M4
High pressure
Load sensing control valve
Product Overview - M4 series

Technical data M4-12

Maximum working pressure
- P: 350 bar
- A/B: 420 bar

Maximum inlet flow
- Lateral inlet: 150 l/min
- Central inlet: 200 l/min

Maximum work port flow
- With compensator: 130 l/min
- Without compensator: 140 l/min

Maximum number of sections
- With lateral inlet: 10
- With central inlet: 20
Product Overview - M4 series
Technical data M4-15

Maximum working pressure
- P: 350 bar
- A/B: 420 bar

Maximum inlet flow
- Lateral inlet: 200 l/min
- Central inlet: 300 l/min

Maximum work port flow
- Compensator w/ load holding: 160 l/min
- Compensator w/o load holding: 200 l/min
- Without compensator: 200 l/min

Maximum number of sections
- With lateral inlet: 9
- With central inlet: 18
Product Overview - M4 series

Technical data M4-22

Maximum working pressure
- P: 350 bar
- A/B: 420 bar

Maximum inlet flow
- Lateral inlet: 600 l/min

Maximum work port flow
- Compensator w/ load holding: 400 l/min
- Without compensator: 400 l/min

Maximum number of sections
- With lateral inlet: 8
Product Overview - M4 series
Modular system M4-12

1. **Inlet elements**
   - OC Lateral, CC Lateral & Central
   - Mono, Safety cut-off, Priority

2. **Pressure limitation**
   - Primary, Secondary,
   - LS, Electro proportional LS

3. **Actuation A-side**
   - Mechanical, Hydraulic, Electrohydraulic, OBE

4. **Actuation B-side**
   - Levers, tougue, none

5. **End plates**
   - With or without LS unloading, aux. function valves
Product Overview - M4 series
Section M4-12
Product Overview - M4 series
Section M4-15
# Product Overview - M4 series

## Pressure compensator – M4-12

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
<th>Flow Rate</th>
<th>Pressure Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>“S”</td>
<td>Pressure compensator with load holding</td>
<td>130 l/min</td>
<td>0 shims up to 7 bar, 1 shim up to 9.5 bar, 2 shims up to 11.5 bar</td>
</tr>
<tr>
<td>“C”</td>
<td>Without compensator with load holding</td>
<td>140 l/min</td>
<td></td>
</tr>
<tr>
<td>“Q”</td>
<td>Without compensator without load holding</td>
<td>140 l/min</td>
<td></td>
</tr>
</tbody>
</table>

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Product Overview - M4 series

Main spool – M4-12

Symmetric main spool

<table>
<thead>
<tr>
<th>Spool type</th>
<th>Pressure compensator</th>
<th>Flow in l/min</th>
</tr>
</thead>
<tbody>
<tr>
<td>E, J, Q</td>
<td>S</td>
<td>073-073</td>
</tr>
<tr>
<td></td>
<td>100-100</td>
<td>052-052</td>
</tr>
<tr>
<td></td>
<td>065-065</td>
<td>034-034</td>
</tr>
<tr>
<td></td>
<td>057-070</td>
<td>023-023</td>
</tr>
<tr>
<td></td>
<td>070-070</td>
<td>014-014</td>
</tr>
<tr>
<td></td>
<td>090-090</td>
<td>007-007</td>
</tr>
<tr>
<td>C</td>
<td>063-063</td>
<td>065-065</td>
</tr>
<tr>
<td></td>
<td>057-070</td>
<td>026-026</td>
</tr>
<tr>
<td></td>
<td>070-070</td>
<td>010-010</td>
</tr>
<tr>
<td></td>
<td>090-090</td>
<td>005-005</td>
</tr>
<tr>
<td></td>
<td>105-115</td>
<td>028-028</td>
</tr>
<tr>
<td></td>
<td>115-115</td>
<td>017-017</td>
</tr>
<tr>
<td></td>
<td>090-090</td>
<td>008-008</td>
</tr>
</tbody>
</table>

Example:
- Spool type J
- Pressure compensator S
- Setpoint value: $q_{\text{consumers}} = 90 \text{ l/min}$

Solution:
- 85-liter spool + 2 discs = 100 l/min
- Set 90 liters via stroke limiter.

<table>
<thead>
<tr>
<th>Spool type</th>
<th>Pressure compensator</th>
<th>Flow in l/min</th>
<th>Number of discs</th>
</tr>
</thead>
<tbody>
<tr>
<td>E, J, Q</td>
<td>S</td>
<td>073-073</td>
<td>With 2 discs (pressure compensator $\Delta p = 8.5 \text{ to } 11.5 \text{ bar}$)</td>
</tr>
<tr>
<td></td>
<td>057-070</td>
<td>028-028</td>
<td>With 1 disc (pressure compensator $\Delta p = 6 \text{ to } 9.5 \text{ bar}$)</td>
</tr>
<tr>
<td></td>
<td>070-070</td>
<td>017-017</td>
<td>Without disc (pressure compensator $\Delta p = 4 \text{ to } 7 \text{ bar}$)</td>
</tr>
</tbody>
</table>
Main spool characteristics

The spool characteristics is determined by the notch geometry

Individual adaption to machine function is possible upon request.

Example of notch geometry from linear to linear smooth characteristics
Product Overview - M4 series

LS pressure relief valve

Pressure ranges
0-150 bar
150-350 bar
Electro proportional LS relief valve KBPS

- Flangeable to housing
- Rising or falling characteristic
- Limits pressure on both A and B port
- LS relief valves can be used as maximum pressure limitation
Product Overview - M4 series
Mechanical disengaged hand lever cover

- Non-following hand lever during electrical control
- Increased safety
- Less hysteresis
Product Overview - M4 series
M4-12 Mono-block / Mono-inlet

- Combined inlet with integrated section
- Compact dimensions
- Cost saving
- Standalone valve or flangeable for adding further sections
- Screw in cartridge valve option for:
  - LS switch-off
  - LS proportional relief valve
Product Overview - M4 series
CPM 1-x | CAN bus controlled Pilot Module for M4-12 and M4-15

Characteristics
- Volumetric / closed loop control
- Piloting is based on the proven Rexroth EHS technology
- CAN bus control with excellent precision and positioning speed
- Cooperation with Bosch Automotive Electronics
- Self diagnosis and error memory
- BODAS software for commissioning and service
- Secured recovery partition for valve data
- Inductive sensor with a resolution < 10 µm
- Dual sensor version for safety application
- Security concepts for the machine up to PLd according to ISO 13849

Technical data
- Protocol: CANOpen
- CAN-Baud rate: 125kBaud .. 1MBaud
- Operating voltage: 24 V (16 to 32V)
- Electrical power consumption: 2,2 .. 19,7 W
Product Overview - M4 series

Online Configurator

Gain access to

- Technical data
- Hydraulic schematics
- 2D installation drawings
- 3D models
- Component list
- Worldwide fast delivery for prototypes or small series with preferred program

Preferred type

www.boschrexroth.com/m4-configurator