

# LMD 400-401 & 431 series

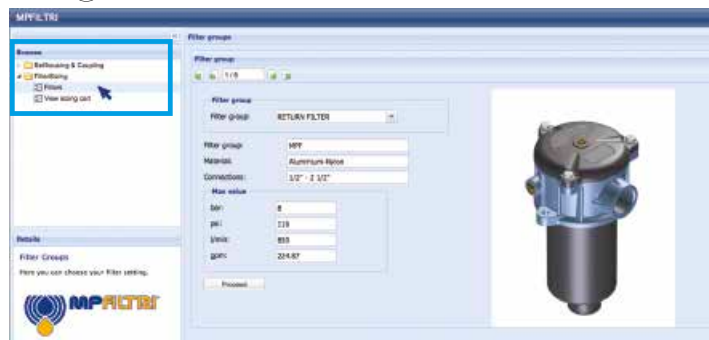
Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 600 l/min





# TYPICAL FILTER SIZING Selection Software

**Step 1** Select "FILTERS"



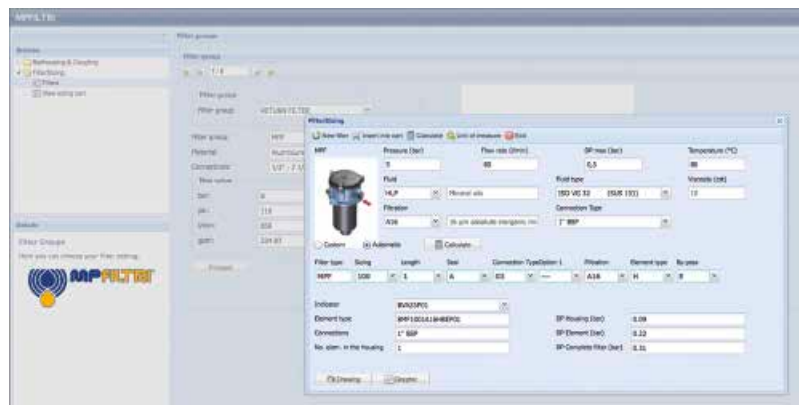
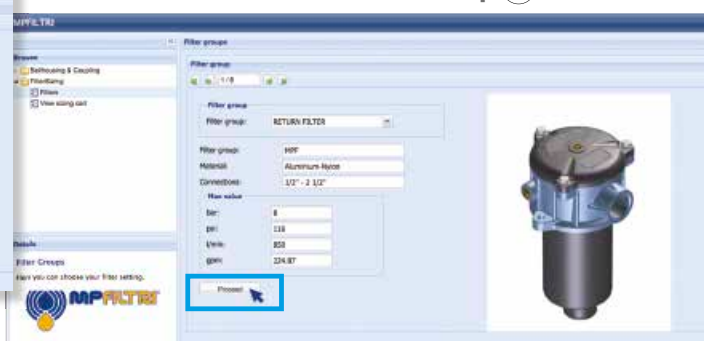
**Step 2** Choose filter group (Return Filter, Pressure Filter, etc.)



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



**Step 4** Push "PROCEED"



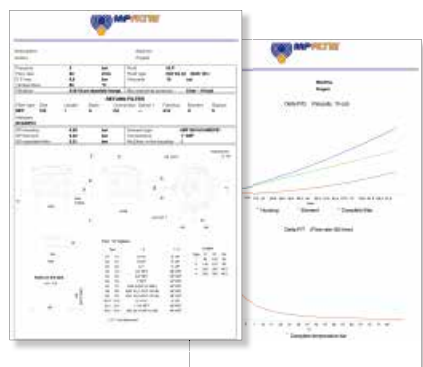
**Step 5**

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"



## 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 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.

#### $\Delta p$ element type

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

#### Seals

FPM series V

#### Temperature

From -25° C to +110° C

#### Connections

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

#### Note

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



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

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

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

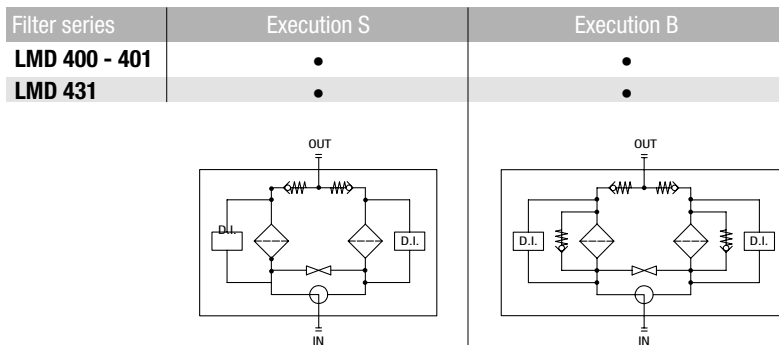
**Maximum flow rate for a complete low and medium pressure filter with a pressure drop  $\Delta p = 0.7$  bar.**

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

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

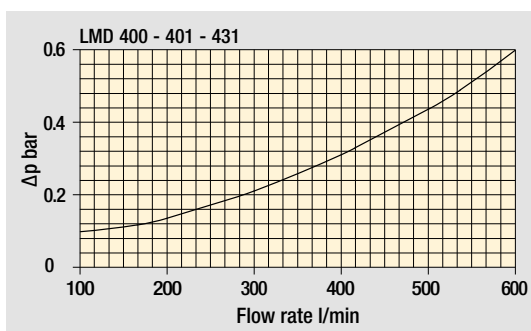
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure. Please, contact our Sales Department for further additional information.

Hydraulic symbols

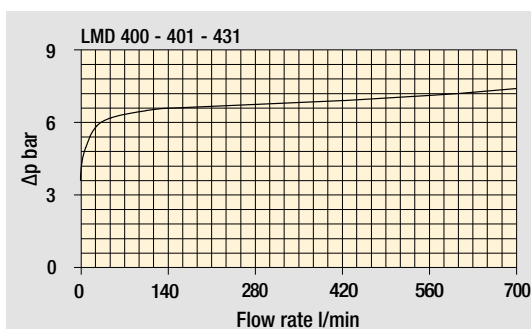


Pressure drop

Filter housings  $\Delta p$  pressure drop

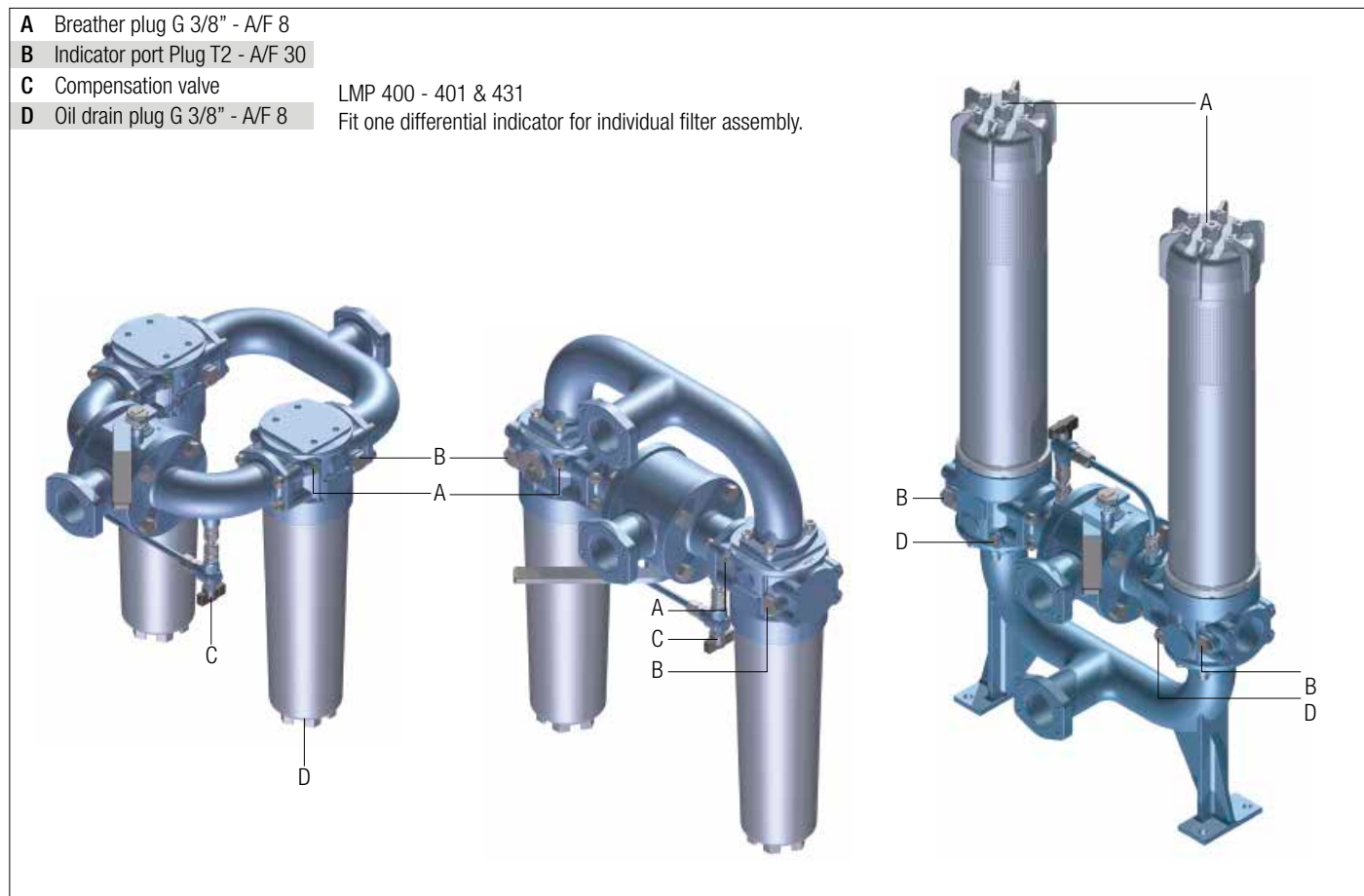


Bypass valve pressure drop

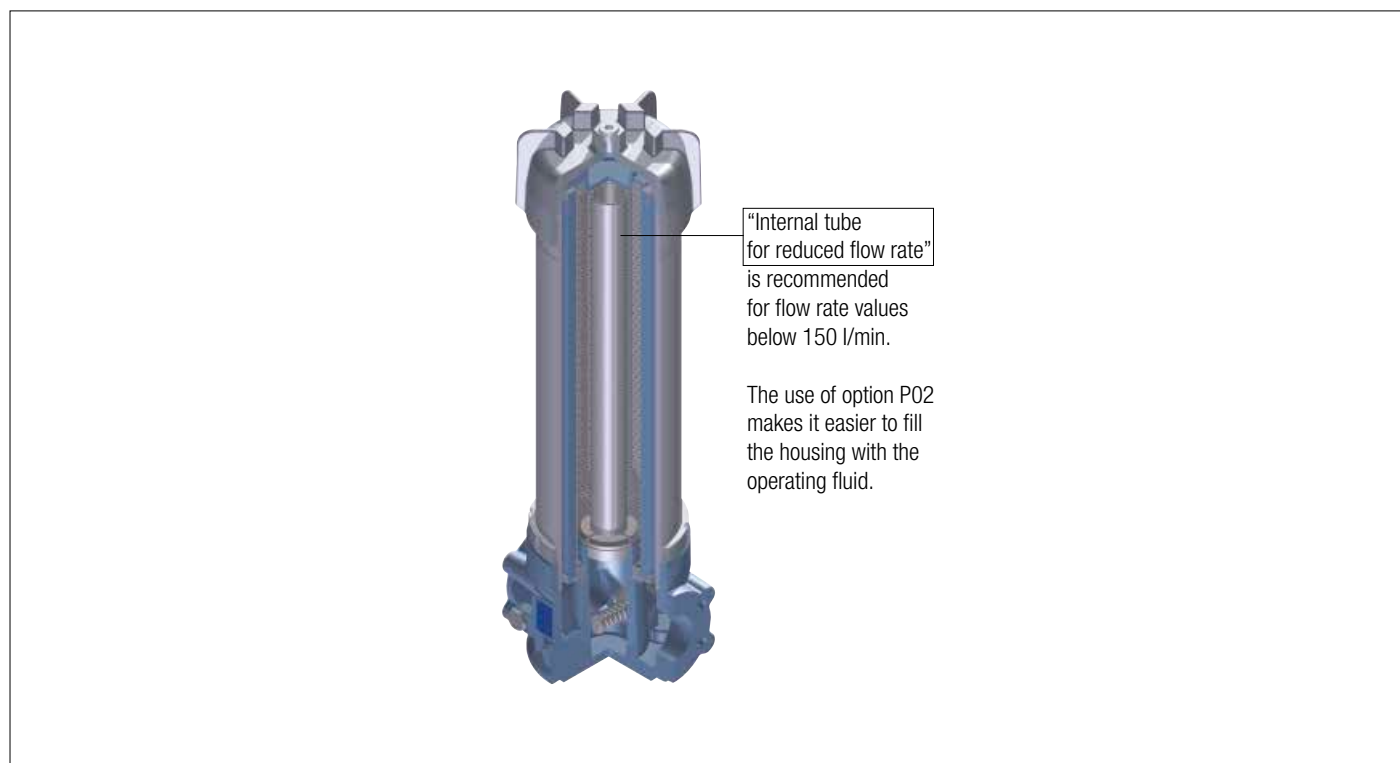


The curves are plotted using mineral oil with density of 0.86 kg/dm<sup>3</sup> in compliance with ISO 3968.  $\Delta p$  varies proportionally with density.

Focus on



## LMD 431: Execution P02





# LMD 400-401

## Designation & Ordering code

### COMPLETE FILTER

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

### FILTER ELEMENT

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

### ACCESSORIES

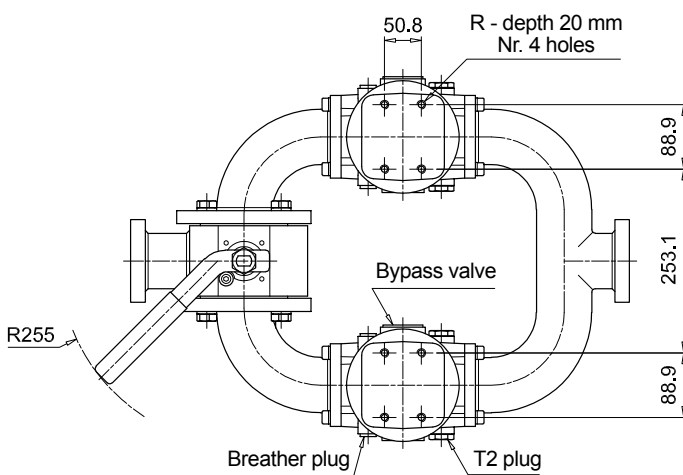
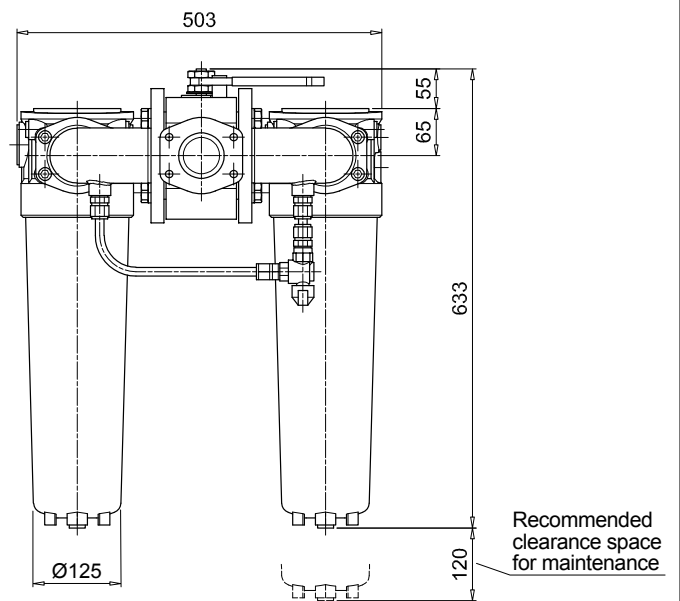
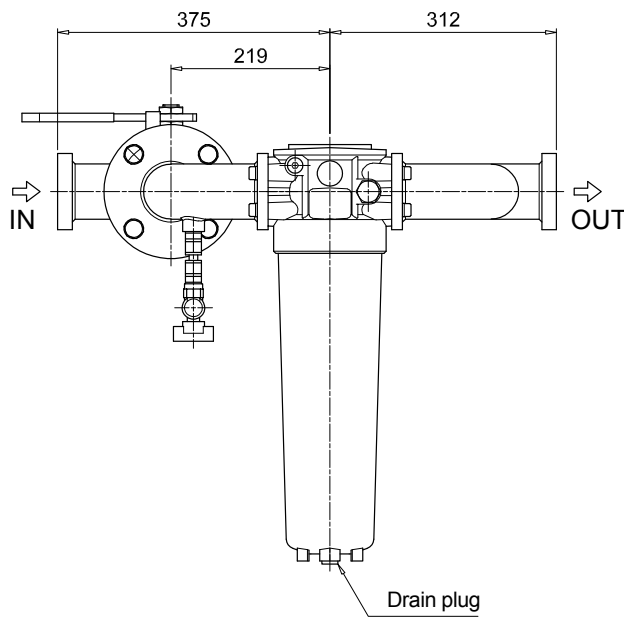
Differential indicators		page		page	
<b>DEA</b> Electrical differential indicator	445	<b>DTA</b> Electronic differential indicator	448		
<b>DEM</b> Electrical differential indicator	445-446	<b>DVA</b> Visual differential indicator	448		
<b>DLA</b> Electrical / visual differential indicator	446-447	<b>DVM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

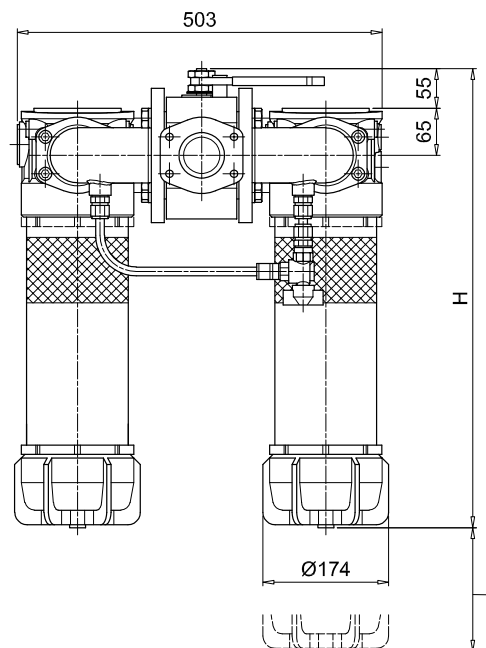
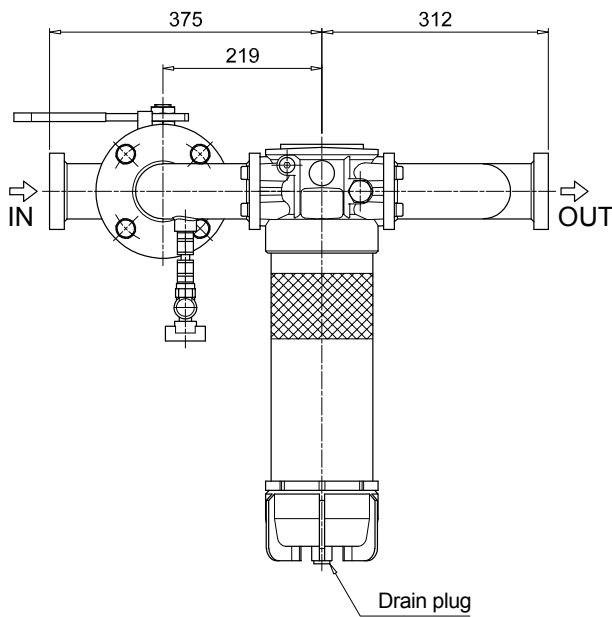
## Dimensions

LMD400

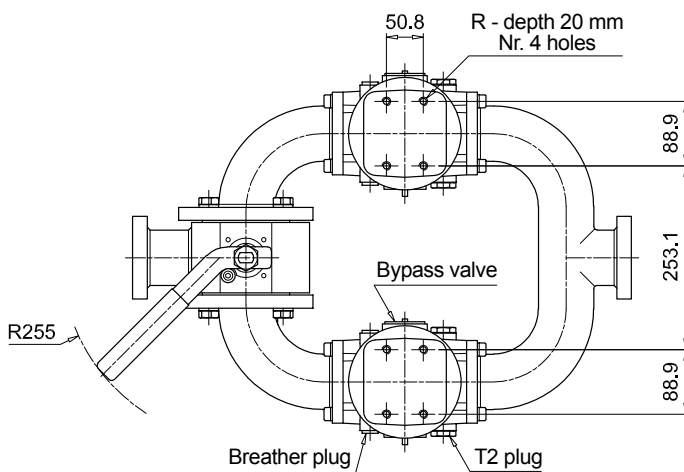
Length 5 - 6

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



H2 - Recommended clearance space for maintenance

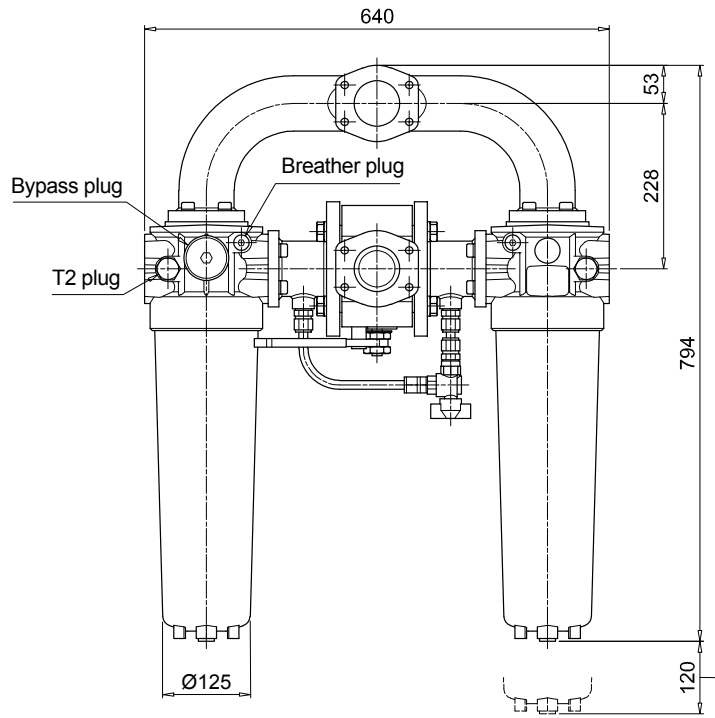
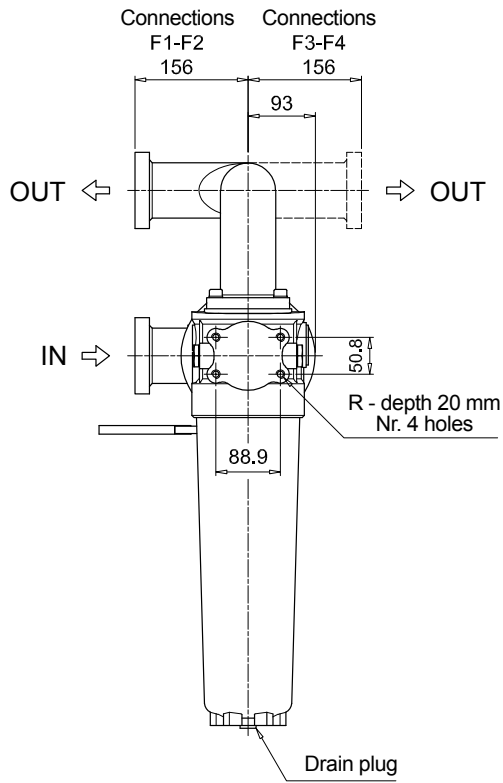


T2 plug =  
Connection for differential indicator

# LMD 400-401

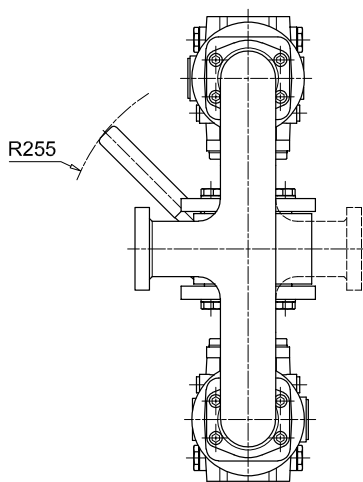
## Dimensions

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



T2 plug =  
connection for differential indicator

Recommended  
clearance space  
for maintenance



# LMD 400-401

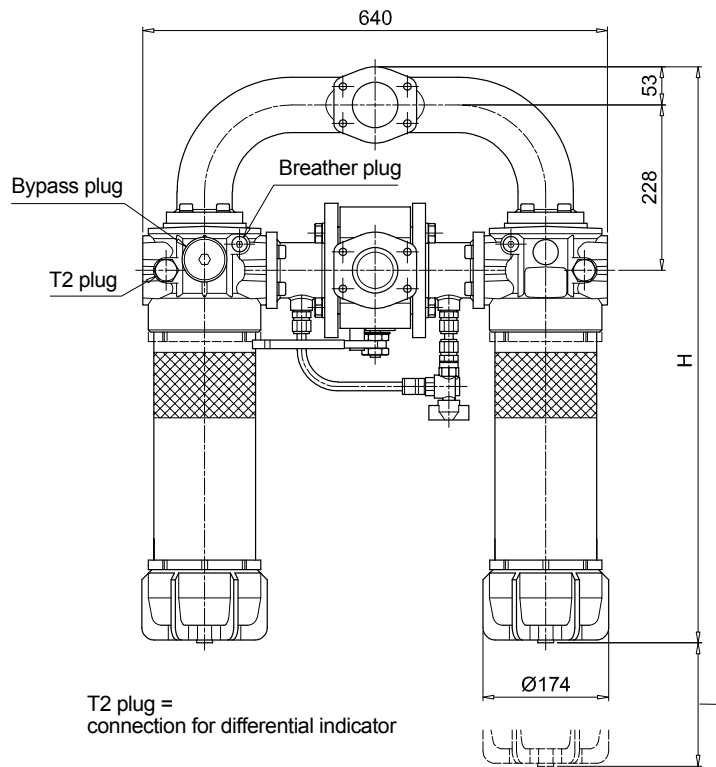
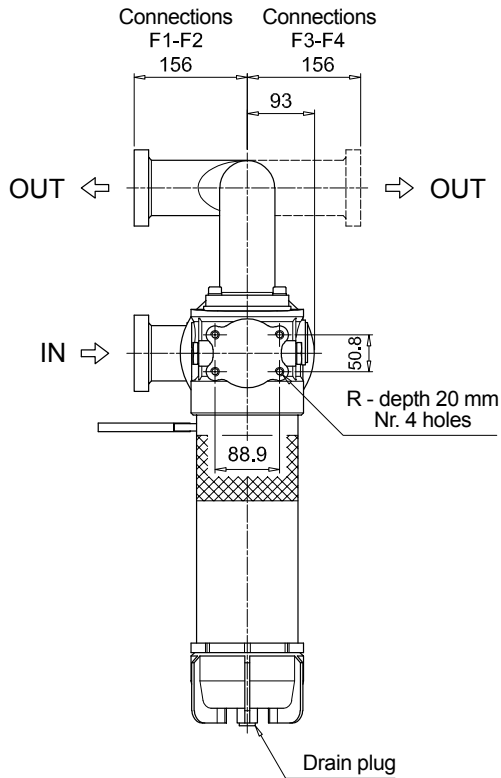
## Dimensions

LMD401

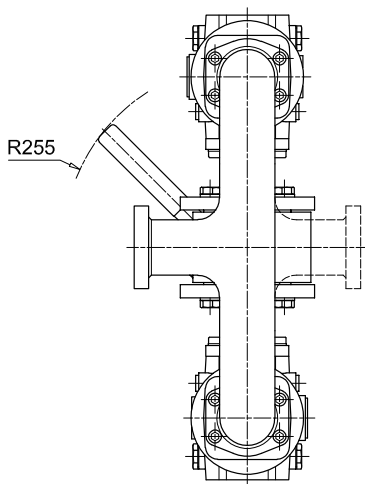
Length 5 - 6

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

<b>Series and size</b>	Configuration example: <b>LMD431</b>   <b>5</b>   <b>B</b>   <b>V</b>   <b>F1</b>   <b>A10</b>   <b>N</b>   <b>P01</b>									
<b>LMD431</b>										
<b>Length</b>	5   6									
<b>Bypass valve</b>	S Without bypass   B 3.5 bar									
<b>Seals and treatments</b>	Filtration rating									
V FPM	Axx	Mxx	Pxx							
	•	•	•							
<b>Connections</b>										
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									
<b>Filtration rating (filter media)</b>										
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									
<b>Element Δp</b>	N 20 bar									
<b>Execution</b>	P01 MP Filtri standard									
	P02 With internal tube for reduced flow rate									
	Pxx Customized									

### FILTER ELEMENT

<b>Element series and size</b>	Configuration example: <b>CU400</b>   <b>5</b>   <b>A10</b>   <b>V</b>   <b>N</b>   <b>P01</b>						
<b>CU400</b>							
<b>Element length</b>	5   6						
<b>Filtration rating (filter media)</b>							
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						
<b>Seals</b>	Filtration rating						
V FPM	Axx	Mxx	Pxx				
	•	•	•				
<b>Element Δp</b>	N 20 bar						
<b>Execution</b>	P01 MP Filtri standard						
	Pxx Customized						

### ACCESSORIES

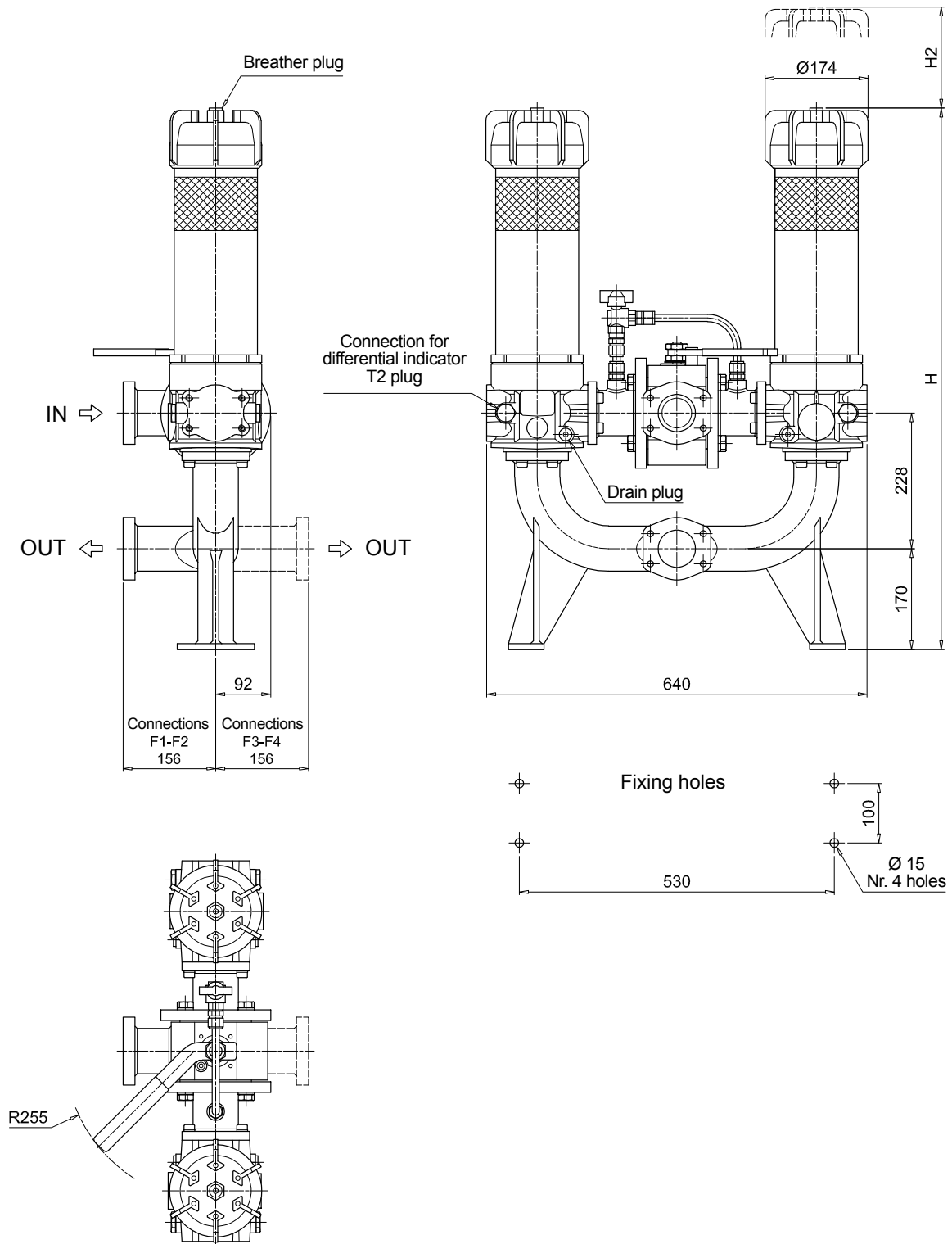
<b>Differential indicators</b>	page		page
DEA Electrical differential indicator	445	DTA Electronic differential indicator	448
DEM Electrical differential indicator	445-446	DVA Visual differential indicator	448
DLA Electrical / visual differential indicator	446-447	DVM Visual differential indicator	448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

# LMD 431

## Dimensions

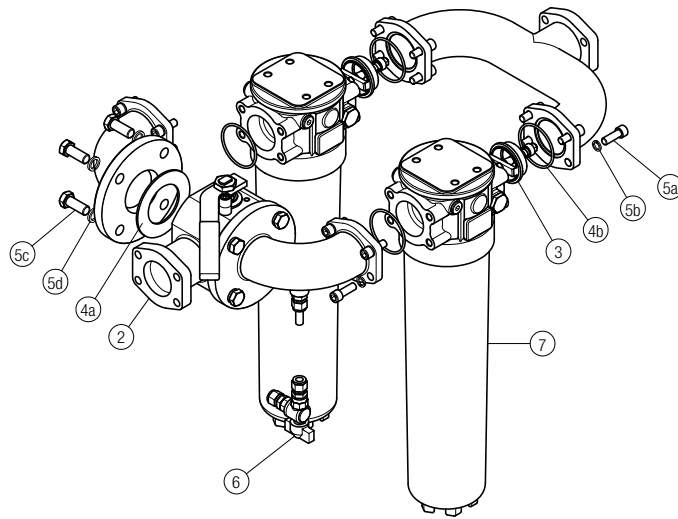
### LMD431

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



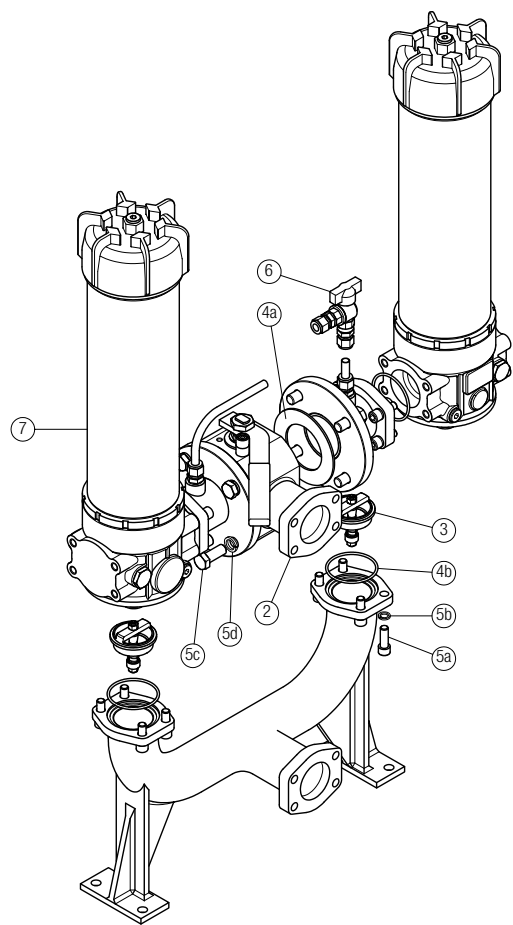
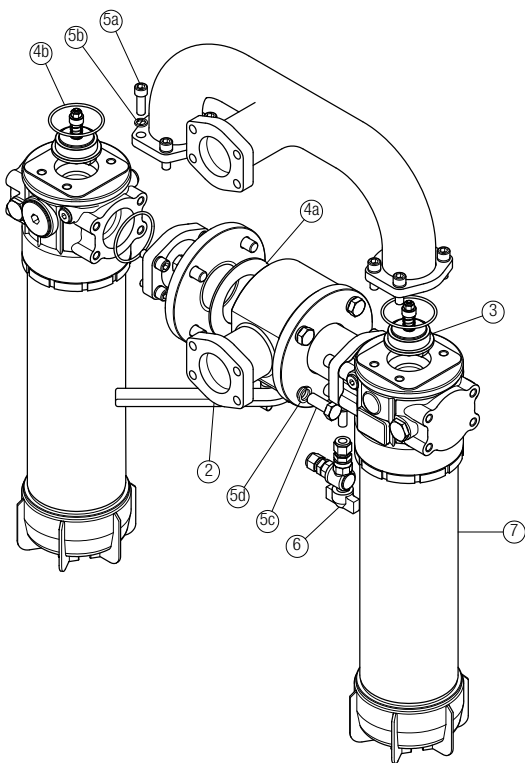
Order number for spare parts

**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
<b>LMD 400-401-431</b>	02001440	02001441	02001429	02050399	02049062	02025043	LMP400xF2.....