LMD 211 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 200 l/min
LMD 211 GENERAL INFORMATION

Low & Medium Pressure filters

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

LMD211 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 1 1/2” and flanged connections up to 1 1/2”, for a maximum flow rate of 200 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid.
  For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve integrated in the changeover lever, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

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

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

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

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

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25° C to +110° C

Connections
Inlet/Outlet In-Line

Note
LMD 211 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

<table>
<thead>
<tr>
<th>Filter series</th>
<th>Weights [kg]</th>
<th>Volumes [dm³]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Length 1</td>
<td>2</td>
</tr>
<tr>
<td>LMD 211</td>
<td>9.5</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Low & Medium Pressure filters
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. \( \Delta p \) varies proportionally with density.

### Filter element design - \( N \) Series

<table>
<thead>
<tr>
<th>Filter series</th>
<th>Length</th>
<th>A03</th>
<th>A06</th>
<th>A10</th>
<th>A16</th>
<th>A25</th>
<th>M25</th>
<th>M60</th>
<th>M90</th>
<th>P10</th>
<th>P25</th>
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<tbody>
<tr>
<td>LMD 211</td>
<td>1</td>
<td>90</td>
<td>95</td>
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<td>156</td>
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<td>2</td>
<td>113</td>
<td>121</td>
<td>158</td>
<td>162</td>
<td>173</td>
<td>192</td>
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<td>3</td>
<td>131</td>
<td>146</td>
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<td>169</td>
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<td>193</td>
<td>194</td>
<td>194</td>
<td>184</td>
<td>187</td>
</tr>
</tbody>
</table>

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](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.
## COMPLETE FILTER

<table>
<thead>
<tr>
<th>Series and size</th>
<th>Configuration example:</th>
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<tbody>
<tr>
<td>LMD211</td>
<td>LMD211 3 B A C 6 A10 N P01</td>
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</table>

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>2</td>
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<tr>
<td>3</td>
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<table>
<thead>
<tr>
<th>Bypass valve</th>
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<tbody>
<tr>
<td>S</td>
<td>Without bypass</td>
</tr>
<tr>
<td>B</td>
<td>With bypass 3.5 bar</td>
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</table>

<table>
<thead>
<tr>
<th>Seals and treatments</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>NBR</td>
</tr>
<tr>
<td>V</td>
<td>FPM</td>
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<table>
<thead>
<tr>
<th>Connections</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>G 1 1/2&quot;</td>
</tr>
<tr>
<td>F</td>
<td>1 1/2&quot; NPT</td>
</tr>
<tr>
<td>I</td>
<td>SAE 24 - 1 7/8&quot; - 12 UN</td>
</tr>
<tr>
<td>L</td>
<td>1 1/2&quot; SAE 3000 psi/M + G 1 1/4&quot;</td>
</tr>
<tr>
<td>M</td>
<td>1 1/2&quot; SAE 3000 psi/UNC + 1 1/4&quot; NPT</td>
</tr>
<tr>
<td>N</td>
<td>1 1/2&quot; SAE 3000 psi/UNC + SAE 20 - 1 5/8&quot; UN</td>
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</table>

<table>
<thead>
<tr>
<th>Connection for differential indicator</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>6</td>
<td>With plugged connection</td>
</tr>
</tbody>
</table>

**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 and treatments**

- A: NBR
- V: FPM

**Element Δp**

- N: 20 bar

**Execution**

- P01: MP Filtri standard
- Pxx: Customized

**A C3 N6B A10 P01**

**Connection for differential indicator**

- With plugged connection (6)

**PLUGS**

- See page 706

**CLOGGING INDICATORS**

- DEA: Electrical differential indicator
- DEM: Electrical differential indicator
- DLA: Electrical / visual differential indicator
- DLE: Electrical / visual differential indicator
- DTA: Electronic differential indicator
- DVA: Visual differential indicator
- DVM: Visual differential indicator

**T2** Differential indicator plug

**See page 686**
### LMD 211

**Dimensions**

<table>
<thead>
<tr>
<th>Filter length</th>
<th>H [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>2</td>
<td>513</td>
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<tr>
<td>3</td>
<td>651</td>
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</tbody>
</table>

**Connections**

- C: M10
- F - I: 3/8” UNC
- L: M10
- M - N: 3/8” UNC

**Recommended clearance space for maintenance**

- R - depth 15 mm Nr. 3 holes
- R - depth 15 mm Nr. 4 holes

**Connection for differential indicator**

- T2 plug
### LMD 211 SPARE PARTS

Order number for spare parts

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<thead>
<tr>
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<td>T2H</td>
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**Low & Medium Pressure filters**

![Diagram of LMD 211](image-url)