Down-streamed individual pressure compensator and flow divider principle

Proportional Directional Valve
System Series LVS18
Solutions for mobile hydraulics

Sectional Design

Description

Modular structure for versatile options

The proportional valves in sandwich design – which we have especially developed for mobile applications – control the volumetric flow internal to the actuator. Down-streamed individual pressure compensators (load-sensing principle) ensure the independence of the load. The flexible designed modular system is consisting of one inlet module, actuator modules (up to 8 sections) and one end module. As highlights, we would point out the sections with integrated onboard electronic and fieldbus operation. The flow divider principle represents an efficient system for the prevention of undersupply.

Especially for the ATEX sector, there are deliverable explosion proof components (device classes G and D).

Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum inlet flow rate</td>
<td>l/min 400</td>
</tr>
<tr>
<td>Maximum actuator flow rate</td>
<td>l/min 260</td>
</tr>
<tr>
<td>Maximum pump pressure</td>
<td>bar 370</td>
</tr>
<tr>
<td>Maximum load pressure</td>
<td>bar 420</td>
</tr>
</tbody>
</table>

Application examples

- Mobile canes
- Fire fighter vehicles
- Mining machines
- Transshipment units
- Reach stacker
- Earth drilling machines
- Working platforms
- Offshore applications
- Forest machines

Advantages

- High power spectrum
- Individual adaptation to the application (up to 8 actuator sections)
- ATEX certificated valves: intrinsically safe design for device classes G and D
- Flow divider principle by down-streamed individual pressure compensators
- OBE with CAN Open actuation, position control, characteristic curves adaptation and diagnostic ability. Functional safety according to EN ISO 13849, PL “c”
- Different kinds of operation: electrical, hydraulic, manual and their combinations
- Individual protection of the work connections.
- Sensitive and load-independent control – also at parallel operation
Functions

- Pump pressure protection and pressure relief of the max. load pressure
- Pressure valves, anti-cavitation valves or combined pressure/anti-cavitation valves inside the work connections
- For the usage with variable displacement pump or fixed displacement pump
- With DIN ISO respectively UNF thread connections or with SAE flanges
- Pressure difference (pump pressure - max. load pressure) ca. 12 bar at valve inlet port
„No matter how unusual your client’s requirements, our solutions are just as adaptable“

**System solution**

**Analogue system solution**

*Hydraulically operated*

- Hydraulic joystick controller
  - actuation of the hydraulically controlled valves via X/Y-axes

![Hydraulic joystick controller](image1)

**Analogue system solution**

*Electro-hydraulically operated*

- Electrical joystick controller
  - Analogue

- Proportional amplifire
  - for 6 proportional solenoids

![Electrical joystick controller](image2)

![Proportional amplifire](image3)
Fieldbus system solution (CANopen)

Operation system
The Bucher Hydraulics operating system offers these and many other ways, combining electronics and hydraulics to your system solution.
- Visualization
- Data logging
- Parametrization
- Diagnostic
- CANopen interface
- Functional security

Electrical joystick
- Operation
- Diagnostic
- Configuration
- Data download
- Parametrization

Graphic terminal
- Mobile SPS

Master board
- analogue

Sensor
Overview modules and functions

1. Inlet module with system pressure protection and pressure relief of the max. load pressure
2. Actuator module hydraulically controlled
3. Actuator module electrically/manually operated with anti-cavitation valves
4. Actuator module electrical operated with combined pressure/anti-cavitation valves inside the work connections as well as a displacement transducer for spool stroke control
5. Actuator module electrically operated with explosion proof pilot valves and displacement transducer for mining applications or other explosion risk areas (encapsulation/pressure casing), e.g. Ex II 2G c I T4
6. Actuator module electrical operated with OBE and CAN Bus
7. End module without any function

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