Mobile Control Valves

MOBILE CONTROL VALVES
BOSCH REXROTH WORLDWIDE

HOME
LS SYSTEM
RM 10
M4
OBE
LUDV SYSTEM
RS12
RS20/22
LT17 BRAKE VALVE
HMI COMPONENTS
Electronic joystick 4THES
Ergo Handles
Handle options
Handle vibration
Foot pedals
Electronic Foot Pedal 4THENR
MOBILE CONTROL VALVES

LS – LOAD SENSE SYSTEMS

Advantages:
- Start of movement and fine control are independent of load and flow
- Load-independent parallel operation under non-saturated conditions
- Efficient even under fine control

Energy Lost

Pressure

Flow
MOBILE CONTROL VALVES

CONTROL BLOCK RM10 – RM15

Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pump flow</td>
<td>90, 150 l/min</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>280 bar</td>
</tr>
<tr>
<td>A &amp; B ports pressure</td>
<td>320 bar</td>
</tr>
</tbody>
</table>

Features

- Load pressure-independent flow control
- Integrated industry trending LS section pressure and work port relief valve cartridges
- Types of actuation: mechanical (hand lever), hydraulic, electrohydraulic
- Flexible assembly with no transition interface needed between standard and high flow sections
- Produced with Bosch Rexroth know-how from years of design and application experience
- Optimized size for today's energy-efficient systems utilizing load sensing technology

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CONTROL BLOCK M4

Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pump flow</td>
<td>130, 200, 600 l/min</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>350 bar</td>
</tr>
<tr>
<td>A &amp; B ports pressure</td>
<td>420 bar</td>
</tr>
</tbody>
</table>

Features

- Efficient work in every application through precise, sensitive control and good fine control range
- Unique online configurator reduces development times and accelerates deliveries ([www.boschrexroth.com/m4configurator](http://www.boschrexroth.com/m4configurator))
- High reliability in operations thanks to proven quality and extensive experience in the field
- Easily accessible components and thoroughly considered modular system simplify maintenance and repairs
- CANbus control with excellent precision and positioning speed (for M4-12 and M4-15)
- Security concepts for the machine up to PLd according to ISO 13849
MOBILE CONTROL VALVES

CPM 1-X | CAN BUS CONTROLLED PILOT MODULE FOR M4-12 AND M4-15

Technical data

- Protocol: CAN Open
- Baud Rate: 125k...1M baud
- Voltage: 24V (16...32V)

Features

- 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

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LS – LUDV FLOW SHARING LOAD SENSE SYSTEMS

Advantages:
- Start of movement and fine control are independent of load and flow
- Load-independent parallel operation under saturated conditions
- Efficient even under fine control

Energy Lost
LUDV CONTROL BLOCK RS12

Technical data

- Maximum pump flow: 120, 180 l/min
- Inlet pressure: 350 bar
- A & B ports pressure: 350 bar

Features

- Closed-center design – no losses in neutral
- Flow sharing load sensing valve
- Anti saturation
- High energy efficiency through low flow resistance in the control block
- Higher flow capacity with improved controllability possible
LUDV MAIN CONTROL VALVE RS22/20/15Q/15

Technical data

<table>
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<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pump flow</td>
<td>180, 240, 300, 400 l/min</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>380 bar</td>
</tr>
<tr>
<td>A &amp; B ports pressure</td>
<td>420 bar</td>
</tr>
</tbody>
</table>

Features

- Closed-center design – no losses in neutral
- Load independent flow distribution LUDV
- Pre-loaded integrated tank line checks possible
- Good repeatability, less hysteresis
- Unloading-function for faster response
- Priority for slew and AUX function with LS sections

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DUAL-CIRCUIT POWER BRAKE VALVE LT13K

Technical data

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>30</td>
</tr>
<tr>
<td>Inlet pressure</td>
<td>210 bar</td>
</tr>
<tr>
<td>Brake pressure</td>
<td>Up to 125 bar</td>
</tr>
</tbody>
</table>

Features

- Compact module with Dual-circuit power brake valve and accumulator charging valve, optionally with parking brake
- Brake pressure proportional to actuating force and path
- Sensitive metering
- Electric or mechanical parking brake valve (optional)
- Quick and easy installation
- All functions in one housing, less piping

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HMI – HUMAN MACHINE INTERFACE

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# 4THE5 ELECTRONIC JOYSTICK BASE

![Image of 4THE5 Electronic Joystick Base](image)

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<tbody>
<tr>
<td>Output signals</td>
<td>CAN, Analog, PWM</td>
</tr>
<tr>
<td>Performance level</td>
<td>PLc, PLd capable, PLd (SIL2)</td>
</tr>
<tr>
<td>Operating voltage</td>
<td>5V or Vbat 12-24V</td>
</tr>
<tr>
<td>Protection</td>
<td>IP68</td>
</tr>
</tbody>
</table>

## Features

- Compact and robust
- Same plunger kinematics as hydraulic range
- Reduced transmission and refresh rates
- Range of different torque curves & pre-feelings
- Software detents available
- Switches, rockers and rollers on handgrip directly piloted by the base
- Input stage and output stage protected (ESD, overvoltage, short circuit) – Vbat or 5V regulated
- High EMC compatibility

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**LT17 BRAKE VALVE**

**HM COMPONENTS**
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- Ergo Handles
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- Handle vibration
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ERGONOMIC HANDLE RANGE

Features

- Soft touch material
- Increase comfort and ensure a safe grip by material friction.
- Higher quality image to your end-user.
- Face personalization
- Different configurations of functions layout.
- Innovative options
  - Capacitive Hand detection (EC3500+)
  - Vibration Feedback (EC2000+)

Technical data

- Number of proportional controls: up to 3
- Number of On/Off controls: up to 6

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HANDLE COMPONENTS

- **Roller (Proportional)**
- **Rocker (FNR)**
- **Switch**

### Technical data
- **Performance level**: Plc / PLd capable
- **IP level**: IP69K mounted
- **Mechanical life**: 2 Mio cycles

### Features
- **Rocker**
  - 2 momentary positions or 3 stable positions
  - Exist in orange color for FNR
- **Roller**
  - Heavy-duty thumbwheel with a cap shaped to improve ergonomics
- **Switch**
  - Contact-switch NO / NC / NONC
  - Hall-effect redundant or single channel
  - Different colors of membranes
  - Different engraved logos
MOBILE CONTROL VALVES

HANDLE VIBRATION OPTION

Technical data

Input
Vbat (12-24v) On/Off

Feeling
On/Off patterns

Vibration sequences can alert the driver from:

- Movement progress information
- Risk warning (ex: Tip over, object detection ...)
- Approaching limits of defined safe working area
- Low fuel level, engine temperatures to high ...
- Etc. ...

- Input signal from machine controller or through 4THE5 CAN joystick (Pattern library included).
MOBILE CONTROL VALVES

ELECTRONIC AND HYBRID FOOT PEDALS

Technical data

- Output signals: CAN, Analog, PWM
- Performance level: PLc, PLd capable, PLd (SIL2)
- Operating voltage: 5V or Vbat 12-24V
- Protection: IP67

Features

- Compact and robust design
- Identical haptics like hydraulic products
- Efficient transmission and refresh rates
- Dampening function in Track Pedal
- Input stage and output stage protected (ESD, overvoltage, short circuit)

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4THE5NR ELECTRONIC TRAVEL PEDAL

- Compact and robust
- Smooth transition to electronification with the modular design (Hydraulic / Hybrid / Electronic)
- Innovative dampening system (Temperature independent)
- Input stage and output stage protected (ESD, overvoltage, short circuit) – V bat or 5 V / 12 V regulated
- Exist also on a single pedal version for auxiliary functions
- Low installation space

Technical data

Output signals: CAN, PWM
Performance level: PLc, PLd capable, PLd (SIL2)
Operating voltage: 5V or Vbat 12-24V
Protection: IP68