

LMD 400-401 & 431 series

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



Description

Technical data

Low & Medium Pressure filters

Duplex

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

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

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

Available features:

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

Common applications:

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

Filter housing materials

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

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) $\pm 10\%$
- Other opening pressures on request.

Filter element features

Filter LMD400-401 / 431		Filter element CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
WA - Water absorber microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
<i>Please see ordering code tables to check element Δp series availability based on filter features.</i>			
Flow direction through the filter element: From QUIT 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

Flow rates [l/min]

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

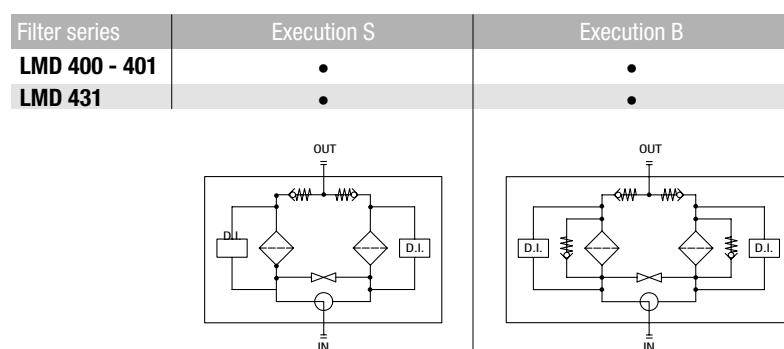
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.

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

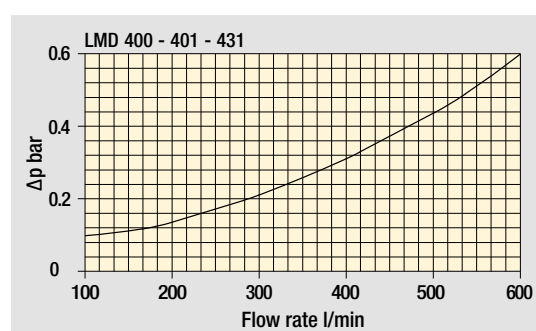
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

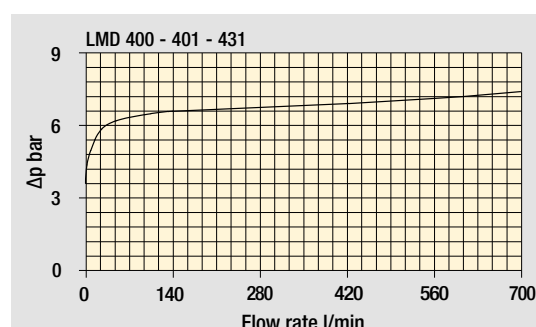
Hydraulic diagram



Pressure drop

Filter housings Δp pressure drop

Bypass valve pressure drop

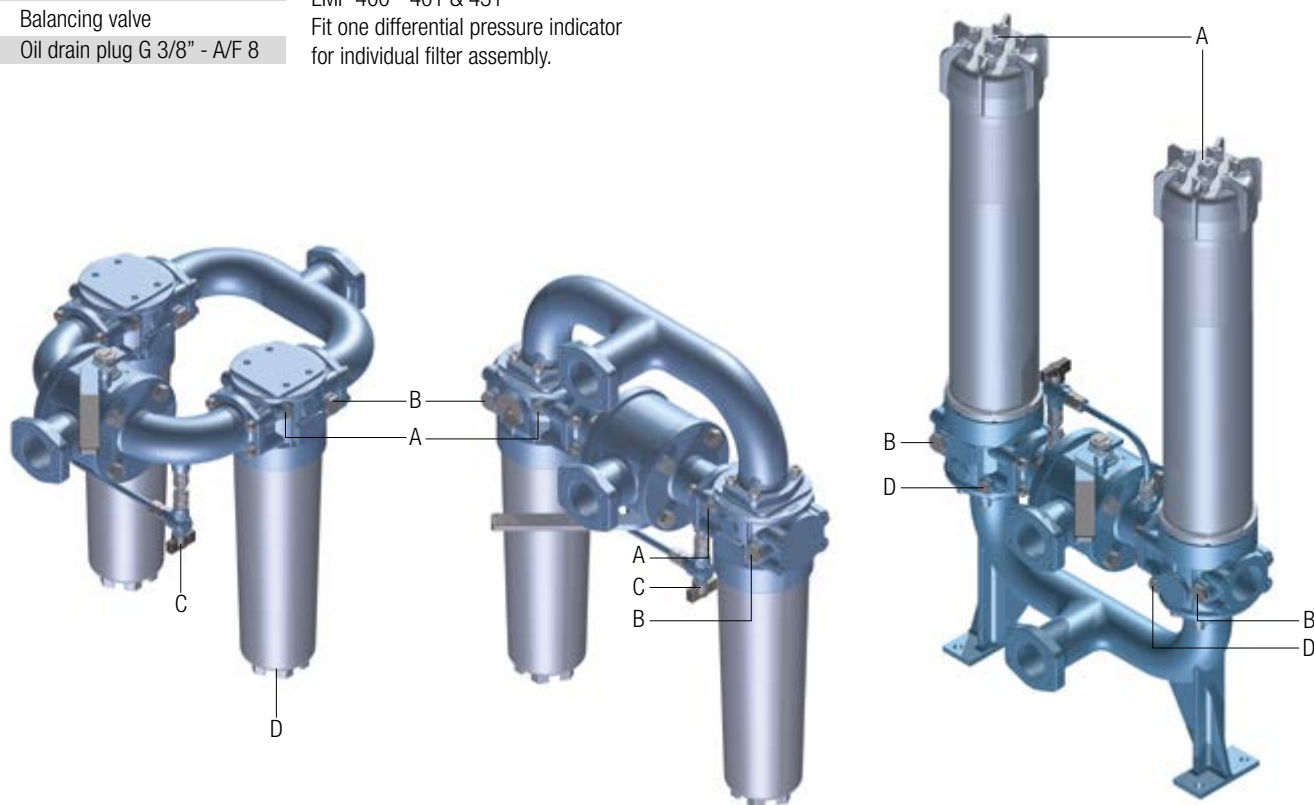


The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

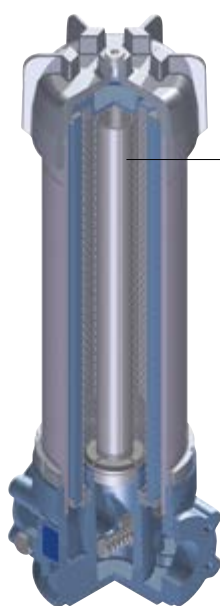
Focus on

- A** Breather plug G 3/8" - A/F 8
- B** Indicator port Plug T2 - A/F 30
- C** Balancing valve
- D** Oil drain plug G 3/8" - A/F 8

LMP 400 - 401 & 431
Fit one differential pressure indicator
for individual filter assembly.



LMD 431: Execution P02



"Internal tube
for low flow rate"
is recommended
for flow rate values
below 150 l/min.

The use of option P02
makes it easier to fill
the housing with the
operating fluid.

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 With bypass 3.5 bar										
Seals and treatments										
V FPM										
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										
V FPM										
Element Δp	Execution									
N 20 bar	P01 MP Filtri standard									
	Pxx Customized									

CLOGGING INDICATORS

See page 784

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

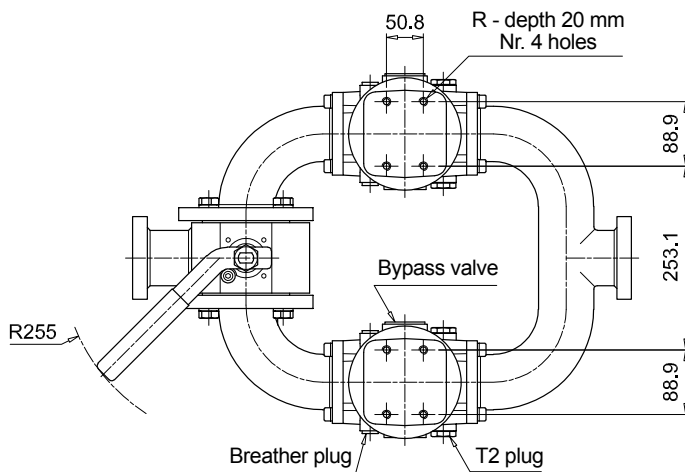
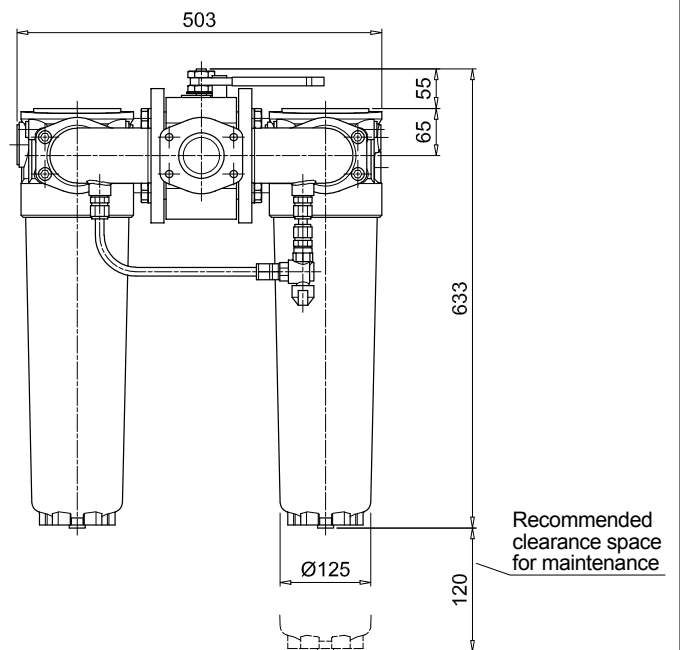
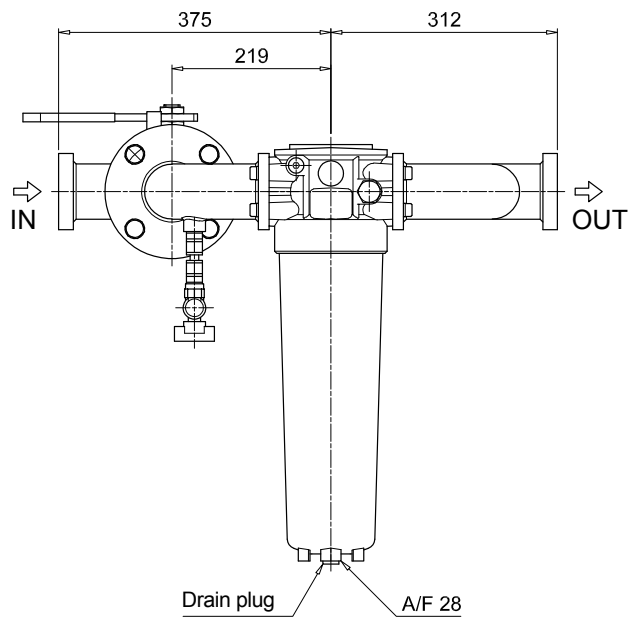
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

T2 Plug

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



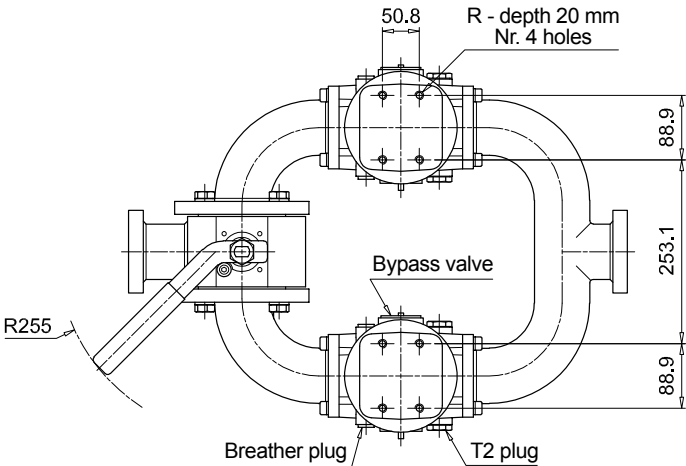
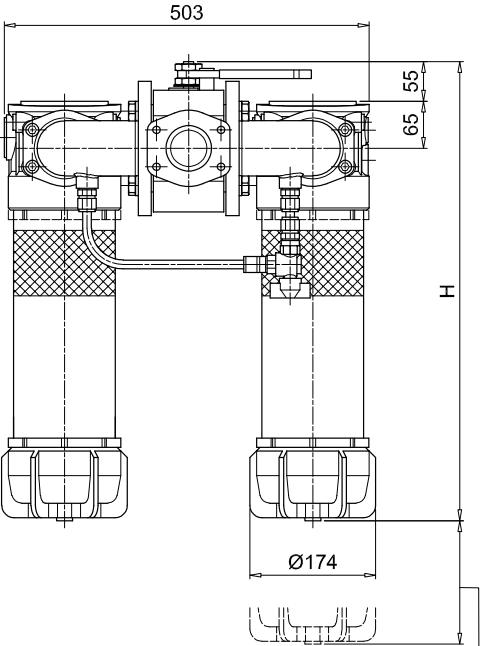
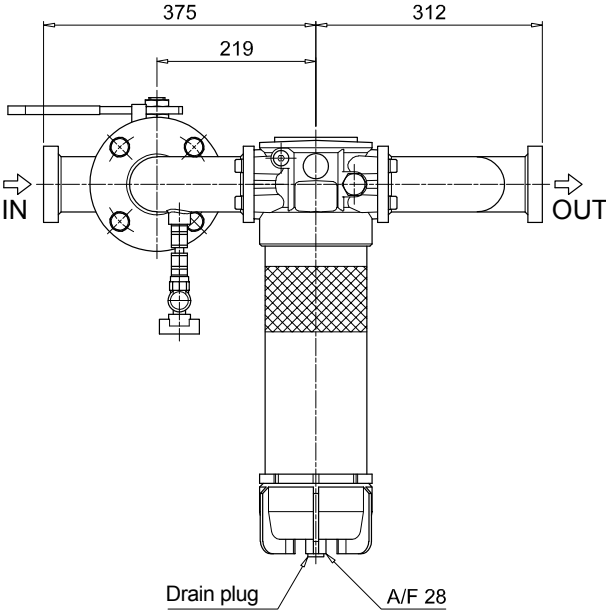
T2 plug = connection for differential pressure indicator

LMD 400-401

Dimensions

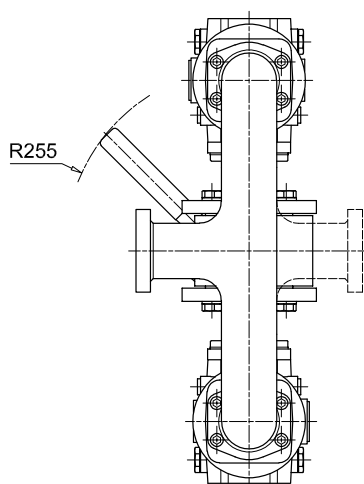
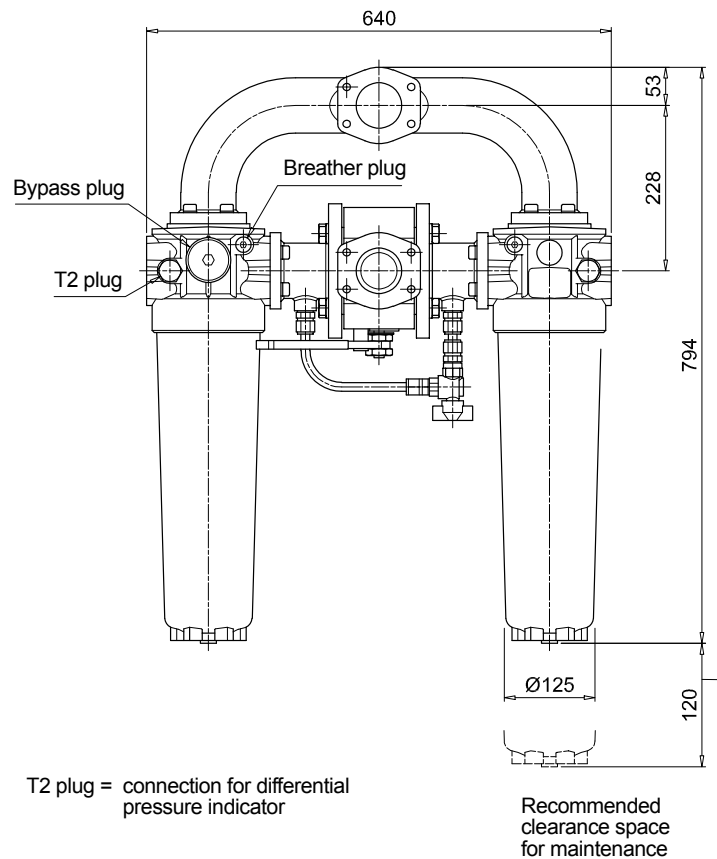
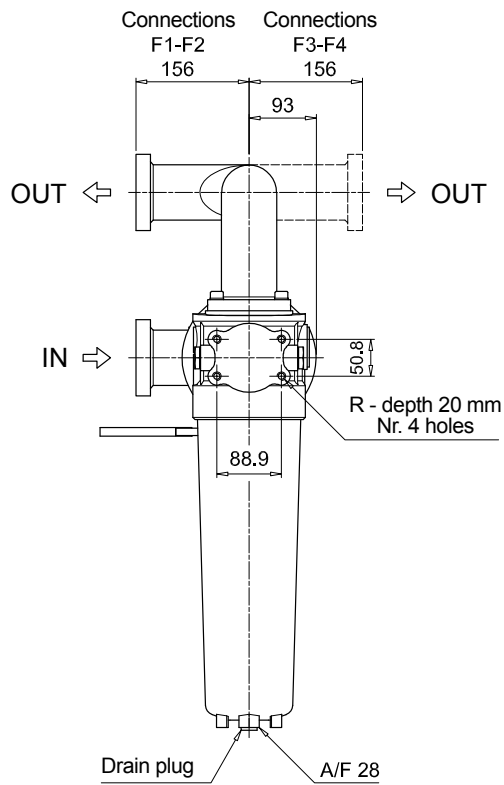
LMD400			
Length 5 - 6			
Filter length	H [mm]	H2 [mm]	
		Execution P01	P02
5	883	120	660
6	1213	120	690

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



H2 - Recommended clearance space for maintenance

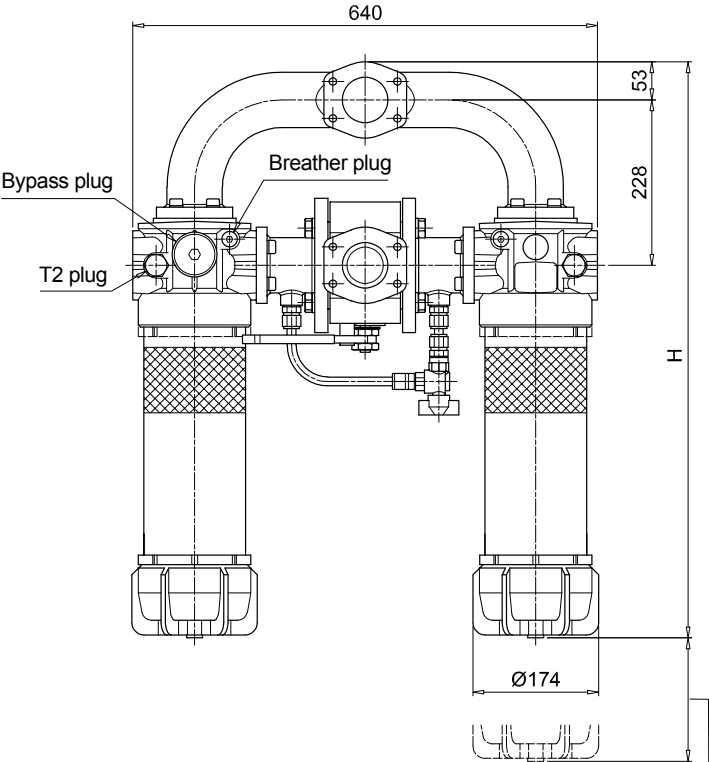
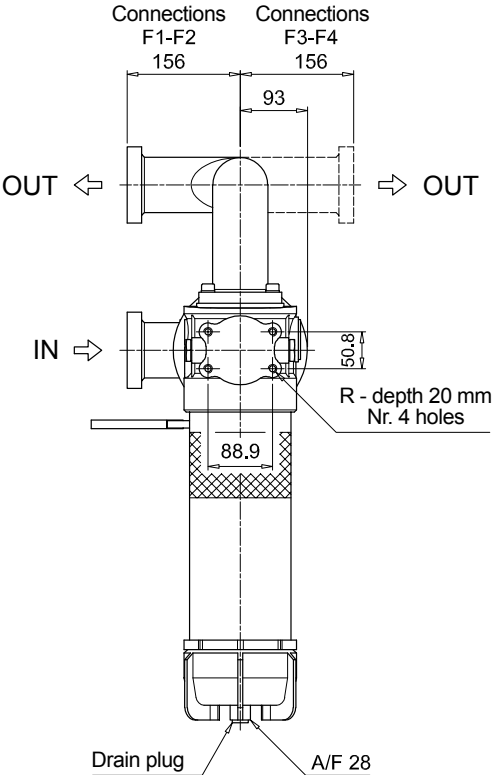
T2 plug = connection for differential pressure indicator



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

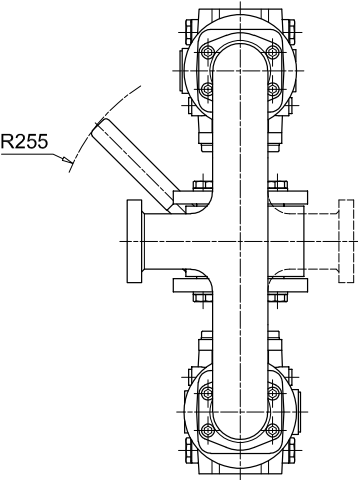
LMD 400-401

Dimensions



T2 plug = connection for differential pressure indicator

H2 - Recommended clearance space for maintenance



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

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 With bypass 3.5 bar														
Seals and treatments																
V FPM																
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		Execution														
N 20 bar		P01 MP Filtri standard														
		P02 With internal tube for low 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												
V			FPM									
						Element Δp		Execution				
						N		20 bar		P01		MP Filtri standard
										Pxx		Customized

CLOGGING INDICATORS

See page 784

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

DTA Electronic differential pressure indicator	
DTI I-O Link electronic differential pressure indicator	
DVA Visual differential pressure indicator	
DVM Visual differential pressure indicator	

PLUGS

See page 807

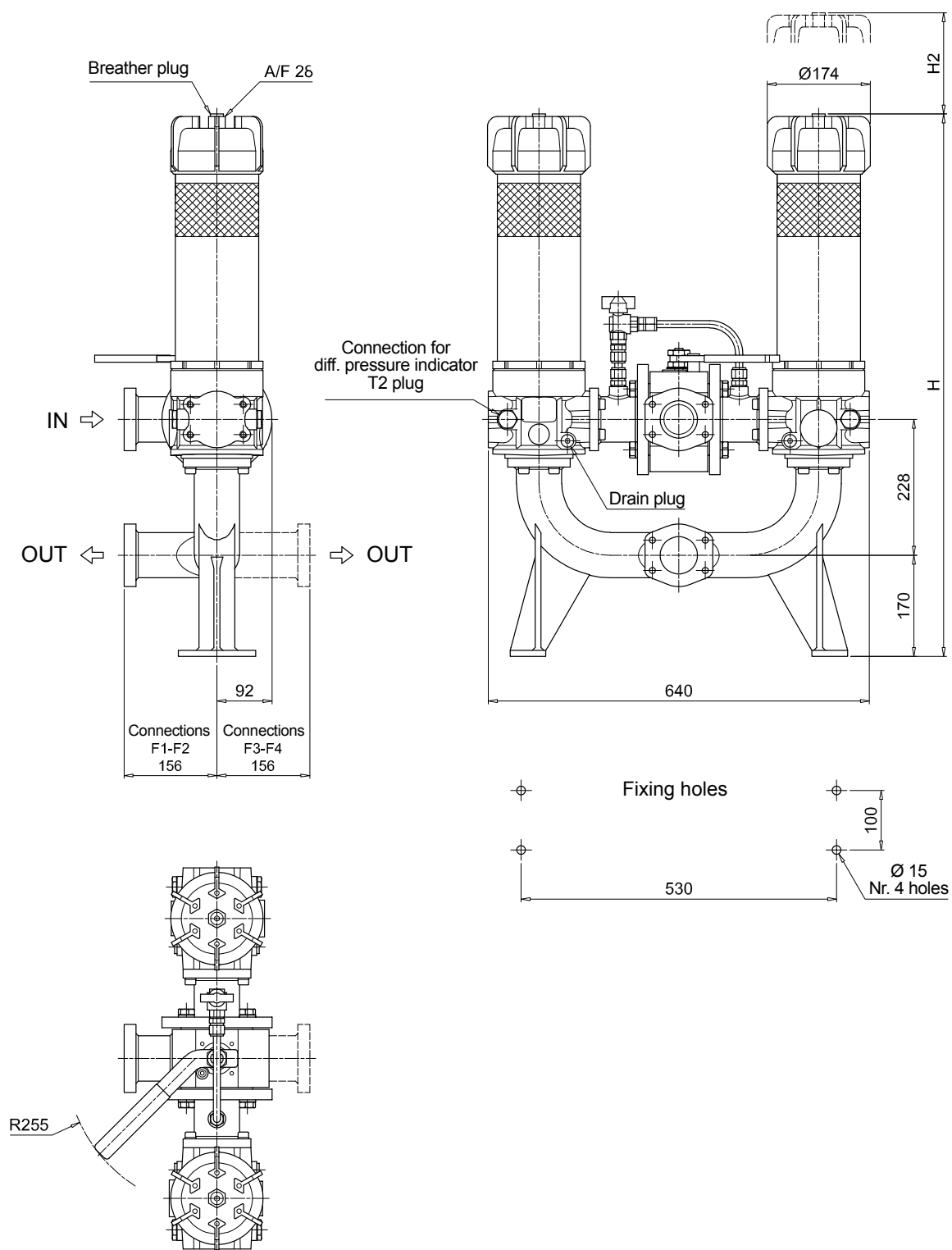
T2 Plug	
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LMD 431

Dimensions

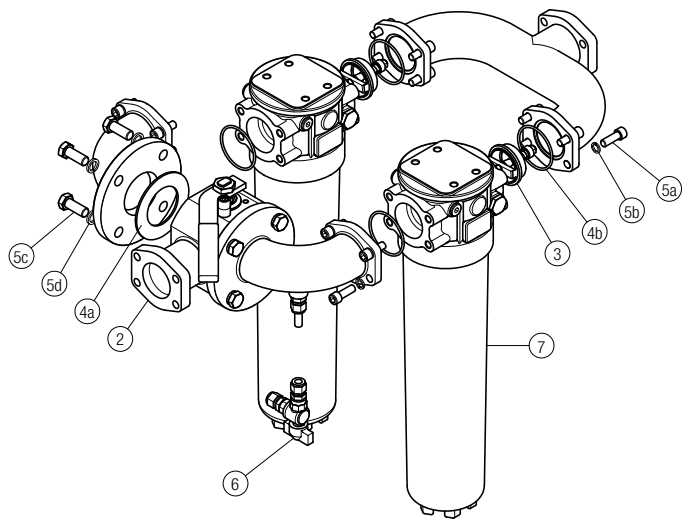
LMD431

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



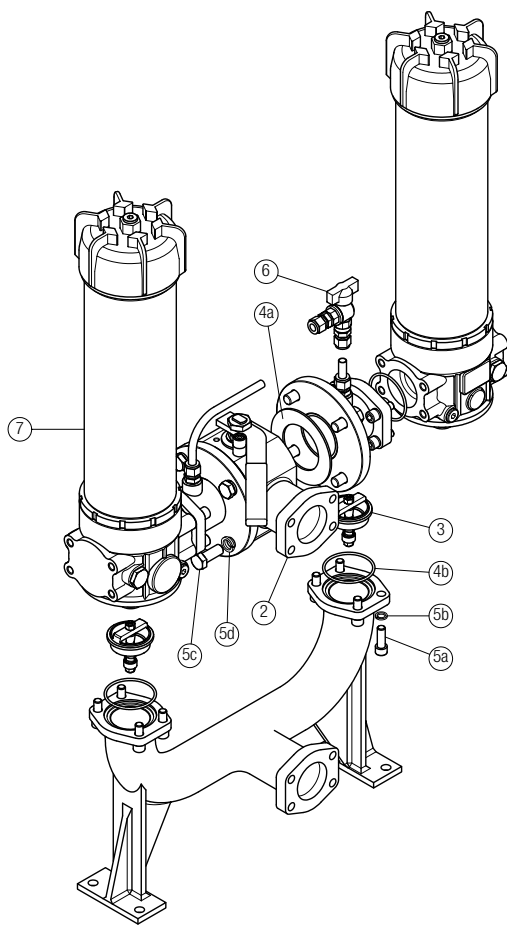
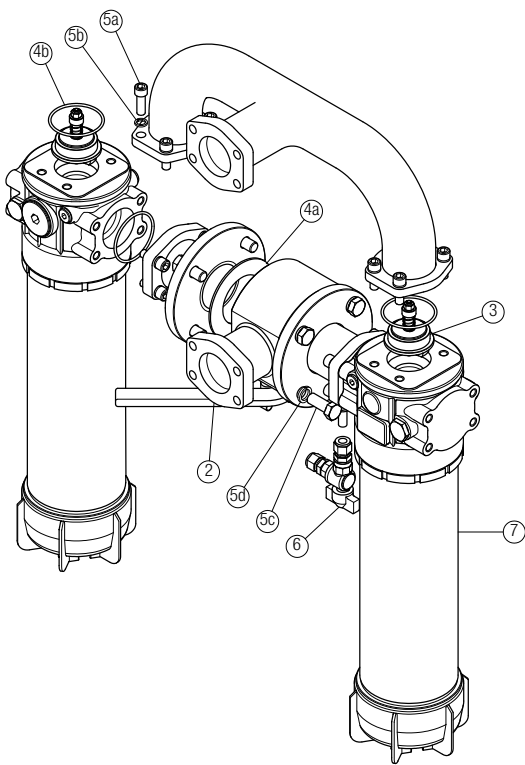
Order number for spare parts

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		2	3	4 (4a ÷ 4b)	5 (5a ÷ 5d)	6	7
		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 See order table
LMD 400-401-431		02001440	02001441	02001429	02050399	02049062	02025043
							LMP400xF2.....