylon

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.

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 [dm³]

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

GENERAL INFORMATION LMD 211

FILTER ASSEMBLY SIZING Flow rates [l/min]

Filter series	Length	Filter element design - N Series										
		A03	A06	A10	A16	A25	M25	M60	M90	M250	P10	P25
LMD 211	1	90	95	140	147	156	191	192	192	193	177	181
	2	113	121	158	162	173	192	192	193	193	181	183
	3	131	146	166	169	177	193	194	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 mm²/s (cSt) and a density of 0.86 kg/dm³.

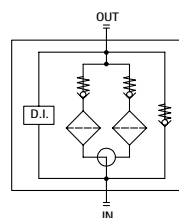
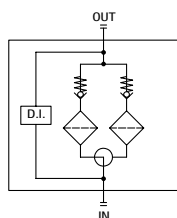
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

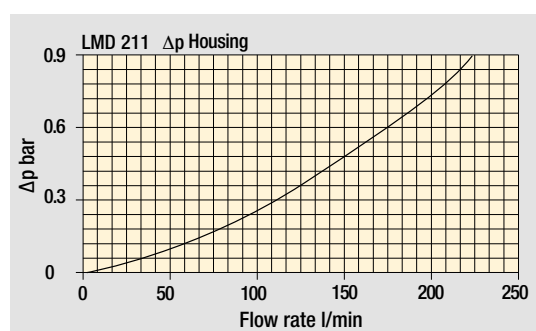
Hydraulic symbols

Filter series	Style S	Style B
LMD 211	•	•

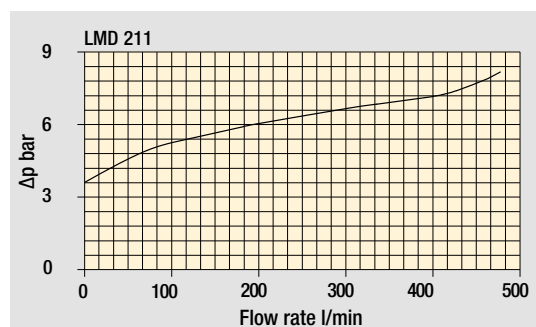


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



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

LMD 211

Designation & Ordering code

COMPLETE FILTER

Series and size	Configuration example: LMD211 3 B A C 6 A10 N P01																			
LMD211																				
Length	1 2 3																			
Bypass valve	S Without bypass B 3.5 bar																			
Seals and treatments	Filtration rating																			
A NBR	Axx	Mxx	Pxx																	
V FPM	•	•	•																	
W NBR compatible with fluids HFA-HFB-HFC	•	•																		
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)	<table border="0"> <tr> <td>A03 Inorganic microfiber 3 µm</td> <td>M25 Wire mesh 25 µm</td> </tr> <tr> <td>A06 Inorganic microfiber 6 µm</td> <td>M60 Wire mesh 60 µm</td> </tr> <tr> <td>A10 Inorganic microfiber 10 µm</td> <td>M90 Wire mesh 90 µm</td> </tr> <tr> <td>A16 Inorganic microfiber 16 µm</td> <td>P10 Resin impregnated paper 10 µm</td> </tr> <tr> <td>A25 Inorganic microfiber 25 µm</td> <td>P25 Resin impregnated paper 25 µm</td> </tr> </table>										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
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			Execution																
	N 20 bar			P01 MP Filtri standard Pxx Customized																

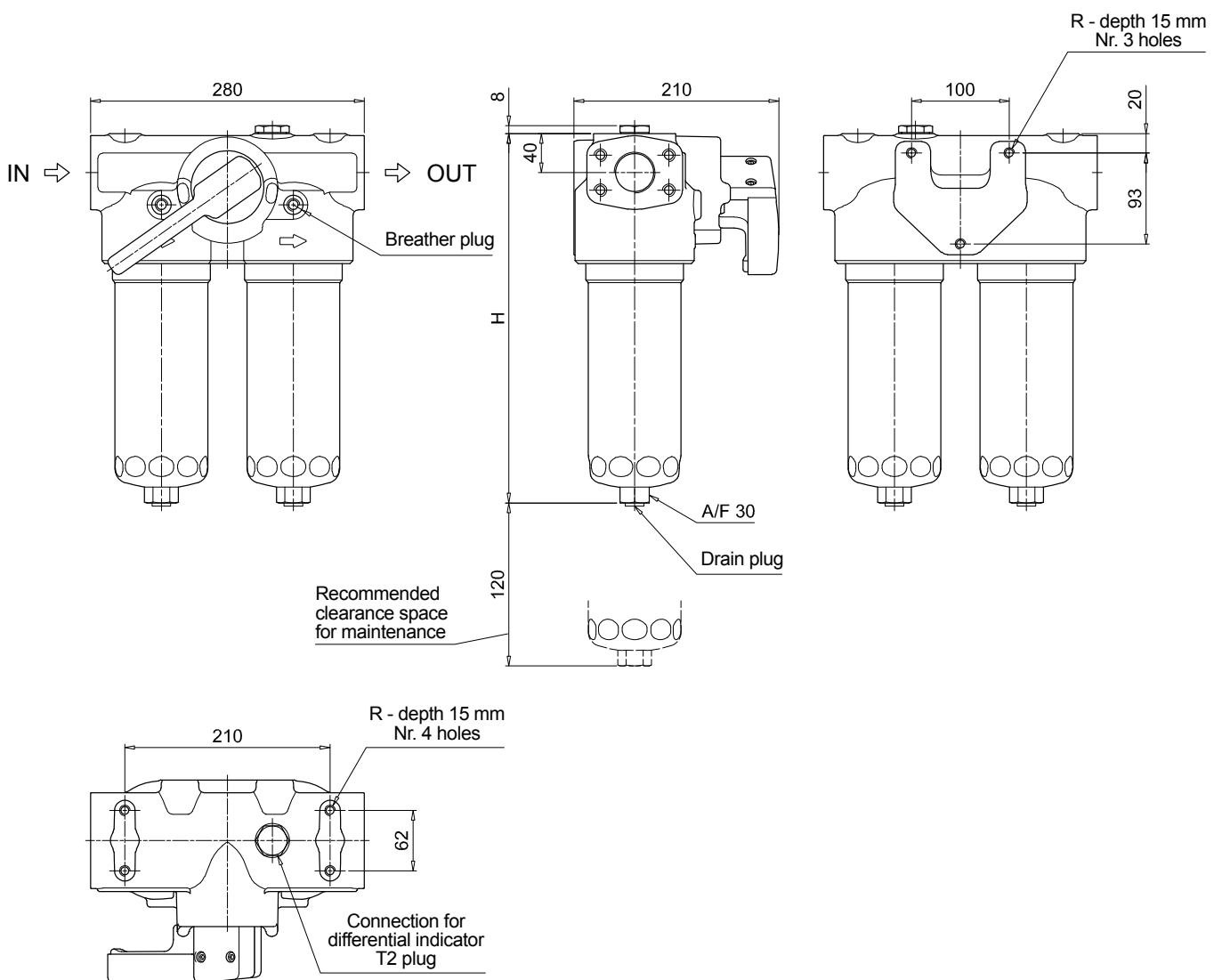
FILTER ELEMENT

Element series and size	Configuration example: CU210 3 A10 A N P01																	
CU210																		
Element length	1 2 3																	
Filtration rating (filter media)	<table border="0"> <tr> <td>A03 Inorganic microfiber 3 µm</td> <td>M25 Wire mesh 25 µm</td> </tr> <tr> <td>A06 Inorganic microfiber 6 µm</td> <td>M60 Wire mesh 60 µm</td> </tr> <tr> <td>A10 Inorganic microfiber 10 µm</td> <td>M90 Wire mesh 90 µm</td> </tr> <tr> <td>A16 Inorganic microfiber 16 µm</td> <td>P10 Resin impregnated paper 10 µm</td> </tr> <tr> <td>A25 Inorganic microfiber 25 µm</td> <td>P25 Resin impregnated paper 25 µm</td> </tr> </table>								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
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	Filtration rating																	
A NBR	Axx	Mxx	Pxx															
V FPM	•	•	•															
W NBR compatible with fluids HFA-HFB-HFC	•	•																
	Element Δp			Execution														
	N 20 bar			P01 MP Filtri standard Pxx Customized														

ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		

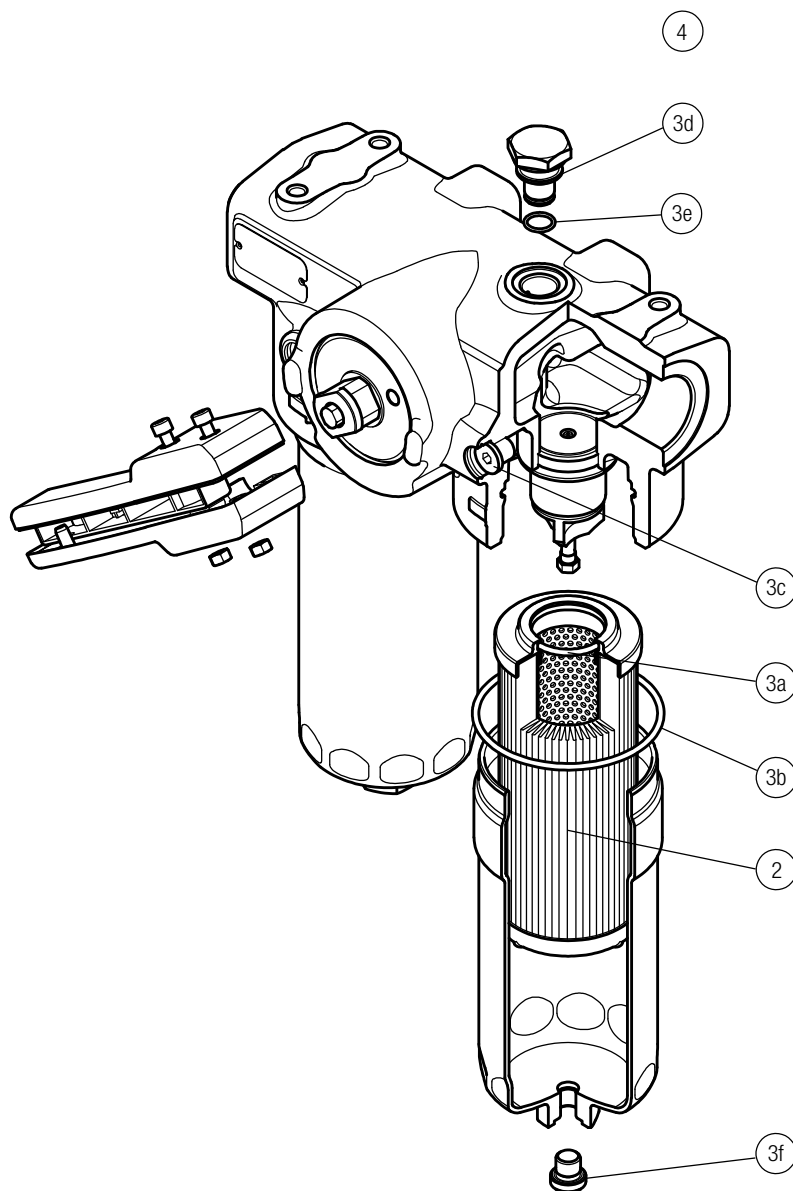
LMD211	
Filter length	H [mm]
1	383
2	513
3	651
Connections	R
C	M10
F - I	3/8" UNC
L	M10
M - N	3/8" UNC



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
	2	3	3a ÷ 3f	4	T2H	T2V

LMD 400-401 & 431 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 590 l/min



Description

Technical data

Low & Medium Pressure filters

Duplex

Maximum working pressure up to 1.6 MPa (16 bar)

Flow rate up to 590 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 590 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.

Δp 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

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



Weights [kg] and volumes [dm³]

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

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90 M250	P10	P25
LMD 400 - 401	4	308	349	453	474	530	628	547	567
	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597
LMD 431	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597

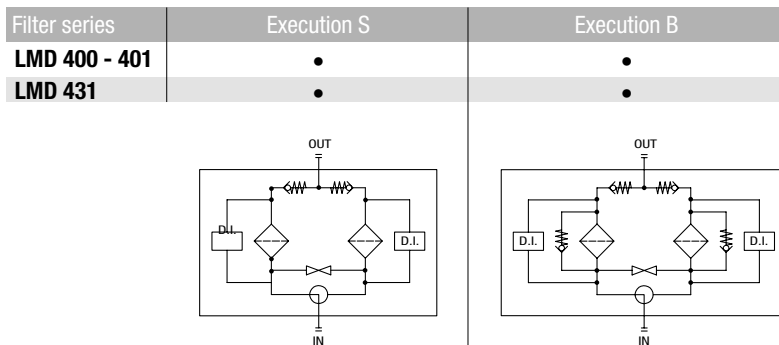
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

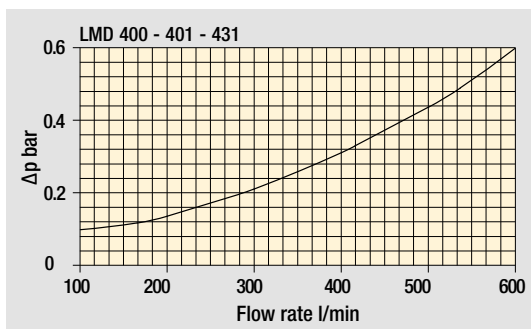
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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

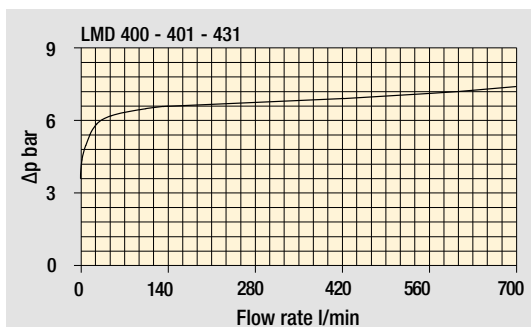
Hydraulic symbols



Pressure drop
Filter housings Δp pressure drop

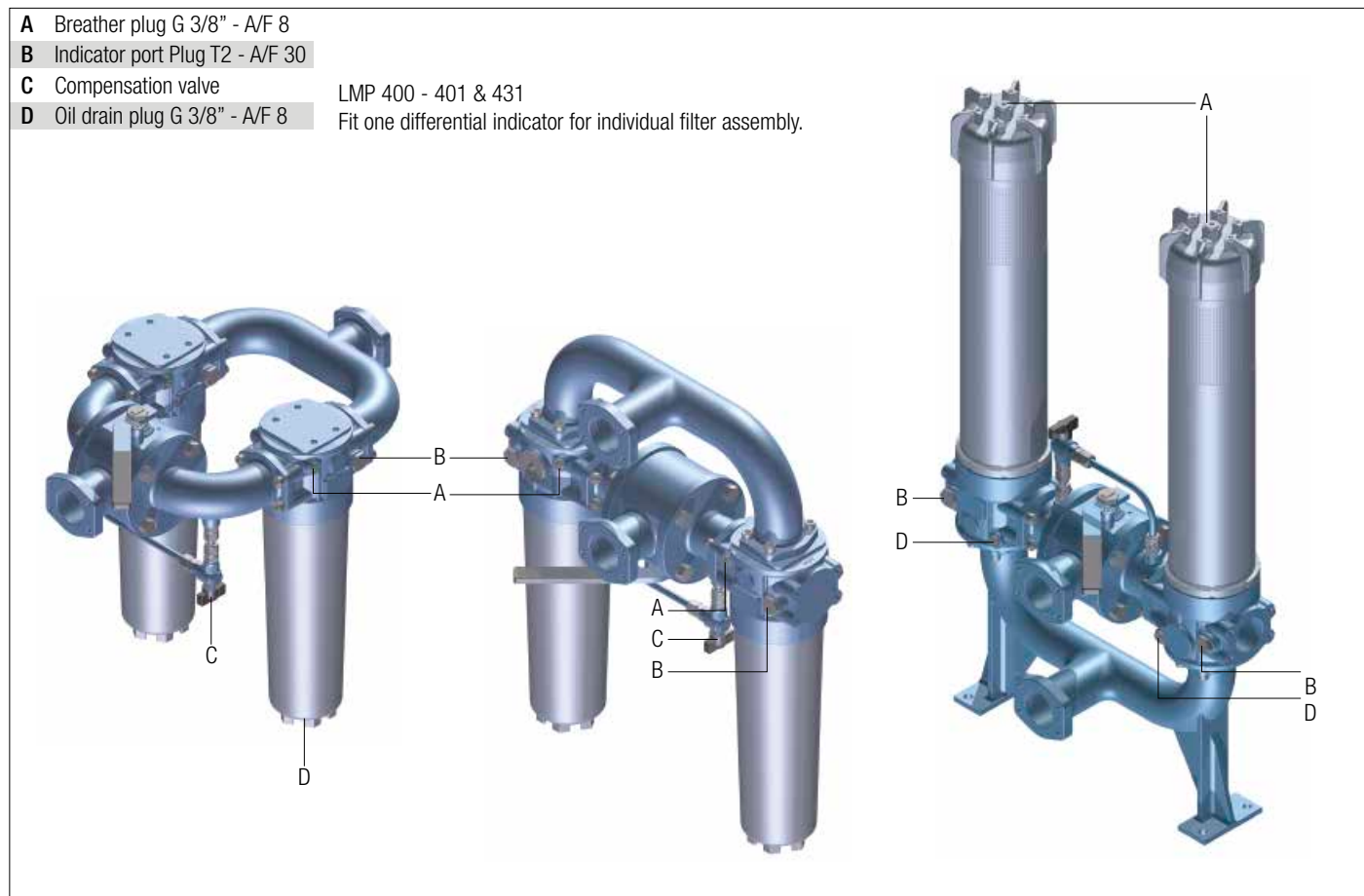


Bypass valve pressure drop

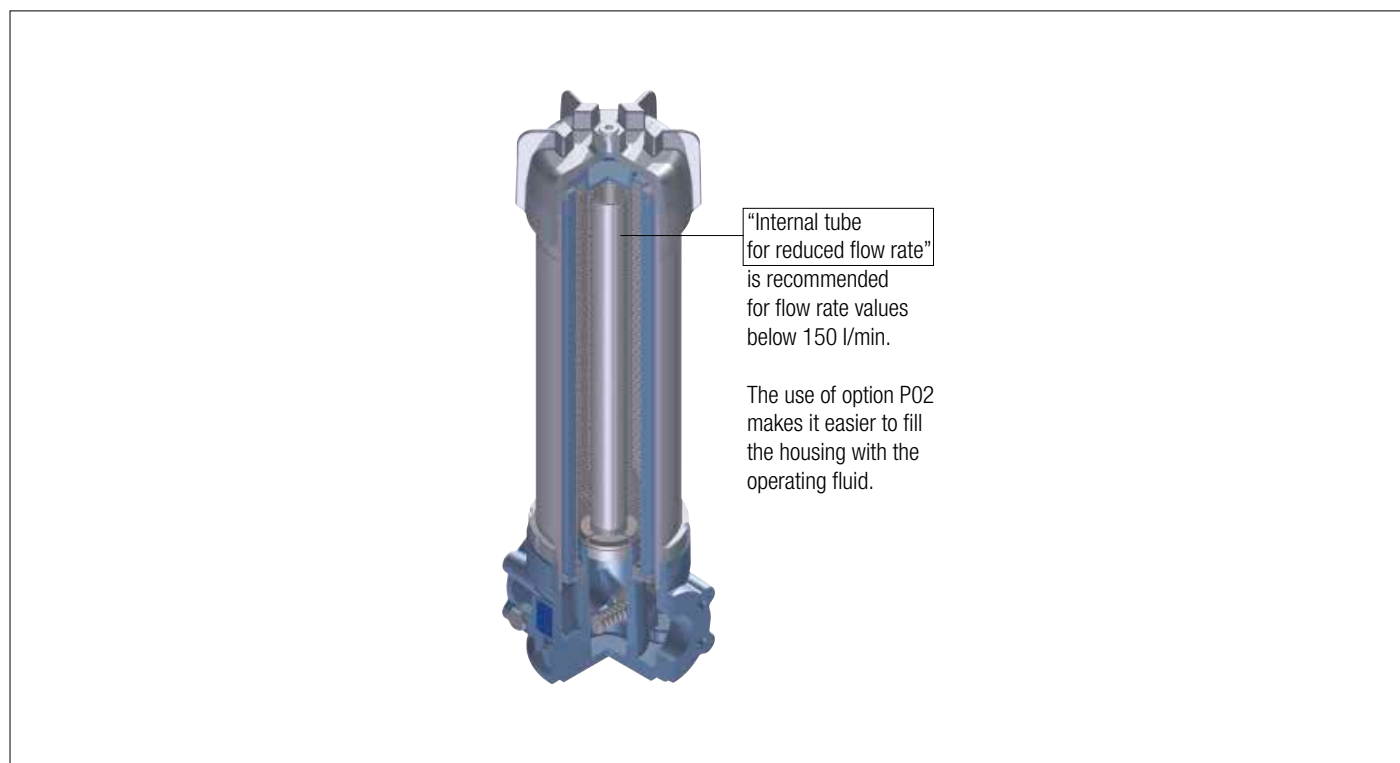


The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Focus on



LMD 431: Execution P02



LMD 400-401

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: LMD401 4 B V F1 A10 N P01									
LMD400 LMD401											
Length											
4 5 6											
Bypass valve											
S Without bypass		B 3.5 bar									
Seals and treatments		Filtration rating									
V FPM		Axx Mxx Pxx									
Connections		LMD400		LMD401							
F1 2 1/2" SAE 3000 psi/M		•		•							
F2 2 1/2" SAE 3000 psi/UNC		•		•							
F3 2 1/2" SAE 3000 psi/M, In-line connections				•							
F4 2 1/2" SAE 3000 psi/UNC, In-line connections				•							
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										Filter length	
N 20 bar										4 5 6	
										Execution	
										P01 MP Filtri standard	
										P02 Maintenance from the bottom of the housing	
										Pxx Customized	

FILTER ELEMENT

Element series and size		Configuration example: CU400 4 A10 V N P01									
CU400											
Element length											
4 5 6											
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		Filtration rating									
V FPM		Axx Mxx Pxx									
										Element Δp	
										N 20 bar	
										Execution	
										P01 MP Filtri standard	
										Pxx Customized	

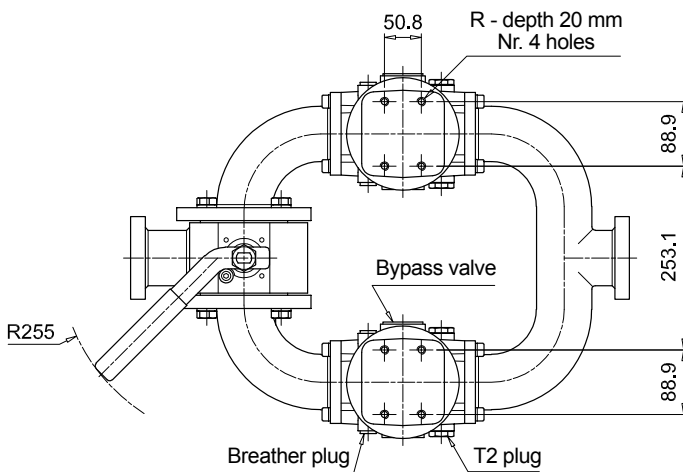
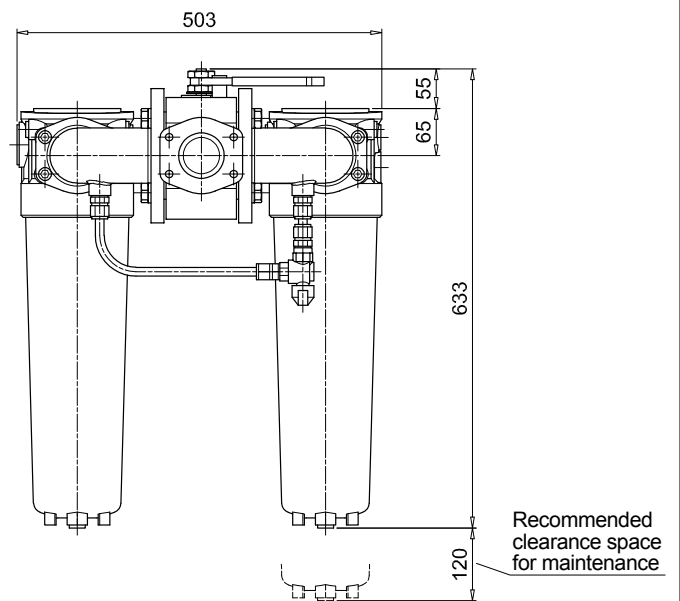
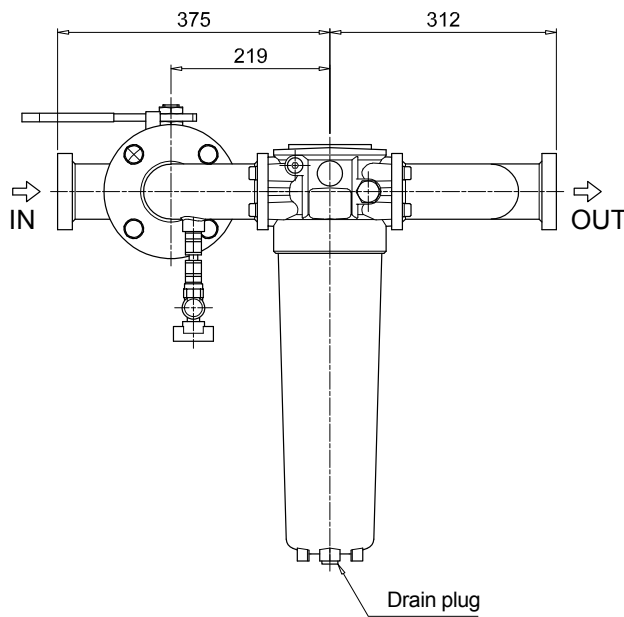
ACCESSORIES

Differential indicators		page		page	
DEA Electrical differential indicator		445	DTA Electronic differential indicator		448
DEM Electrical differential indicator		445-446	DVA Visual differential indicator		448
DLA Electrical / visual differential indicator		446-447	DVM Visual differential indicator		448
DLE Electrical / visual differential indicator		447			
Additional features		page			
T2 Plug		449			

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

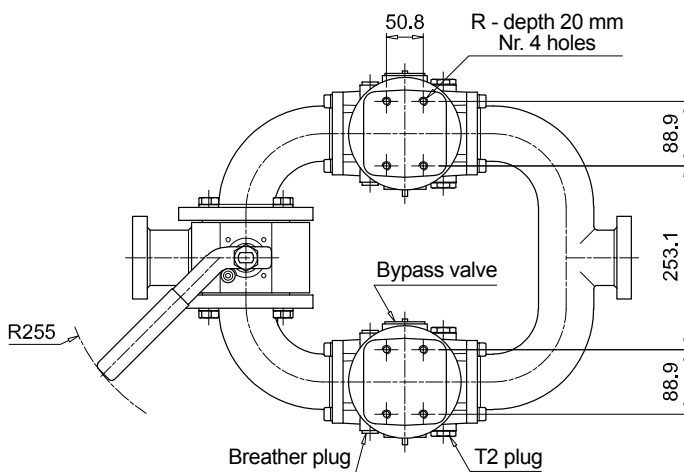
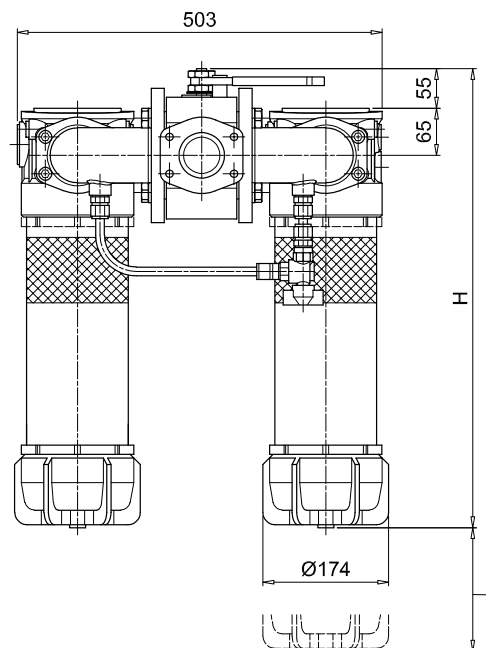
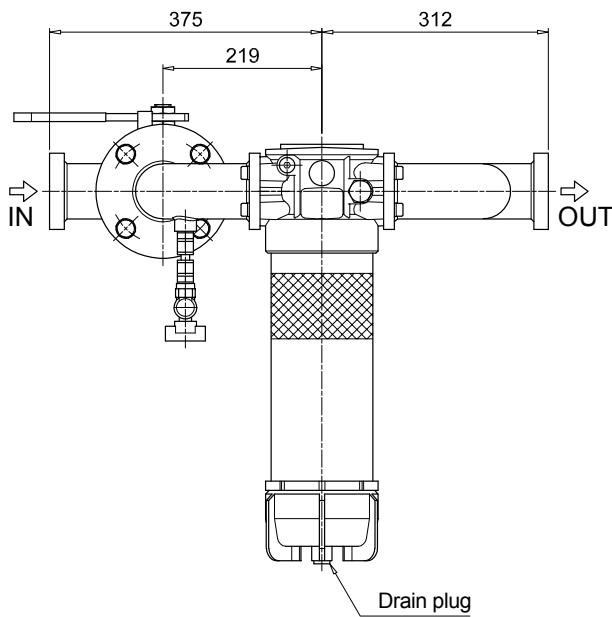
Dimensions

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

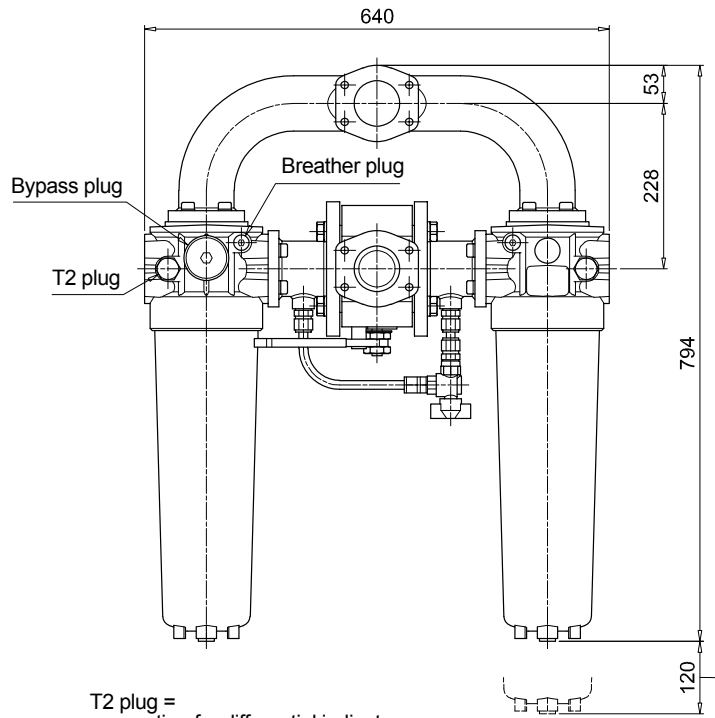
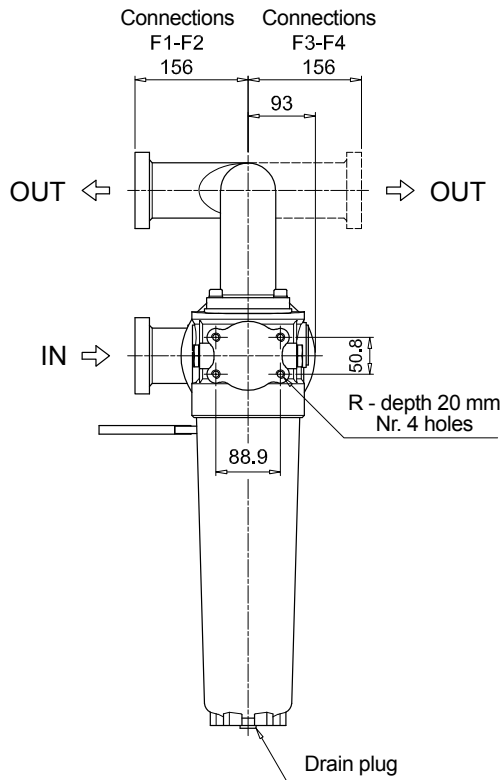


T2 plug =
Connection for differential indicator

LMD 400-401

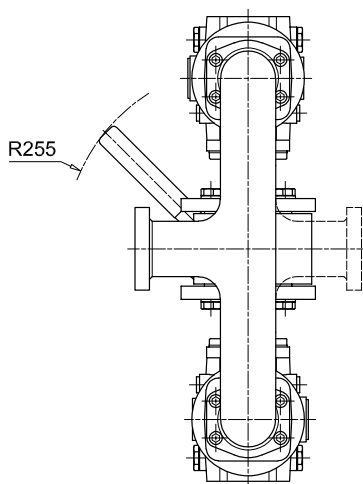
Dimensions

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



T2 plug = connection for differential indicator

Recommended clearance space for maintenance



LMD 400-401

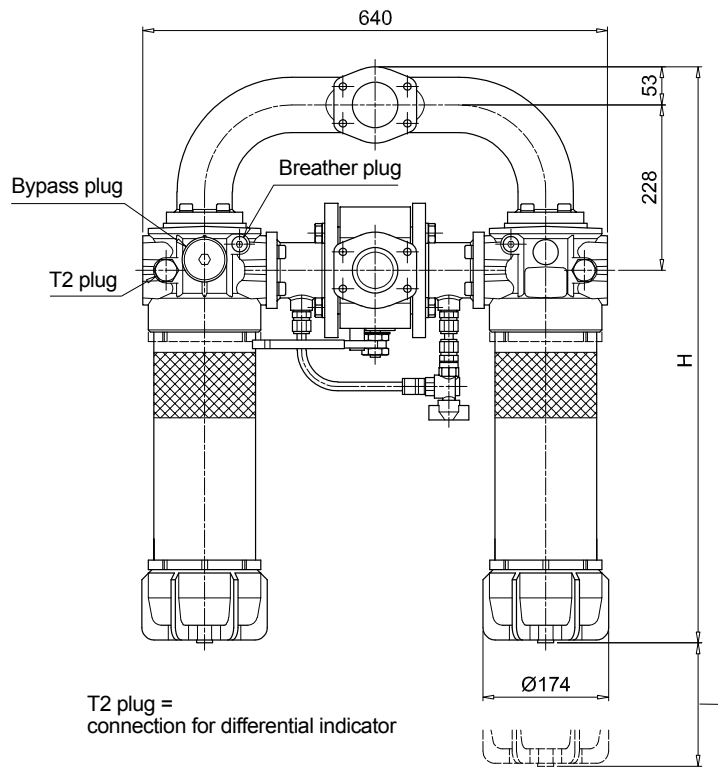
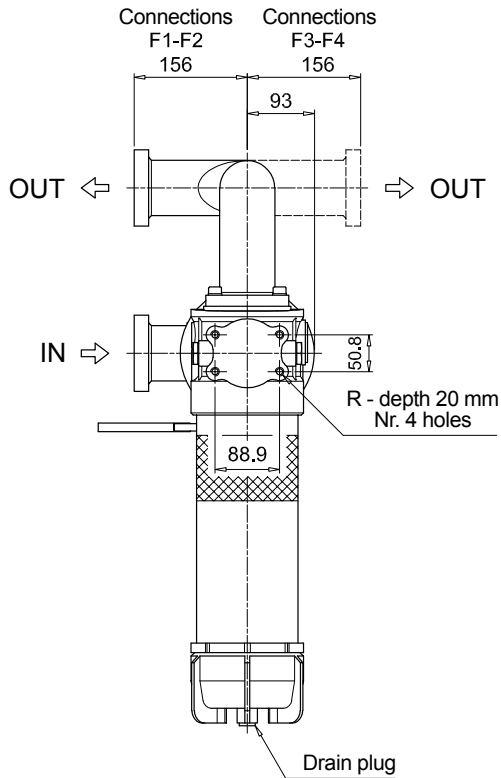
Dimensions

LMD401

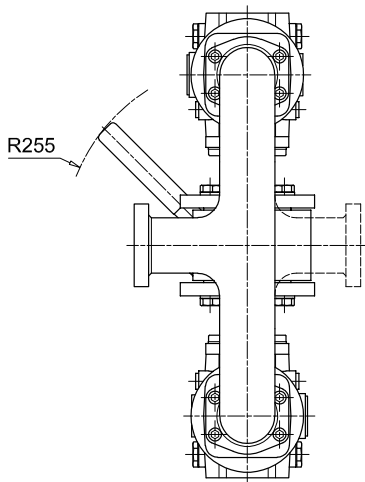
Length 5 - 6

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

Series and size	Configuration example: LMD431 5 B V F1 A10 N P01									
LMD431										
Length	5 6									
Bypass valve	S Without bypass B 3.5 bar									
Seals and treatments	Filtration rating									
V FPM	Axx	Mxx	Pxx							
V	•	•	•							
Connections										
F1	2 1/2" SAE 3000 psi/M									
F2	2 1/2" SAE 3000 psi/UNC									
F3	2 1/2" SAE 3000 psi/M, In-line connections									
F4	2 1/2" SAE 3000 psi/UNC, In-line connections									
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									
	P02 With internal tube for reduced flow rate									
	Pxx Customized									

FILTER ELEMENT

Element series and size	Configuration example: CU400 5 A10 V N P01						
CU400							
Element length	5 6						
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	Filtration rating						
V FPM	Axx	Mxx	Pxx				
V	•	•	•				
Element Δp	N 20 bar						
Execution	P01 MP Filtri standard						
	Pxx Customized						

ACCESSORIES

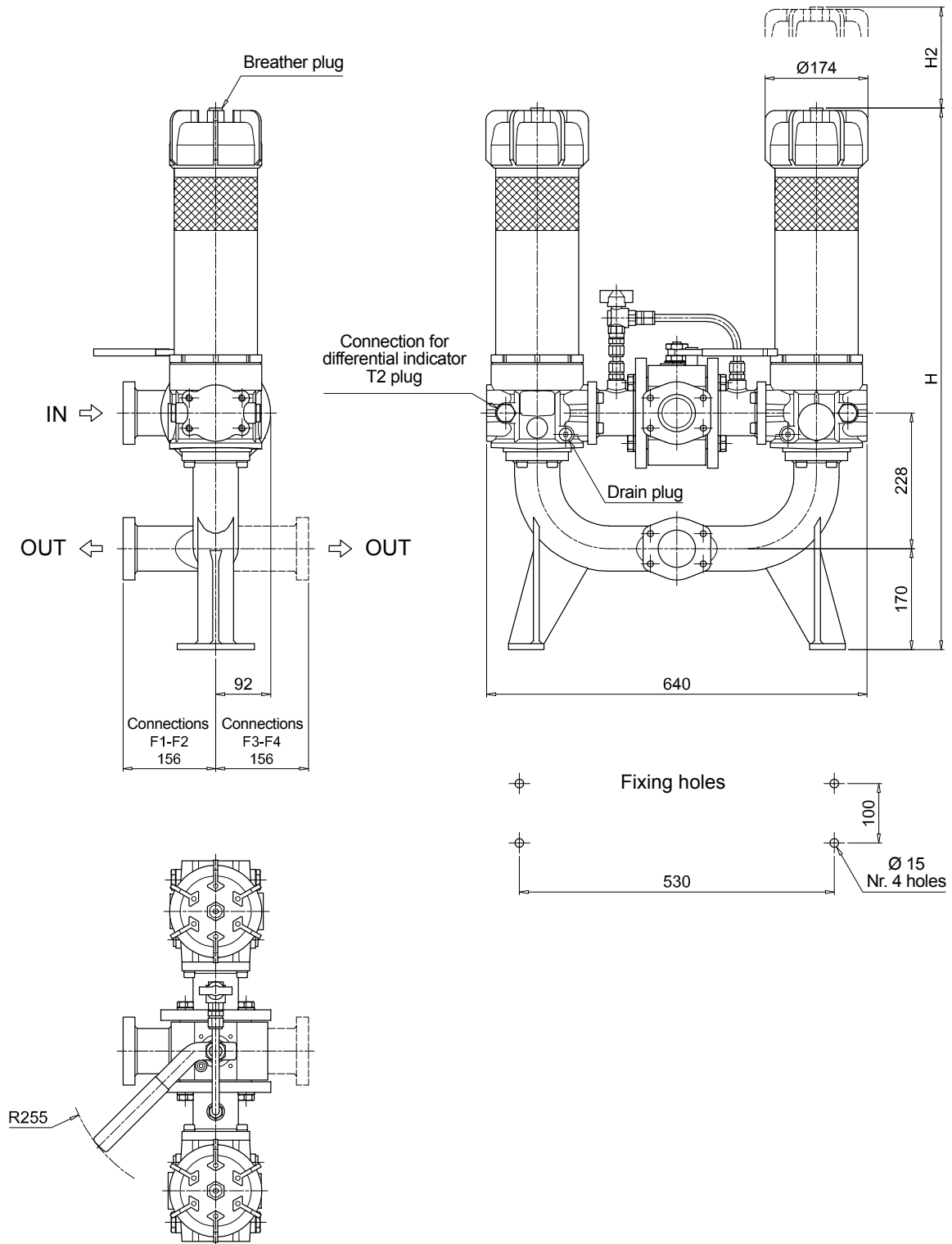
Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		

LMD 431

Dimensions

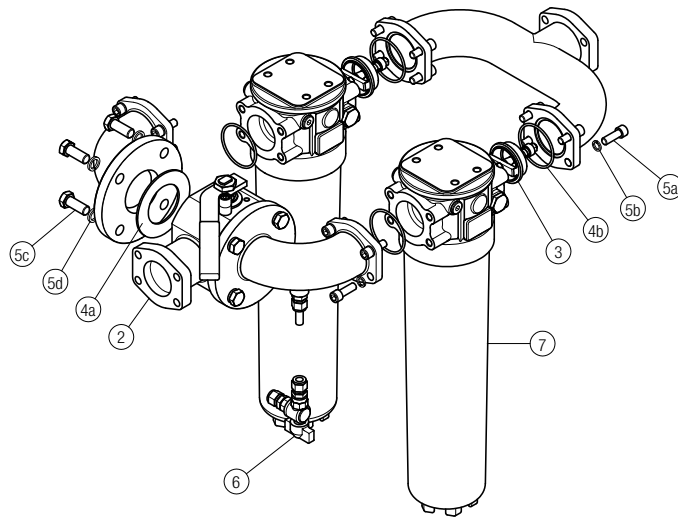
LMD431

Filter length	H [mm]	H2 [mm]
5	1161	660
6	1491	690



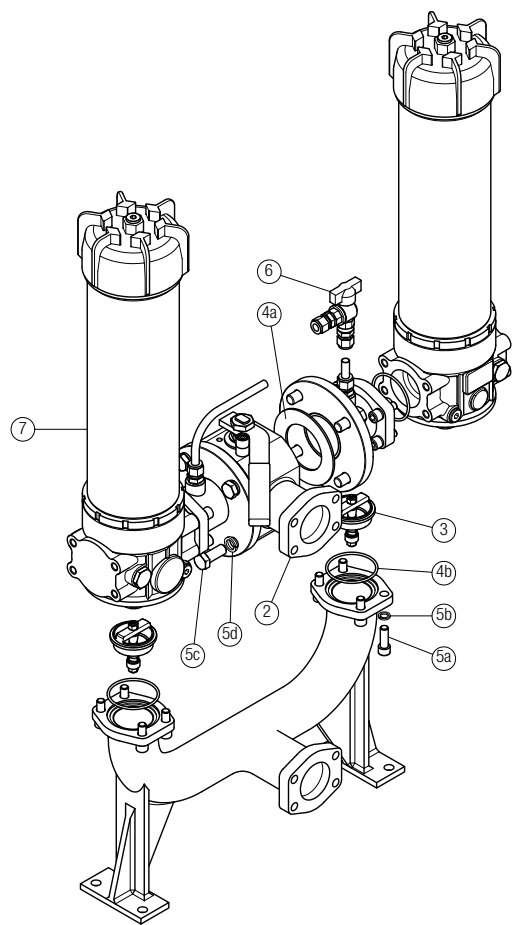
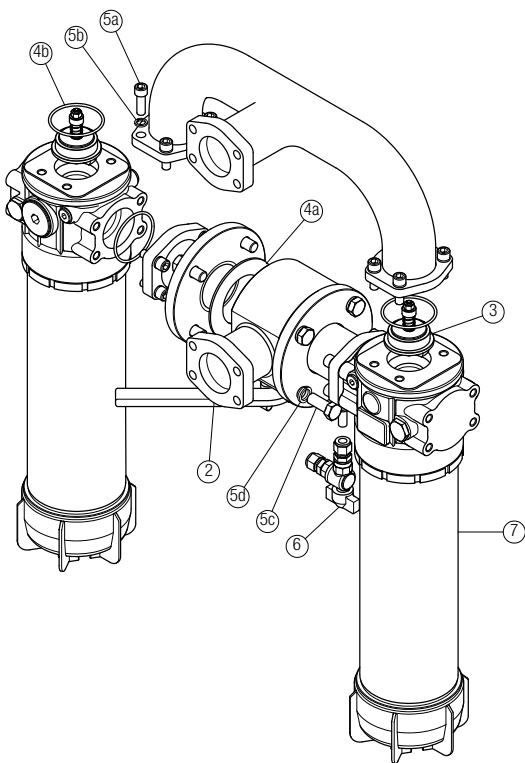
Order number for spare parts

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
LMD 400-401-431	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

Δp 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° C to +110° C

Connections

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

Note

LMD 951 filters are provided for vertical mounting



Weights [kg] and volumes [dm³]

Filter series	Weights [kg]		Volumes [dm ³]	
	DN 80	DN 100	DN 80	DN 100
LMD 951	102	130	62	66

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90 M250
LMD 951	3	853	884	995	1066	1096	1233

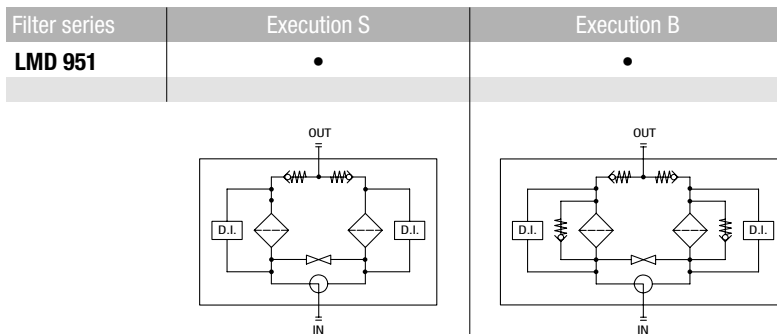
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

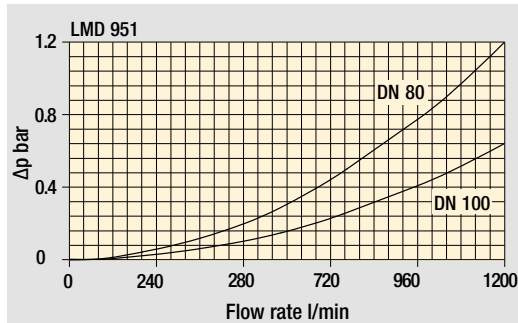
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

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

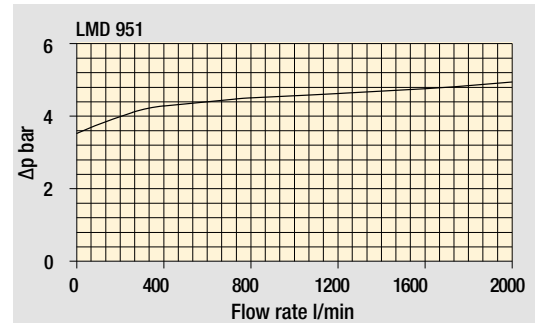
Hydraulic symbols



Pressure drop



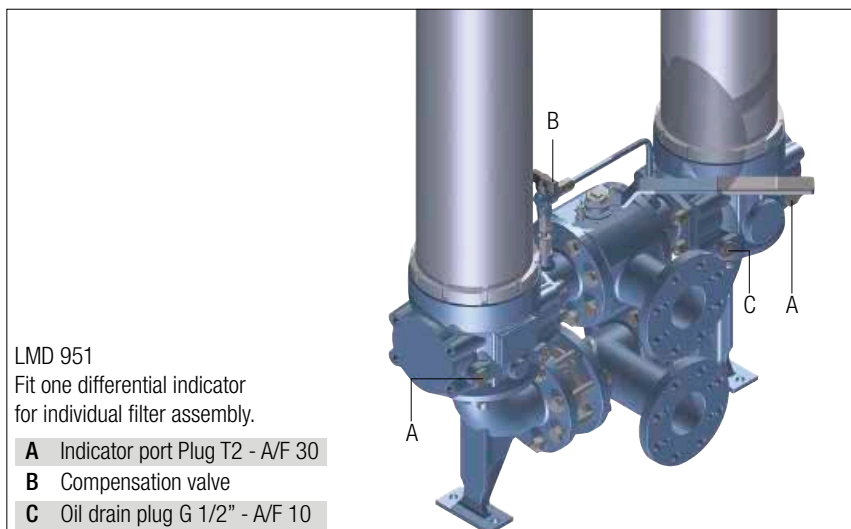
Filter housings
 Δp pressure drop



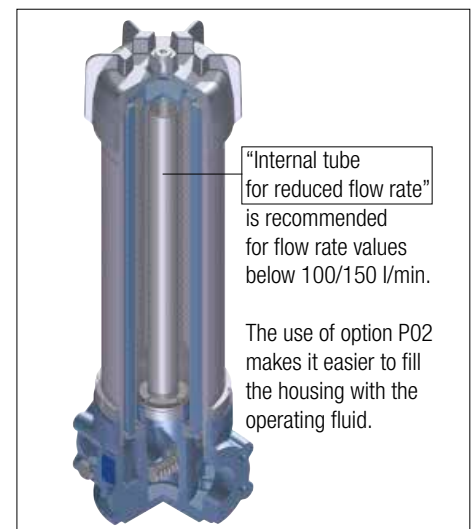
Bypass valve
pressure drop

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

Focus on



Execution P02



LMD 951

Designation & Ordering code

COMPLETE FILTER

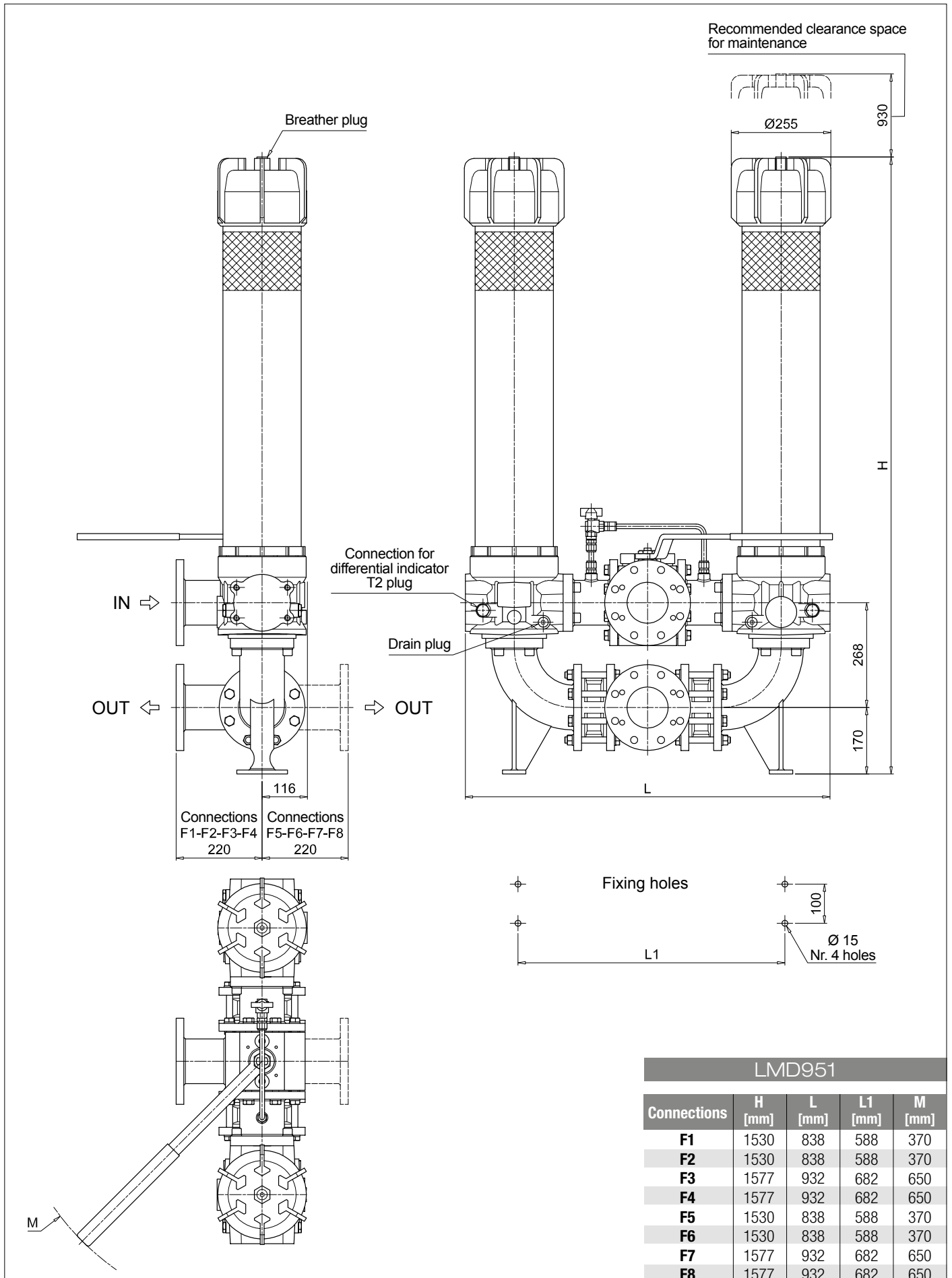
Series and size	Configuration example: LMD951 3 B V F1 A10 N P01							
LMD951								
Length	3							
Bypass valve	S Without bypass B 3.5 bar							
Seals and treatments	V FPM							
Connections	F1 3" SAE 3000 psi/M F2 3" SAE 3000 psi/UNC F3 4" SAE 3000 psi/M F4 4" SAE 3000 psi/UNC F5 3" SAE 3000 psi/M, In-line connections F6 3" SAE 3000 psi/UNC, In-line connections F7 4" SAE 3000 psi/M, In-line connections F8 4" SAE 3000 psi/UNC, In-line connections							
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				Execution			
	N 20 bar				P01 MP Filtri standard P02 With internal tube for reduced flow rate Pxx Customized			

FILTER ELEMENT

Element series and size	Configuration example: CU950 3 A10 V N P01					
CU950						
Element length	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	V FPM					
	Element Δp			Execution		
	N 20 bar			P01 MP Filtri standard Pxx Customized		

ACCESSORIES

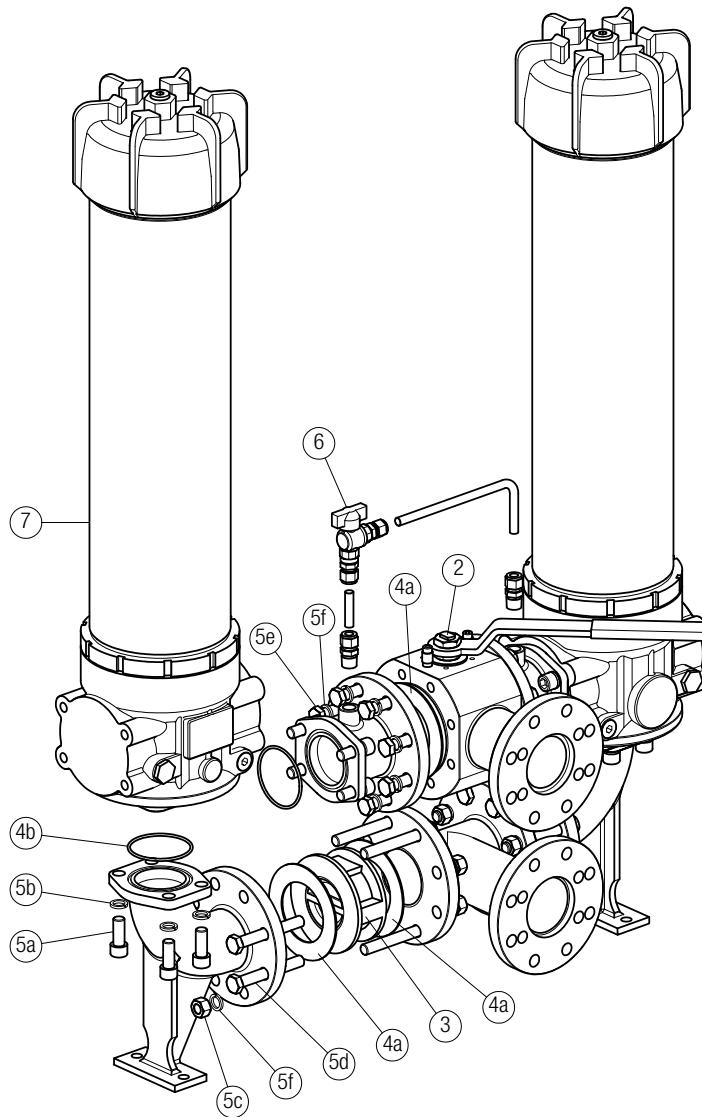
Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		



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. 2		Q.ty: 2 pcs. 3	Q.ty: 1 pc. 4	Q.ty: 1 pc. 5 (5a ÷ 5f)	Q.ty: 1 pc. 6	Q.ty: 2 pcs. 7
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
F1 - F2 - F5 - F6 / D1 - D3 (3" SAE / DIN PN16 DN 80)	3" SAE 3000 psi/M 02001135	3" SAE 3000 psi/UNC 02001438	02001418	02050388	02049056	02025043	LMP9513xVF1xxxNP01
F3 - F4 - F7 - F8 / D2 - D4 (4" SAE / DIN PN16 DN 100)	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 330 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 330 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 330 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 330 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 330 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: Cataphoretic Painted Steel
- Bypass valve: AISI 304 - Nylon

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.

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

LDP - LDD filters are provided for vertical mounting



Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm ³]
LDP 016	2.0	1.2
LDP 025	3.0	1.6
LDP 040	5.0	2.2
LDD 016	9.3	3.6
LDD 025	9.5	4.1
LDD 040	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	M250	P10	P25
LDP 016	83	91	178	198	222	350	353	358	359	295	309
LDP 025	124	134	227	245	265	357	358	358	359	319	330
LDP 040	173	191	274	284	311	359	360	361	362	332	337
LDD 016	68	73	120	130	140	189	190	192	192	169	174
LDD 025	93	98	142	149	157	191	192	192	192	178	181
LDD 040	118	126	161	165	175	192	192	193	193	182	184

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

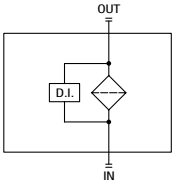
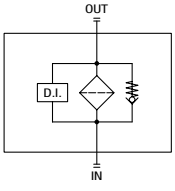
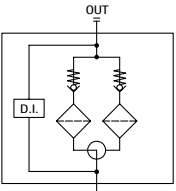
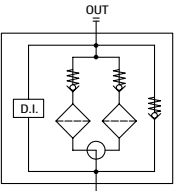
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

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

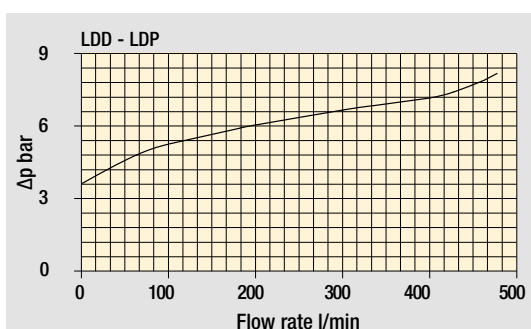
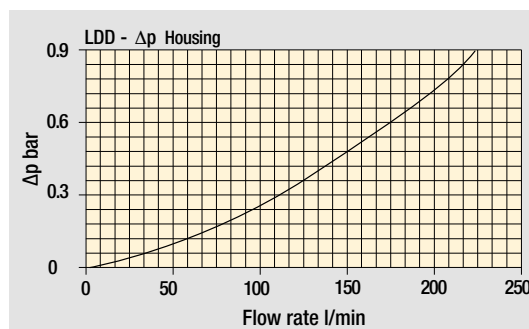
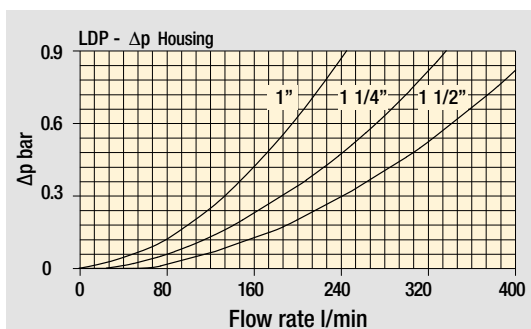
Hydraulic symbols

Filter series	Execution S	Execution B	Execution S	Execution B
LDP 016	•	•		
LDP 025	•	•		
LDP 040	•	•		
LDD 016			•	•
LDD 025			•	•
LDD 040			•	•

			
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Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

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

LDP Filter element according to DIN 24550

Designation & Ordering code

COMPLETE FILTER

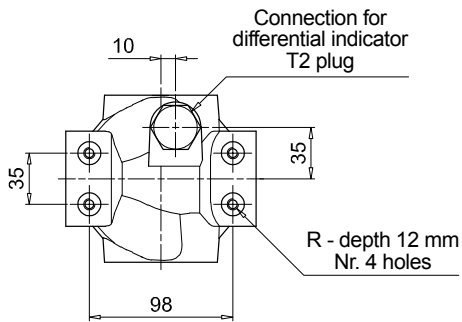
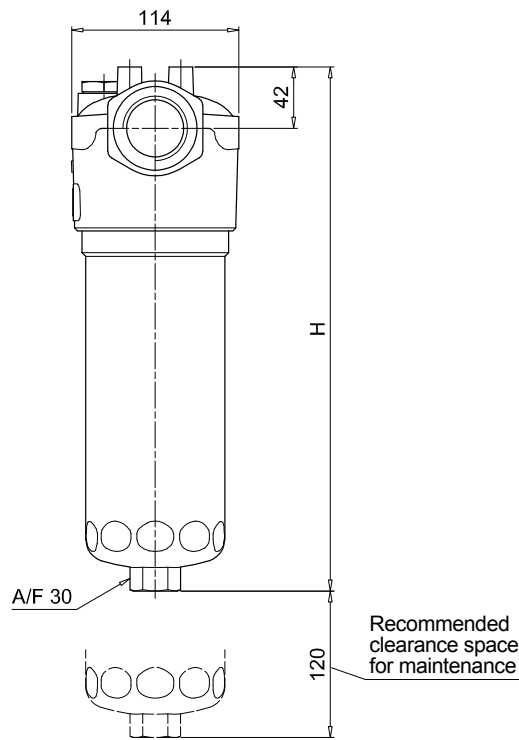
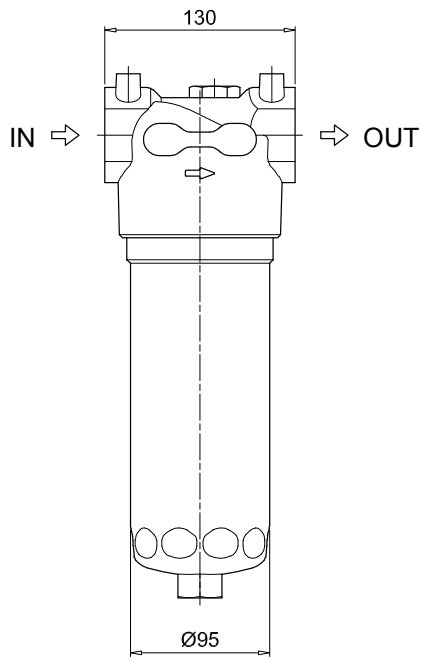
Series	Configuration example: LDP 025 B A D 6 A10 N P01										
LDP											
Size											
016	Element according to DIN 24550 - T3 DN160										
025	Element according to DIN 24550 - T3 DN250										
040	Element according to DIN 24550 - T3 DN400										
Bypass valve											
S	Without bypass					B	3.5 bar				
Seals and treatments				Filtration rating							
A	NBR			Axx	Mxx	Pxx					
V	FPM			•	•	•					
W	NBR compatible with fluids HFA-HFB-HFC			•	•						
Connections											
A	G 1"					F	1 1/2" NPT				
B	G 1 1/4"					G	SAE 16 - 1 5/16" - 12 UN				
C	G 1 1/2"					H	SAE 20 - 1 5/8" - 12 UN				
D	1" NPT					I	SAE 24 - 1 7/8" - 12 UN				
E	1 1/4" NPT										
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	Configuration example: DN 025 A10 A N P01										
DN											
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				Filtration rating							
A	NBR			Axx	Mxx	Pxx					
V	FPM			•	•	•					
W	NBR compatible with fluids HFA-HFB-HFC			•	•						
Element Δp	N					20 bar					
Execution	P01					MP Filtri standard					
Pxx	Customized										

ACCESSORIES

Differential indicators	page		page
DEA	Electrical differential indicator	445	DTA Electronic differential indicator 448
DEM	Electrical differential indicator	445-446	DVA Visual differential indicator 448
DLA	Electrical / visual differential indicator	446-447	DVM Visual differential indicator 448
DLE	Electrical / visual differential indicator	447	
Additional features	page		
T2	Plug	449	



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

LDD Filter element according to DIN 24550

Designation & Ordering code

COMPLETE FILTER

Series	Configuration example: LDD 025 B A C 6 A10 N P01									
LDD										
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 3.5 bar						
Seals and treatments				Filtration rating						
A	NBR	Axx	Mxx	Pxx						
V	FPM	•	•	•						
W	NBR compatible with fluids HFA-HFB-HFC	•	•							
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				

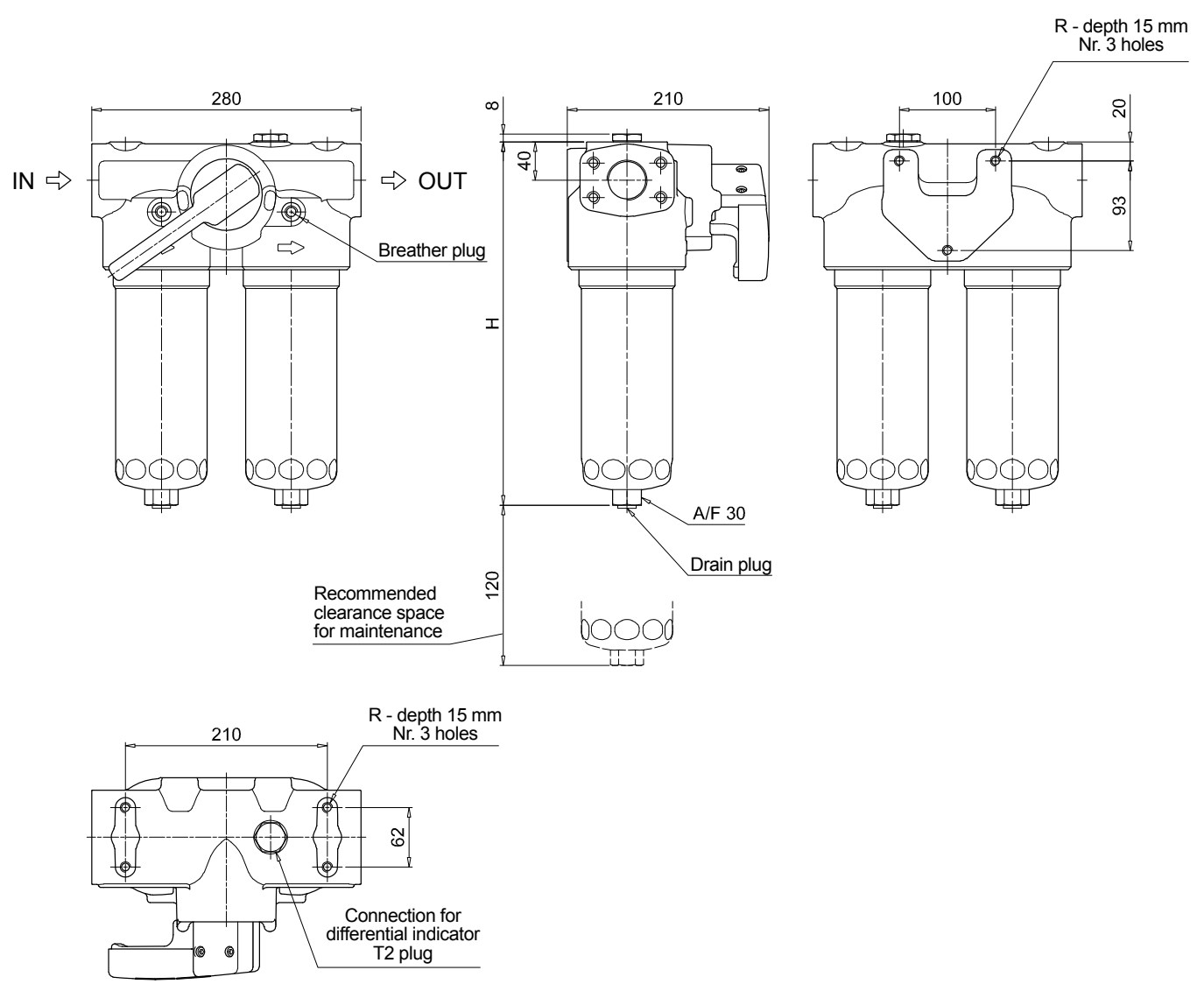
FILTER ELEMENT

Element series	Configuration example: DN 025 A10 A N P01							
DN								
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				Filtration rating				
A	NBR	Axx	Mxx	Pxx				
V	FPM	•	•	•				
W	NBR compatible with fluids HFA-HFB-HFC	•	•					
Element Δp	N 20 bar					Execution		
						P01 MP Filtri standard		
						Pxx Customized		

ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	page		
T2 Plug	449		

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

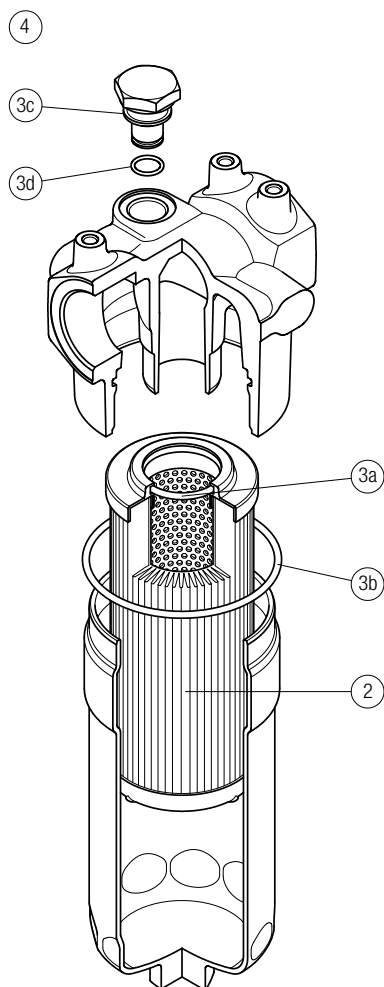


LDP SPARE PARTS

Filter element according to DIN 24550

Order number for spare parts

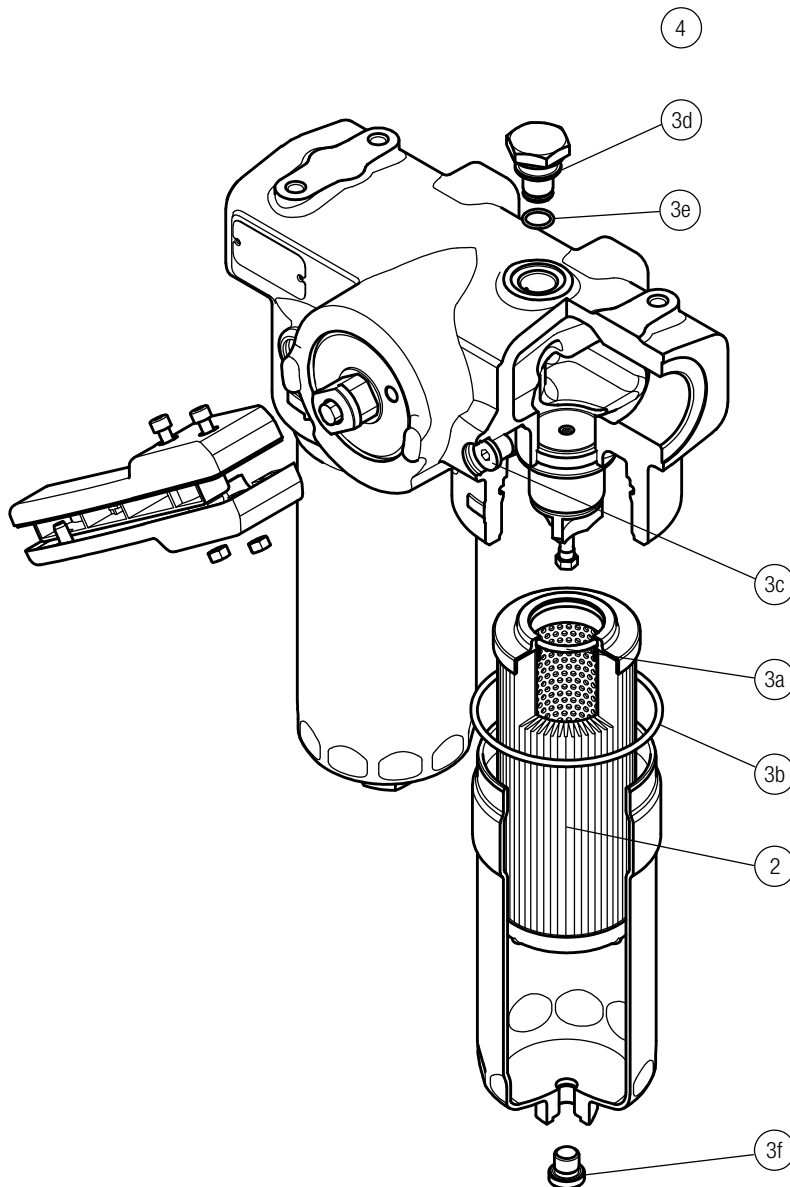
LDP



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	
	2	3 (3a ÷ 3d)		4		
		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 ÷ 3f)		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) $\pm 10\%$
- 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 [dm³]

Filter series	Weights [kg]			Volumes [dm ³]		
	Length	1	2	Length	1	2
LMP 900-901		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						M25 M60 M90 M250
		A03	A06	A10	A16	A25		
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 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

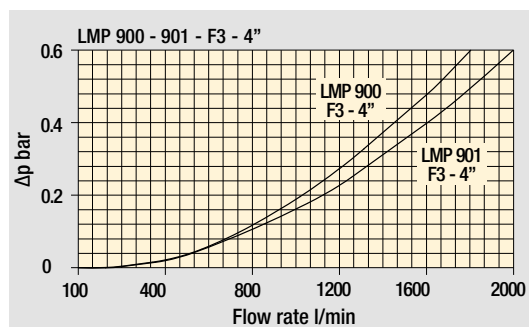
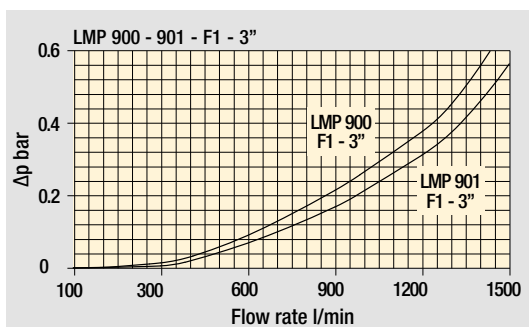
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

LMP 900-901 Length 2

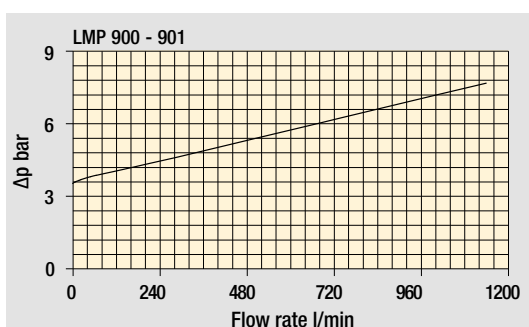


Hydraulic symbols

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



Pressure drop
Filter housings Δp pressure drop



Bypass valve pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp 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 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 A06 Inorganic microfiber 6 µm A10 Inorganic microfiber 10 µm A16 Inorganic microfiber 16 µm A25 Inorganic microfiber 25 µm M25 Wire mesh 25 µm M60 Wire mesh 60 µm M90 Wire mesh 90 µm WA025 Water absorber inorganic microfiber 25 µm	
Element Δp N 20 bar	Execution P01 MP Filtri standard P02 Maintenance from the bottom of the housing Pxx Customized
	Filter length 1 2

FILTER ELEMENT

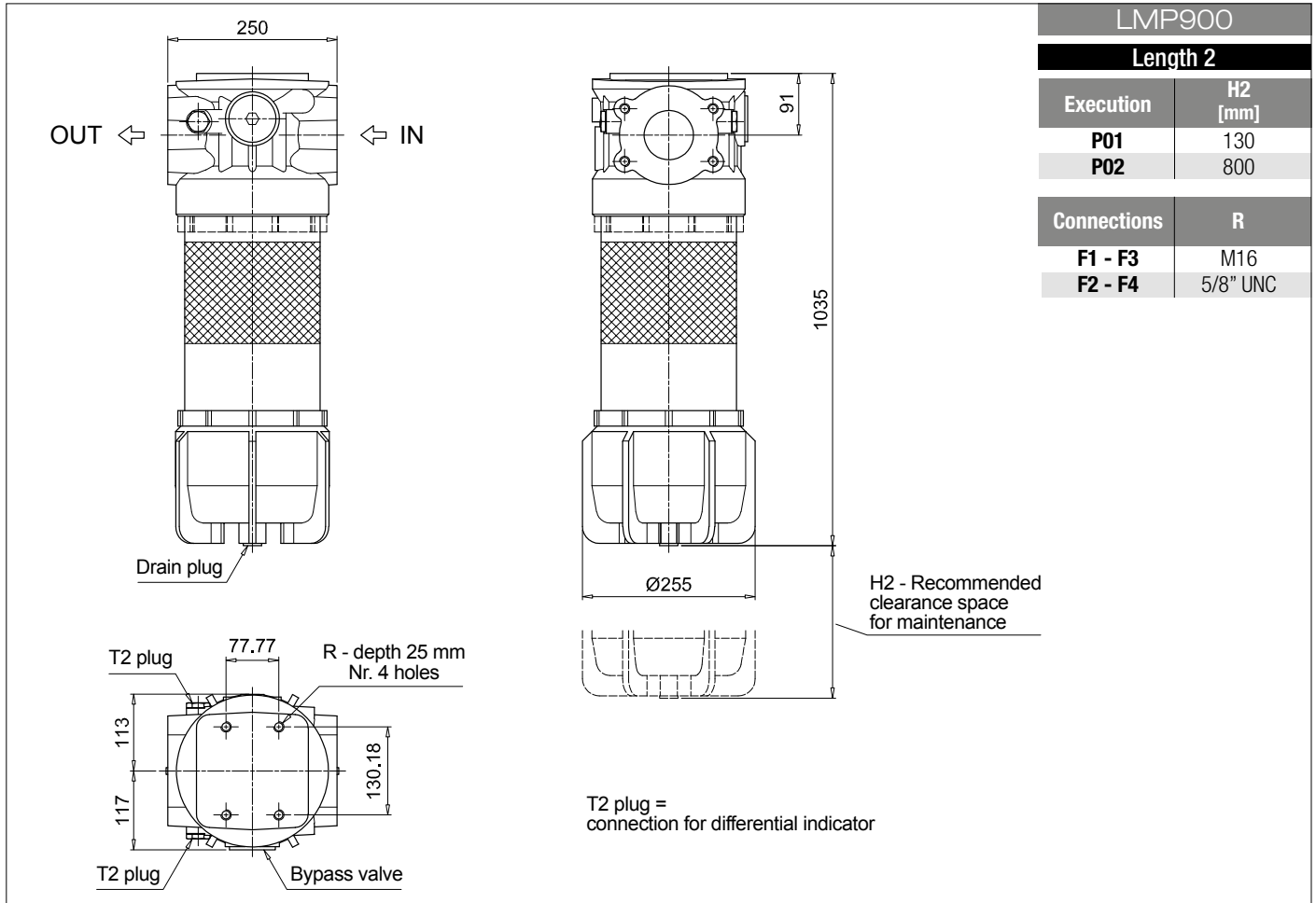
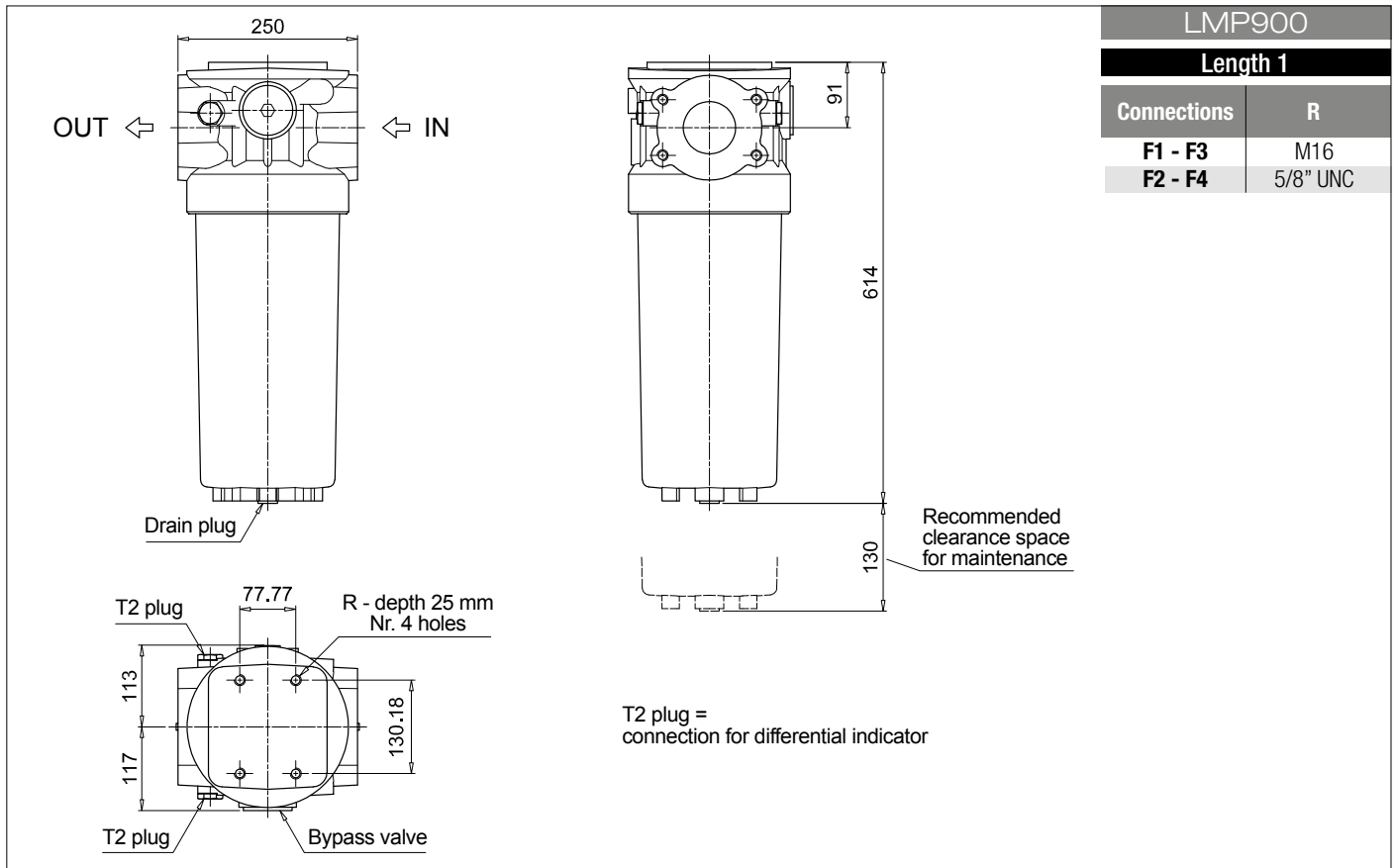
Element series and size CU900	Configuration example: CU900 A10 A N P01
Length 1 Nr. 1 filter element 2 Nr. 2 filter elements	
Filtration rating (filter media) A03 Inorganic microfiber 3 µm A06 Inorganic microfiber 6 µm A10 Inorganic microfiber 10 µm A16 Inorganic microfiber 16 µm A25 Inorganic microfiber 25 µm M25 Wire mesh 25 µm M60 Wire mesh 60 µm M90 Wire mesh 90 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

ACCESSORIES

Differential indicators	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448
DLE Electrical / visual differential indicator	447		
Additional features	Filter length	page	Filter length
T2 Plug	1 2	449	1 2
	• •		•
CFA Retaining clamp			450

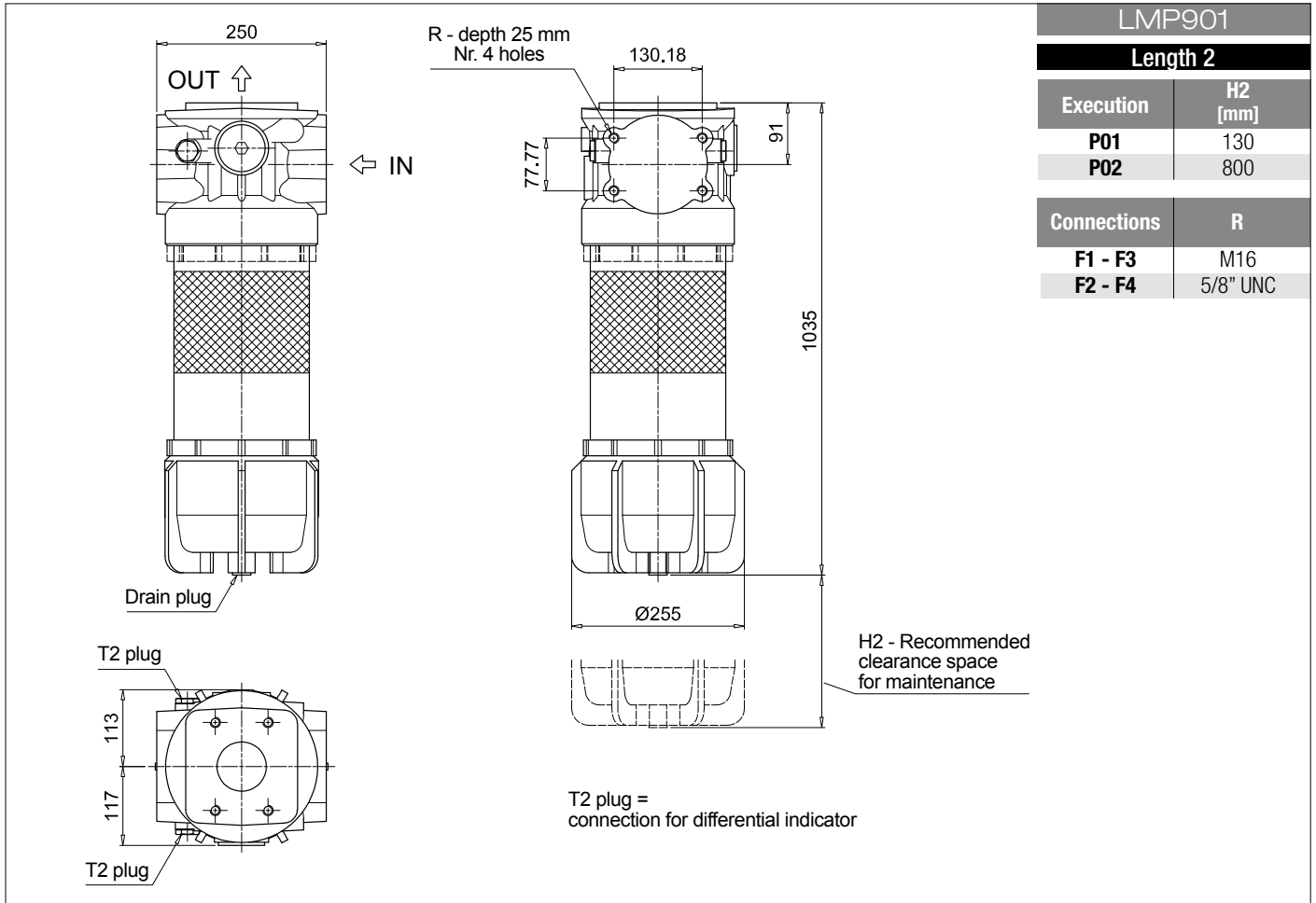
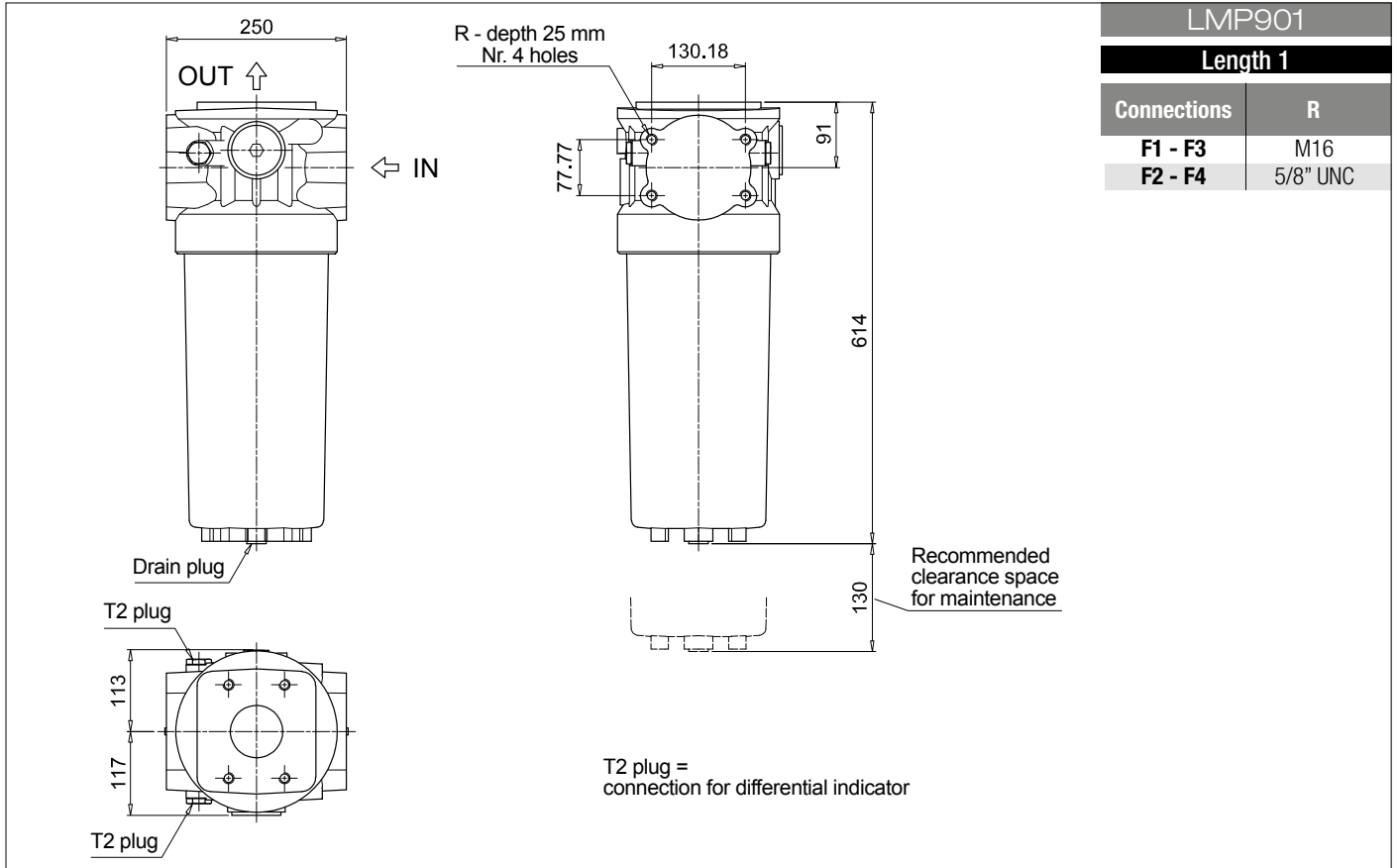
Filter element according to DIN 24550 LMP 900-901

Dimensions



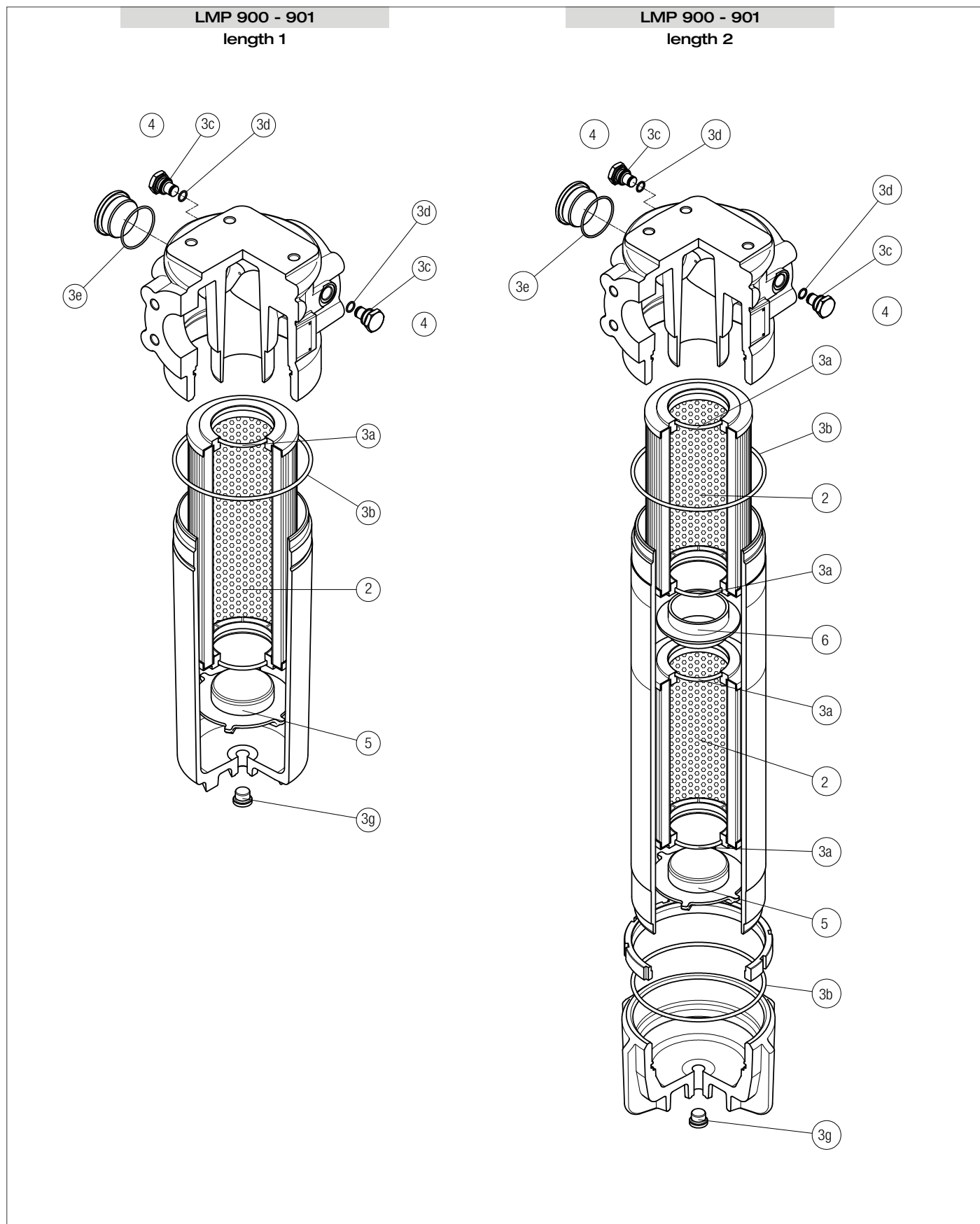
LMP 900-901 Filter element according to DIN 24550

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	
LMP 900-901 length 1	1 pc.	See order table	1 pc.	02050363	02050364	2 pcs.	T2H	T2V	1 pc.	01044104	-
LMP 900-901 length 2	2 pcs.		1 pc.	02050365	02050366	2 pcs.			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

Δp 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 [dm³]

Filter series	Weights [kg]		Volumes [dm ³]	
	Length	2	Length	2
LMP 902		89.6		58
LMP 903		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 M250
LMP 902	2	2217	2576	3241	3282	3506	3987
LMP 903	2	2838	3170	3720	3755	3926	4278

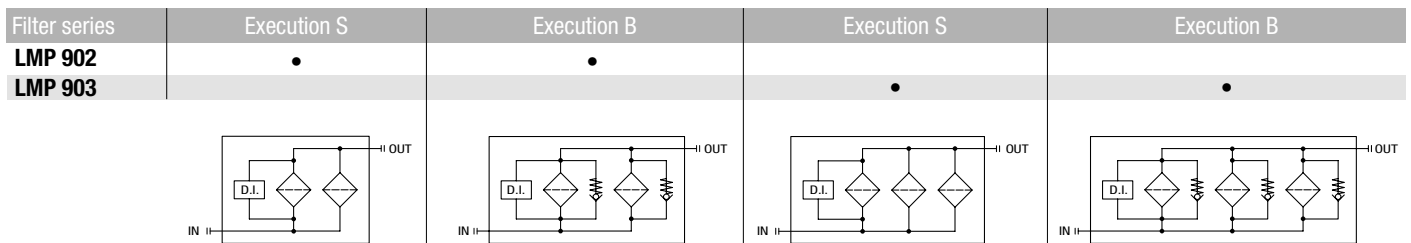
Maximum flow rate for a complete low and medium pressure filter with a pressure drop $\Delta p = 0.7$ bar.

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

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

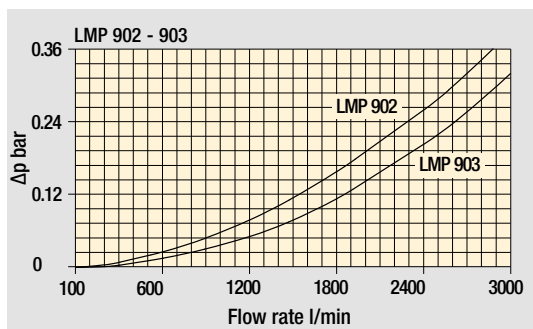
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Hydraulic symbols

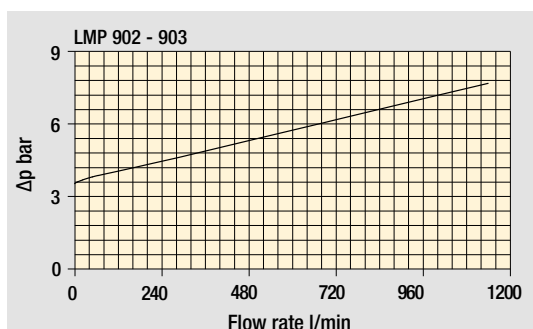


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

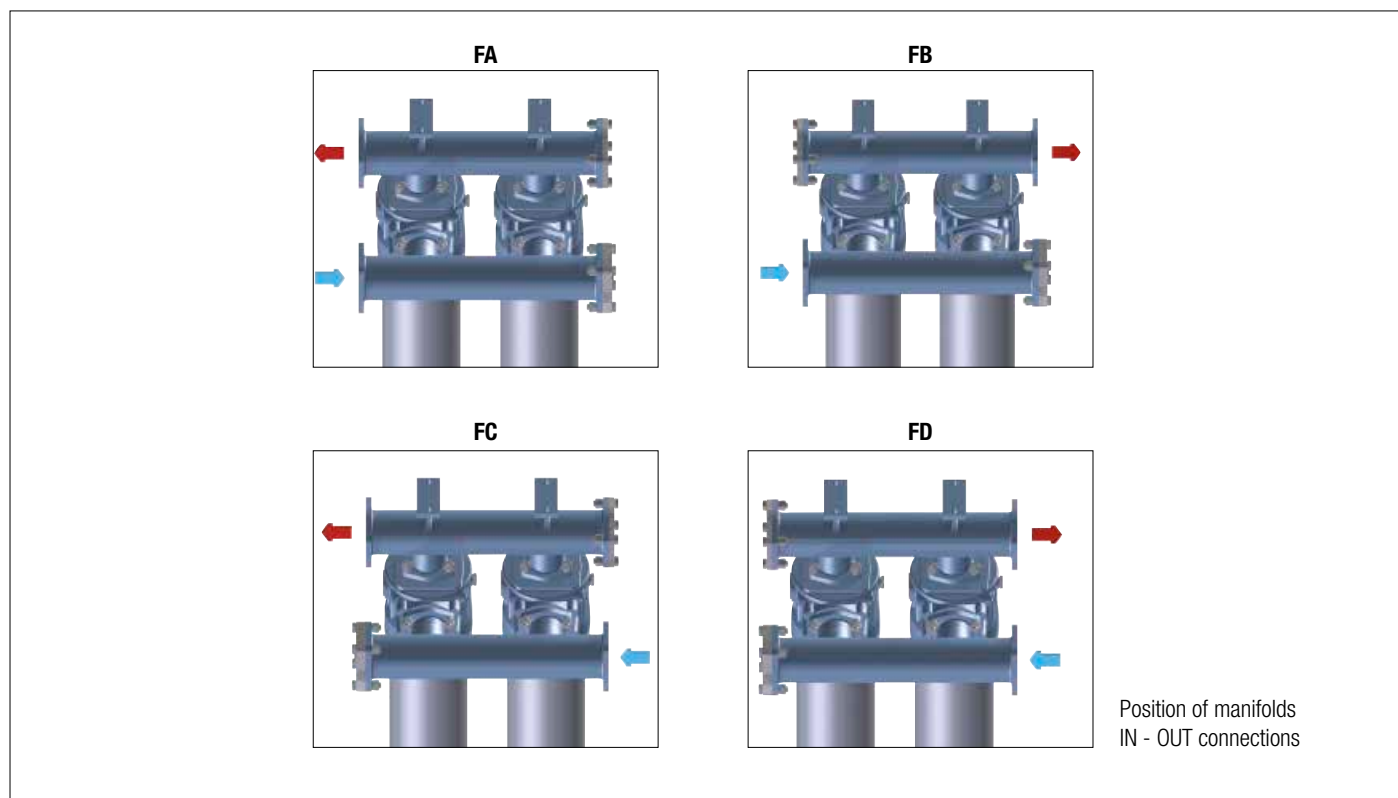


The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

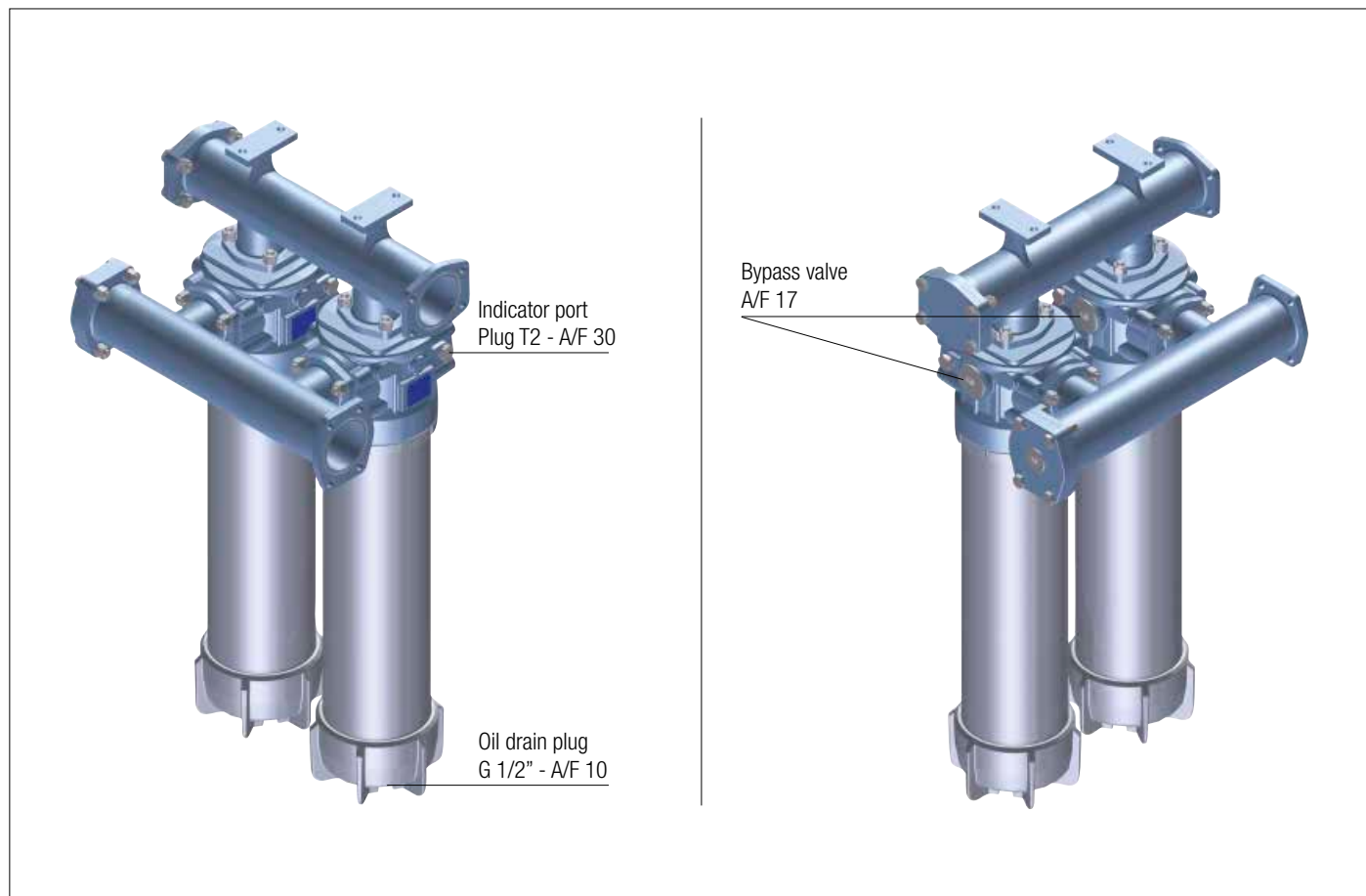
LMP 902-903 GENERAL INFORMATION

Filter element according to DIN 24550

Manifolds



Focus on



LMP 902-903 Filter element according to DIN 24550

Designation & Ordering code

COMPLETE FILTER

Series and size		Configuration example: LMP902 2 B A FA A10 N P01							
LMP902 LMP903									
Length		2							
Bypass valve		S Without bypass B 3.5 bar							
Seals and treatments		A NBR V FPM							
Connections		IN	OUT						
FA	4" SAE 3000 psi	left	left						
FB	4" SAE 3000 psi	left	right						
FC	4" SAE 3000 psi	right	left						
FD	4" SAE 3000 psi	right	right						
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 Pxx Customized							

FILTER ELEMENT

Element series and size		Configuration example: CU900 A10 A N P01				
CU900						
Filter series and size						
LMP902	Nr. 4 filter elements					
LMP903	Nr. 6 filter elements					
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				

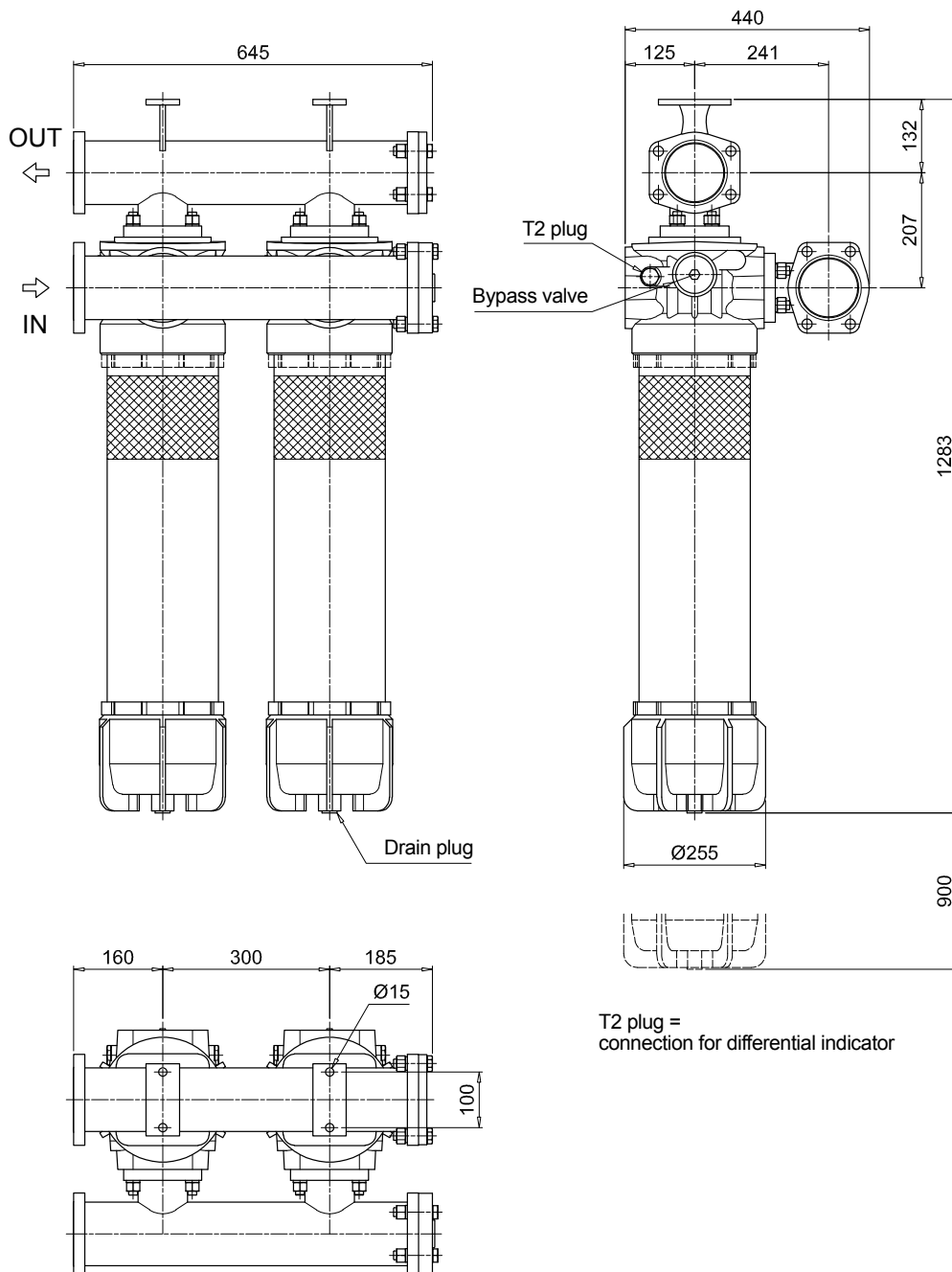
ACCESSORIES

Differential indicators		page		page
DEA	Electrical differential indicator	445	DTA	Electronic differential indicator 448
DEM	Electrical differential indicator	445-446	DVA	Visual differential indicator 448
DLA	Electrical / visual differential indicator	446-447	DVM	Visual differential indicator 448
DLE	Electrical / visual differential indicator	447		
Additional features		page		
T2	Plug	449		

Filter element according to DIN 24550 LMP 902-903

Dimensions

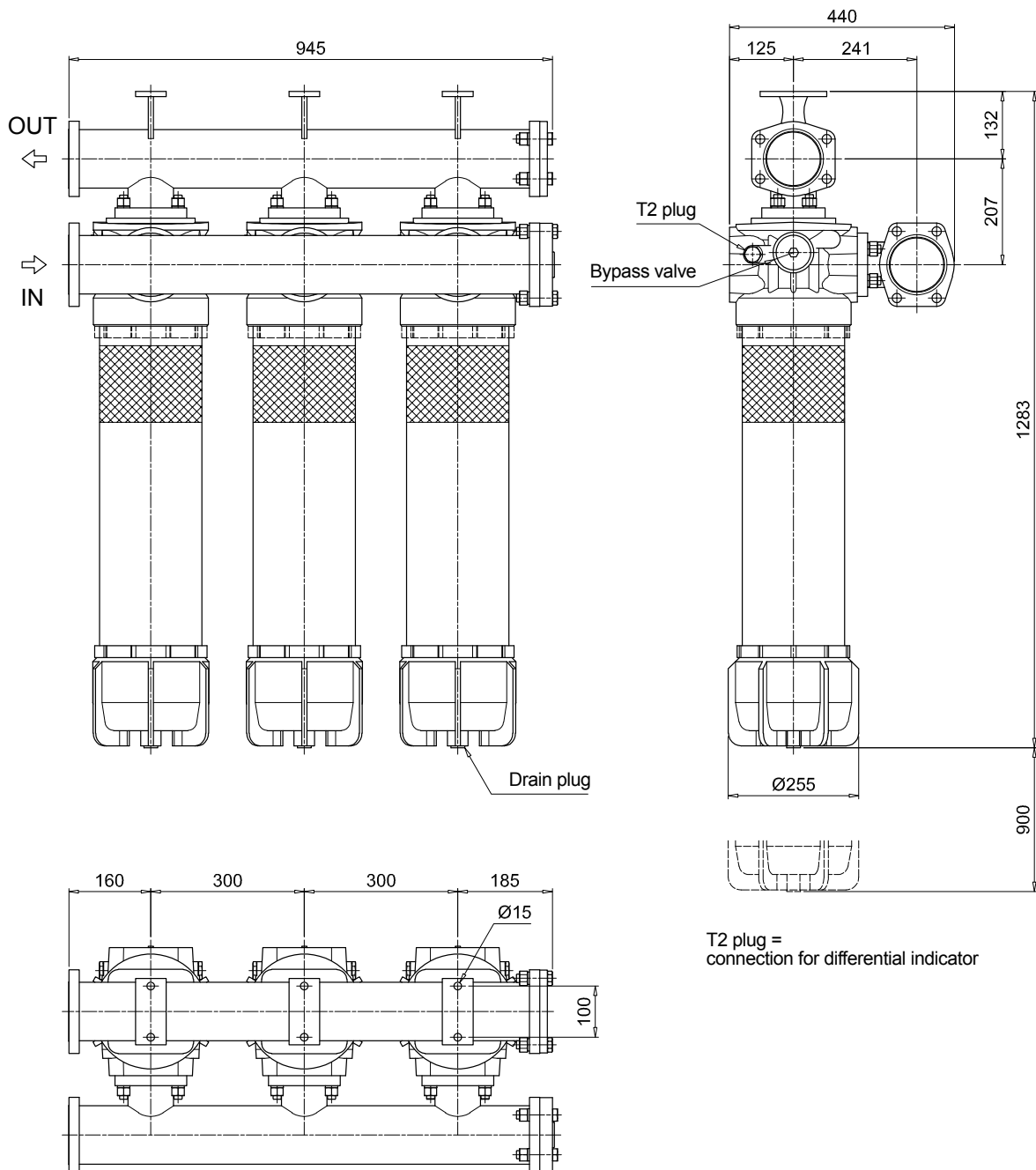
LMP902



LMP 902-903 Filter element according to DIN 24550

Dimensions

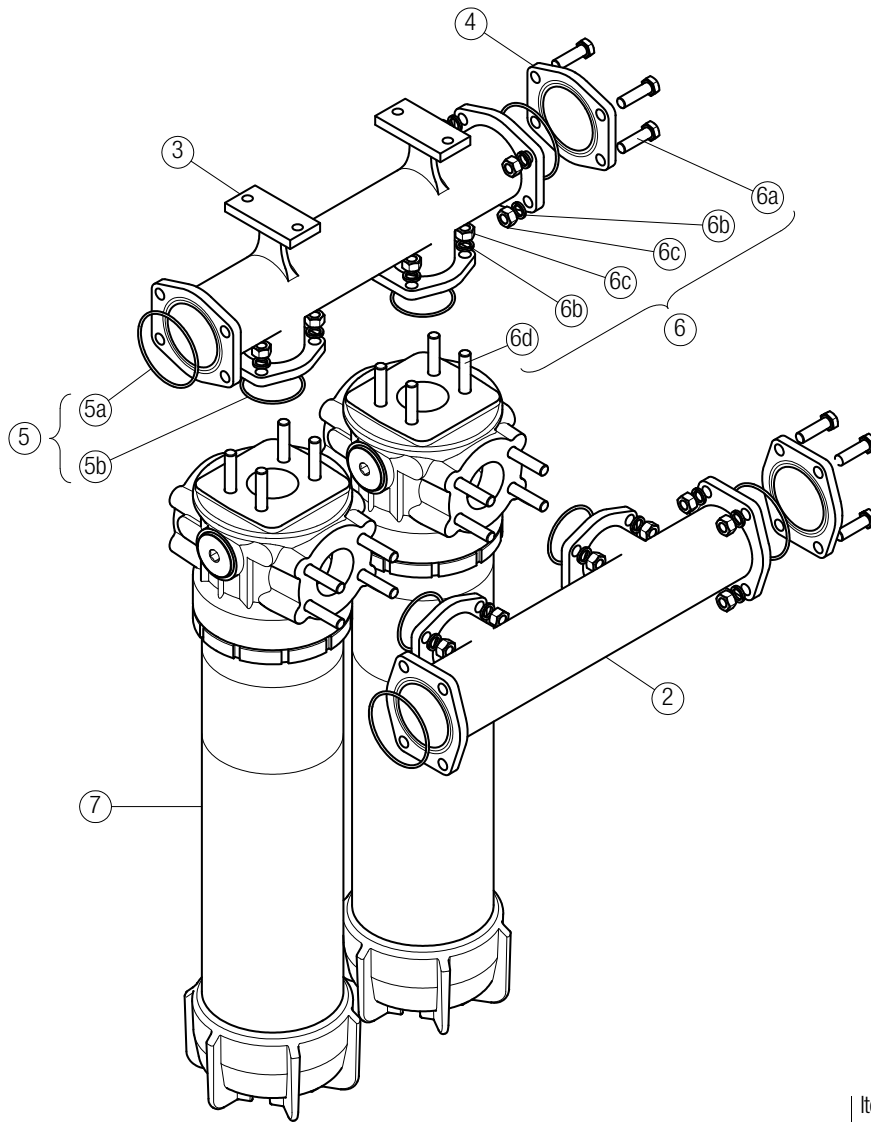
LMP903



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

Differential 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 differential pressure indicators with a visual, electrical or both signals.

Suitable indicator types

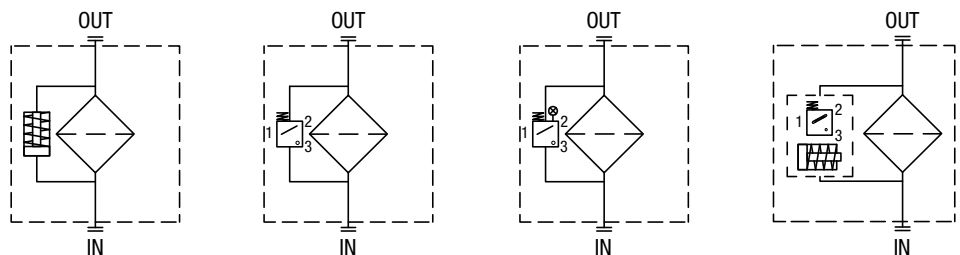
DIFFERENTIAL INDICATORS

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 series	Visual indicator	Electrical indicator	Electrical / Visual indicator	Electronic indicator
With 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	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01
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 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01

DEA*50	
Electrical Differential Indicator	
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

53

A/F 30
Max tightening torque: 65 N·m

Hydraulic symbol

Electrical symbol

Materials

- Body: Brass
- Base: Black Nylon
- 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	
Electrical Differential Indicator	
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

min. 60

30

A

A/F 28
Max tightening torque: 65 N·m

flexible cable: 290 to "A"

Hydraulic symbol

Electrical symbol

Thermal lockout

Materials

- Body: Brass
- Base: Black Nylon
- 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	
Electrical Differential Indicator	
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

60

A/F 28
Max tightening torque: 65 N·m

Hydraulic symbol

Electrical symbol

Thermal lockout

Materials

- Body: Brass
- Base: Black Nylon
- 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")

DLA*71	
Electrical/Visual Differential Indicator	
Settings	Ordering code
2.0 bar $\pm 10\%$	DL A 20 x A 71 P01
5.0 bar $\pm 10\%$	DL A 50 x A 71 P01

Hydraulic symbol

Electrical symbol

Materials

- Body: Brass
- Base: Black Nylon
- 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	
Electrical/Visual Differential Indicator	
Settings	Ordering code
2.0 bar $\pm 10\%$	DL E 20 x A 50 P01
5.0 bar $\pm 10\%$	DL E 50 x A 50 P01

Hydraulic symbol

Electrical symbol

Materials

- Body: Brass
- Base: Black Nylon
- 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	
Electrical/Visual Differential Indicator	
Settings	Ordering code
2.0 bar $\pm 10\%$	DL E 20 x F 50 P01
5.0 bar $\pm 10\%$	DL E 50 x F 50 P01

Hydraulic symbol

Electrical symbol

Materials

- Body: Brass
- Base: Black Nylon
- 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

DIFFERENTIAL INDICATORS

Dimensions

DTA*70	
Electronic Differential Indicator	
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

Hydraulic symbol

Materials

- Body: Brass
- Internal parts: Brass - Nylon
- 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)

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

Hydraulic symbol

Materials

- Body: Brass
- Internal parts: Brass - Nylon
- 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	
Visual Differential Indicator	
Settings	Ordering code
2.0 bar $\pm 10\%$	DV M 20 x P01
5.0 bar $\pm 10\%$	DV M 50 x P01

Hydraulic symbol

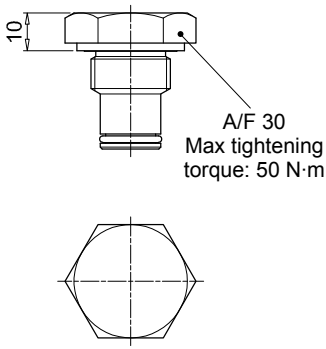
Materials

- Body: Brass
- Internal parts: Brass - Nylon
- 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

T2	
Indicator plug	
Seal	Ordering code
HNBR	T2 H
FPM	T2 V



Materials

- Body: Phosphatized steel
- Seal: HNBR / FPM

DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATORS

Series	Configuration example 1:	DE	M	20	H	F	50	P01
DE Electrical differential indicator	Configuration example 2:	DL	E	50	V	A	71	P01
DL Electrical/Visual differential indicator	Configuration example 3:	DT	A	20	H	F	70	P01
DT Electronic differential indicator	Configuration example 4:	DV	M	50	V			P01
DV Visual differential indicator								

Type	DE	DL	DT	DV	
A Standard type	•	•	•	•	A With automatic reset
M With wired electrical connection	•				M With manual reset
E For high power supply		•			

Pressure setting	
20 2.0 bar	
50 5.0 bar	

Seals	
H HNBR	
V FPM	

Thermostat	DEA	DEM	DLA	DLE	DT	DV
A Without	•	•	•	•		
F With thermostat		•		•	•	

Electrical connections	DEA	DEM	DLA	DLE	DT	DV
10 Connection AMP Superseal series 1.5		•				
20 Connection AMP Timer Junior		•				
30 Connection Deutsch DT-04-2-P		•				
35 Connection Deutsch DT-04-3-P		•				
50 Connection EN 175301-803	•			•		
51 Connection EN 175301-803, transparent base with lamps 24 Vdc			•			
52 Connection EN 175301-803, transparent base with lamps 110 Vdc			•			
70 Connection IEC 61076-2-101 D (M12)					•	
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc			•			

Option	
P01 MP Filtri standard	
Pxx Customized	

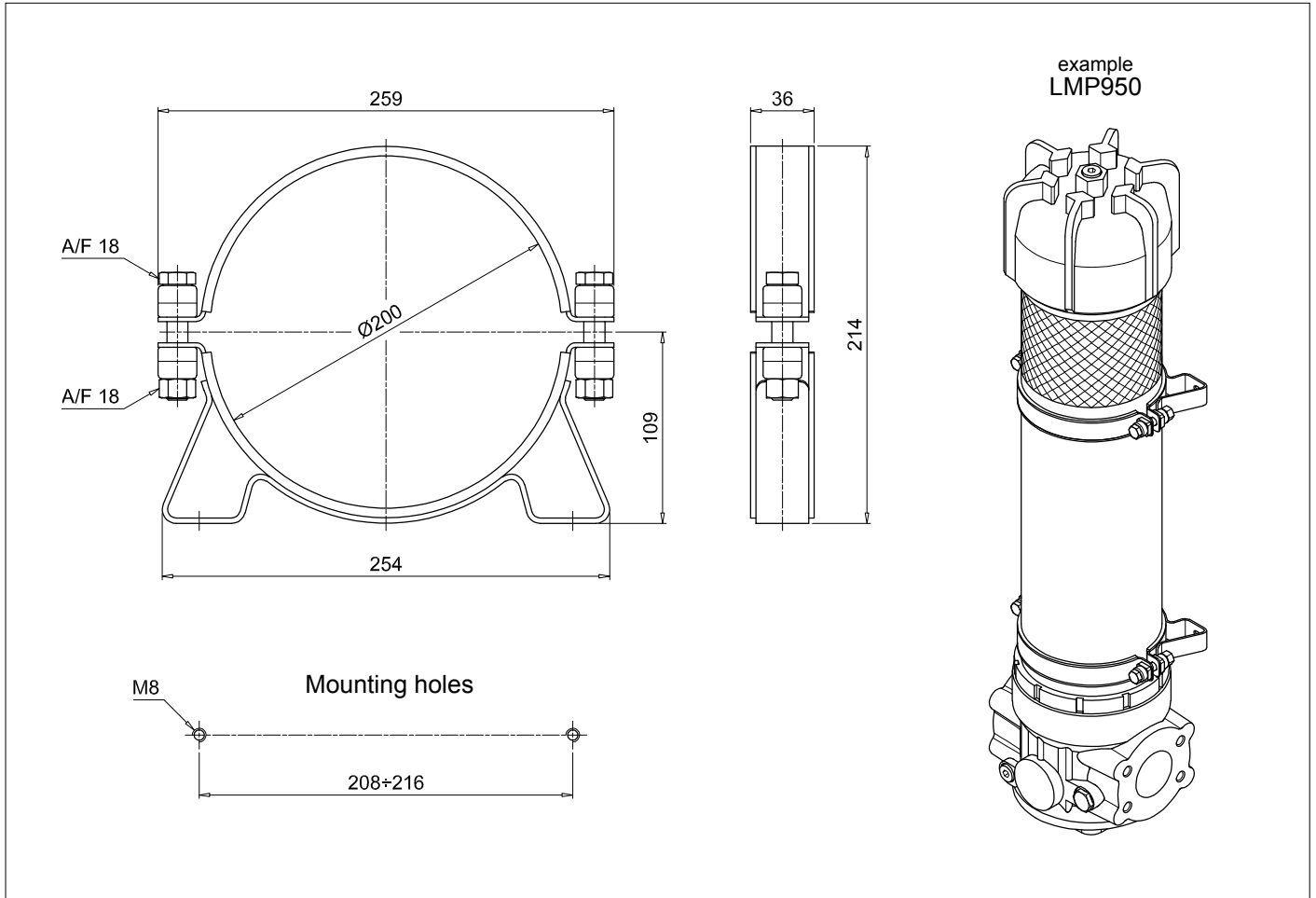
DESIGNATION & ORDERING CODE - DIFFERENTIAL INDICATOR PLUG

Series	Configuration example	T2	H
T2 Indicator plug			

Seals	
H HNBR	
V FPM	

Accessories

RETAINING CLAMP



Series
CFA Retaining clamp

Configuration example: CFA 20 M P01

Size
20

Screw
M Metric

Execution
P01 MP Filtri standard

Clogging indicators are devices that check the life time of the filter elements. They measure the pressure drop through the filter element directly connected to the filter housing.

These devices trip when the clogging of the filter element causes a pressure drop increasing across the filter element.

Filter elements are efficient only if their Dirt Holding Capacity is fully exploited.

This is achieved by using filter housings equipped with clogging indicators.

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.

The electronic differential pressure clogging indicator is also available.

It provides both analogical 4-20 mA output and digital warning (75% of clogging) and alarm (clogging) outputs.

Clogging Indicators



Clogging indicators



Suitable indicator types

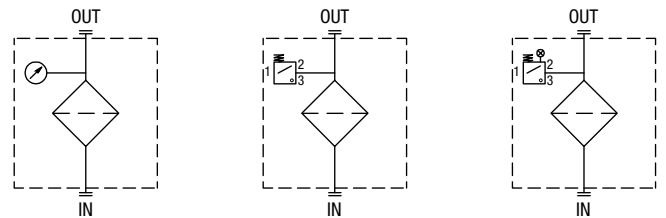
VACUUM INDICATORS

Vacuum indicators are used on the Suction line to check the efficiency of the filter element.

They measure the pressure downstream of the filter element.

Standard items are produced with R 1/4" EN 10226 connection.

Available products with R 1/8" EN 10226 to be fitted on MPS series.

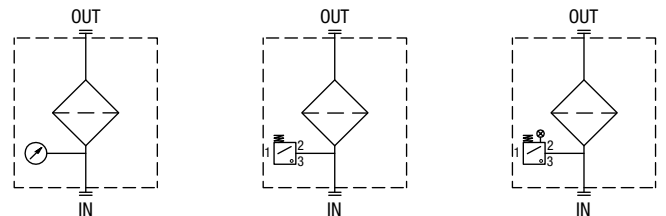


BAROMETRIC INDICATORS

Pressure indicators are used on the Return line to check the efficiency of the filter element.

They measure the pressure upstream of the filter element.

Standard items are produced with R 1/8" EN 10226 connection.



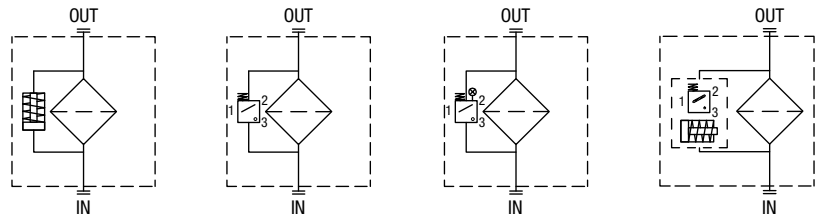
DIFFERENTIAL INDICATORS

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.



Filter family	Filter series	Electrical indicator	Electrical / Visual indicator	Electronic indicator	Visual indicator
SUCTION FILTERS	ELIXIR® SFEX060-080-110-160	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01		VVB16P01 VVS16P01
	SF2 250 - 350 SF2 500 - 501 - 503 - 504 - 505 SF2 510 - 535 - 540	VEA21AA50P01	VLA21AA51P01 VLA21AA52P01 VLA21AA53P01 VLA21AA71P01		VVA16P01 VVR16P01
RETURN FILTERS	With bypass valve ELIXIR® RFEX060-080-110-160	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01		BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01
	Without bypass valve ELIXIR® RFEX060-080-110-160	BEA20HA50P01 BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01		BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01
	With bypass valve MPFX-MPTX-MPF-MPT - bypass 1.75 bar MPH - bypass 1.75 bar RF2250 - RF2350 - bypass 1.75 bar	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01		BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01
	With bypass valve MPFX-MPTX-MPF-MPT - bypass 3 bar MPH - bypass 2.5 bar FRI 255 RF2250 - RF2350 - bypass 3 bar	BEA20HA50P01 BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01		BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01
MPLX FRI 025 - 040 - 100 - 250 - 630 - 850	DEA20xA50P01 DEM20xA10P01 DEM20xA20P01 DEM20xA30P01 DEM20xA35P01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01	DVA20xP01 DVM20xP01	
RETURN / SUCTION FILTERS	Suction line MRSX 116 - 165 - 166	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01		VVB16P01 VVS16P01
	Return line MRSX 116 - 165 - 166 LMP 124 MULTIPORT	BEA25HA50P01 BEM25HA41P01 BET25HF10P01 BET25HF30P01 BET25HF50P01	BLA25HA51P01 BLA25HA52P01 BLA25HA53P01 BLA25HA71P01		BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01
SPIN-ON FILTERS	Suction line MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01		VVB16P01 VVS16P01
	Return line MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350	BEA15HA50P01 BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01		BVA14P01 BVR14P01 BVP20HP01 BVQ20HP01
	In-line MPS 051 - 071 - 101 - 151 MPS 301 - 351 MSH 050 - 070 - 100 - 150	DEA12xA50P01 DEM12xAxxP01	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLE12xA50P01 DLE12xF50P01 DLE20xF50P01 DLE20xF50P01	DTA12xA70P01 DTA12xF70P01 DTA20xA70P01 DTA20xF70P01	DVA12xP01 DVM12xP01

Filter family	Filter series	Electrical indicator	Electrical / Visual indicator	Electronic indicator	Visual indicator	Hazardous area electronic indicator 		
LOW & MEDIUM PRESSURE FILTERS	With bypass valve	ELIXIR® LFEX060-080-110-160	DES25HA10P01 DES25HA30P01 DES25HA80P01			DVS25HP01		
	Without bypass valve	ELIXIR® LFEX060-080-110-160	DES40HA10P01 DES40HA30P01 DES40HA80P01			DVS40HP01		
		LMP 110 - 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP				DVS25HP01 DVS40HP01		
	With bypass valve	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	DEA20xA50P01 DEM20xAxxP01	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01	DTA20xF70P01	DVA20xP01 DVM20xP01		
	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	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01	DVA50xP01 DVM50xP01		
	HIGH PRESSURE FILTERS	With bypass valve	FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 350 - 500 FMM 050 - 150 FHA 051 FHM 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500 FHB 050 - 065 - 135 - 320 FHF 325 FHD 021 - 051 - 326 - 333	DEA50xA50P01 DEM50xAxxP01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01	DTA50xF70P01	DVA50xP01 DVM50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01 DEH70xA48P01 DEH70xA49P01 DEH70xA70P01
		Without bypass valve	FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 350 - 500 FMM 050 - 150 FHA 051 FHM 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500 FHB 050 - 065 - 135 - 320 FHF 325 FHD 021 - 051 - 326 - 333	DEA70xA50P01 DEM70xAxxP01 DEA95xA50P01 DEM95xAxxP01	DLA70xA51P01 DLA70xA52P01 DLA70xA71P01 DLE70xA50P01 DLE70xF50P01 DLA95xA51P01 DLA95xA52P01 DLE95xA50P01 DLE95xF50P01	DTA70xF70P01 DTA95xF70P01	DVA70xP01 DVM70xP01 DVA95xP01 DVM95xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01 DEH70xA48P01 DEH70xA49P01 DEH70xA70P01
		With bypass valve	FZH 010 - 011 - 039 FZP 039 - 136 FZX 011 FZB 039 FZM 039 FZD 051	DEX50xA50P01	DLX50xA51P01 DLX50xA52P01		DVX50xP01 DVG50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01 DEH70xA48P01 DEH70xA49P01 DEH70xA70P01
			Without bypass valve	FZH 010 - 011 - 039 FZP 039 - 136 FZB 039 FZM 039 FZD 010 - 021 - 051	DEX70xA50P01 DEX95xA50P01	DLX70xA51P01 DLX70xA52P01 DLX95xA51P01		DVX70xP01 DVG70xP01 DVG95xP01

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