VD12
DIRECTIONAL CONTROL VALVE

VBR HYDRAULICS
MAIN FEATURES

- Direct acting with pull-type ON/OFF solenoid
- Compact design
- Product with wide customization options
- Designed with parallel connection
- Push pin manual override
- Wide range of spool types
- Wide range of auxiliary function for each working section
- Special ports dimensions available on request

TECHNICAL SPECIFICATION

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max flowrate on working ports</td>
<td>Up to 35 l/min</td>
</tr>
<tr>
<td>Max working pressure</td>
<td>250 bar</td>
</tr>
<tr>
<td>Max back pressure on T line</td>
<td>30 bar</td>
</tr>
<tr>
<td>Ambient temperature range</td>
<td>-20 / +50 °C</td>
</tr>
<tr>
<td>Fluid temperature range</td>
<td>-20 / +90 °C</td>
</tr>
<tr>
<td>Fluid viscosity range</td>
<td>10 ÷ 200 cSt</td>
</tr>
<tr>
<td>Fluid contamination degree</td>
<td>18/16/13 ISO4406</td>
</tr>
<tr>
<td>Materials</td>
<td>Inlet: Alluminum or Steel Zinc plated</td>
</tr>
<tr>
<td></td>
<td>Working section: Cast Iron Zinc plated</td>
</tr>
<tr>
<td>Port dimensions</td>
<td>G1/4 - G3/8 - SAE6 – RRM...</td>
</tr>
<tr>
<td>Nominal voltage</td>
<td>12 / 24 VDC</td>
</tr>
<tr>
<td>Coil power</td>
<td>20,5 W</td>
</tr>
<tr>
<td>Connector type</td>
<td>DT04-2P, AMP-JPT, DIN</td>
</tr>
</tbody>
</table>

Note: technical specification measured with mineral oil 46cSt @ 40°C
### ORDERING DESCRIPTION


<table>
<thead>
<tr>
<th>WORKING SECTION</th>
<th>A TYPE INLET SECTION</th>
<th>A1 TYPE INLET SECTION</th>
<th>B TYPE INLET SECTION</th>
<th>C TYPE INLET SECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X [mm]</td>
<td>Y [mm]</td>
<td>Z [mm]</td>
<td>X [mm]</td>
</tr>
<tr>
<td>2</td>
<td>123</td>
<td>130,6</td>
<td>107</td>
<td>98</td>
</tr>
<tr>
<td>3</td>
<td>160</td>
<td>167,6</td>
<td>144</td>
<td>135</td>
</tr>
<tr>
<td>4</td>
<td>197</td>
<td>204,6</td>
<td>181</td>
<td>172</td>
</tr>
<tr>
<td>5</td>
<td>234</td>
<td>241,6</td>
<td>218</td>
<td>209</td>
</tr>
<tr>
<td>6</td>
<td>271</td>
<td>278,6</td>
<td>255</td>
<td>246</td>
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<tr>
<td>7</td>
<td>308</td>
<td>315,6</td>
<td>292</td>
<td>283</td>
</tr>
<tr>
<td>8</td>
<td>345</td>
<td>352,6</td>
<td>329</td>
<td>320</td>
</tr>
</tbody>
</table>

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Hydraulic diagram

ORDERING EXAMPLE DESCRIPTION

VD12 / 5 / B - G38 - 210 - E / S - G38 - 1 - V, A - 150 - S / ... / 12 - DT

Directional Control Valve
Nr of working sections

INLET SECTION
VD12 / 5 / B - G38 - 210 - E / S - G38 - 1 - V, A - 150 - S / ... / 12 - DT

FIRST WORKING SECTION

OTHER WORKING SECTION

- Coil connection:
  - DT: Deutsch DT04-2P
  - DT: DIN 43650
  - A: AMP Junior Timer

- Coil Type:
  - 12: 12 VDC
  - 24: 24 VDC

- Manual Override Type:
  - S: standard
  - P: push button
  - L: manual lever

- Auxiliary function valve
- Pressure setting

- Port of Auxiliary function:
  - A and B
  - on port A
  - on port B

- Auxiliary function:
  - A: Anticavitation valve
  - B: Pilot operated check valve
  - L: Relief valve
  - V: Relief and anticavitation valve
  - U: Unloading valve
  - Q: Overcenter valve

- (Other function on request)

Port dimensions:
G14: BSP G14
G38: BSP G38
S06: UN-UNF SA65

Main relief valve
Pressure setting

E: with Solenoid Unloader valve
EP: with Solenoid Unloader valve with pin override
ES: with Solenoid Unloader valve with screw override

Port type:
L: side port
S: upper port

Port dimensions:
G14: BSP G14
G38: BSP G38
S06: UN-UNF SA65

Spool type:
1. A and B closed in central position (CC)
2. A and B to Tank in central position (CC)
3A: closed and B to Tank in central position
3B: B closed and A to Tank in central position
6A: A and B to Tank in central position + Regenerative to A
6B: A and B to Tank in central position + Regenerative to B
(Other spool type on request)

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A Type Inlet Section

Inlet section with pressure relief valve and unloading valve

- P and T ports BSP G3/8"
- M Pressure gauge BSP G1/4"
- Aluminum body
- Manual adjustment pressure relief valve
- Unloading valve

Dimensions

Hydraulic diagram
A1 Type Inlet Section

Inlet section with compact design

- P and T ports BSP G3/8”
- M Pressure gauge BSP G1/4”
- Aluminum body

Hydraulic diagram

Dimensions

- 2 Mounting Holes M8 Depth 10
B Type Inlet Section

Inlet section with LS line and proportional pressure compensated flow regulator

- T2 port BSP G1/2"
- P1, P2, T1, T3 ports BSP G3/8"
- M and LS ports BSP G1/4"
- Aluminum body
- Pressure compensator stand-by 11 bar
- Manual adjustment pressure relief valve
- Orifice LS bleeding
- Unloading valve

Hydraulic diagram

Dimensions

Main relief valve

Proportional flow regulator

Unloading valve
Customized Inlet Sections

C type

Inlet section with control for single effect actuator

- P, S and T ports BSP G3/8”
- M Pressure gauge BSP G1/4”
- Aluminum body
- Manual adjustment pressure relief valve
- Unloading valve

Dimensions

**Hydraulic diagram**
D type

Inlet section with LS line and double proportional pressure pre-compensated flow regulator

- P and T ports BSP G1/2”
- M and LS port BSP G1/4”
- Aluminum body
- Pressure compensator stand-by 11 bar or 16 bar
- Manual adjustment pressure relief valve
- Orifice LS bleeding
- Unloading valve

Hydraulic diagram

Dimensions
WORKING ELEMENTS

- A and B ports BSP G3/8” or G1/4”
- Direct acting with PULL type on/off solenoid
- Cast iron body
- Available with 2 or 3 working sections
- Available with different manual override
**SPOOLS**

**Type 1**  
A&B closed in central position

**Type 2**  
A & B to tank in central position

**Type 3A/3B**  
A closed and B to Tank or B closed and A to tank in central position

**Type 6A/6B**  
A and B closed in central position and regenerative function in pos. 1 or 2

*Other special spool types available on request*

**Spool pressure drop**

**Operating limits**

*Standard type*: push pin override  
*P type*: push button override
SA outlet cover with pressure relief valve

- Manual adjustment pressure relief valve
- A and T ports BSP G 3/8”
- MA port BSP G1/4”
- Aluminum body

Other options available on request

Hydraulic diagram

Dimensions
**Main Relief Valves**

Valves for A, C and SA covers

- Standard main relief valve
- Anti tampering cap (A)
- Handknob (K)

Valves for B and D covers

- Standard main relief valve

**Unloading Valves**

- Standard unloading valve (E)
- With push pin override (EP)
- With screw override (ES)

Pressure drop characteristics

Pressure range characteristics
**PROPORTIONAL FLOW REGULATOR**

- Available with or without screw override
- Other flow characteristics on request

**COILS**

For unloading valve

<table>
<thead>
<tr>
<th>DIN 43650/ISO4400</th>
<th>DEUTSCH DT04-2P-PL</th>
<th>DEUTSCH DT04-2P-PP</th>
<th>AMP JPT</th>
</tr>
</thead>
</table>

Voltage: 12 VDC and 24 VDC
Nominal power: 19 W
Duty cycle: ED100%
Ambient temperature range: -30 / +80°C
Coil Thermal Class: H (180°C)
**For working section**

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<td><strong>Voltage:</strong></td>
<td>12 VDC and 24 VDC</td>
</tr>
<tr>
<td><strong>Nominal power:</strong></td>
<td>20.5 W</td>
</tr>
<tr>
<td><strong>Duty cycle:</strong></td>
<td>ED100%</td>
</tr>
<tr>
<td><strong>Ambient temperature range:</strong></td>
<td>-40 / +105°C</td>
</tr>
<tr>
<td><strong>Coil Thermal Class:</strong></td>
<td>H (180°C)</td>
</tr>
<tr>
<td><strong>Transient voltage suppressor:</strong></td>
<td>P6KE33CA</td>
</tr>
</tbody>
</table>

**For proportional flow regulator**

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<tr>
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</tr>
<tr>
<td>DEUTSCH DT04-2P-PP</td>
<td>AMP JPT</td>
</tr>
<tr>
<td><strong>Voltage:</strong></td>
<td>12 VDC and 24 VDC</td>
</tr>
<tr>
<td><strong>Nominal power:</strong></td>
<td>21.6 W</td>
</tr>
<tr>
<td><strong>Max control current:</strong></td>
<td>1.8A for 12VDC - 0.9A for 24VDC</td>
</tr>
<tr>
<td><strong>Ambient temperature range:</strong></td>
<td>-20 / +80°C</td>
</tr>
<tr>
<td><strong>Coil Thermal Class:</strong></td>
<td>H (180°C)</td>
</tr>
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Available a wide range of auxiliary functions to flange on the working section.

- Anticavitation valves
- Pilot operated check valves
- Relief valves
- Relief and anticavitation valves
- Unloading valves
- Overcenter valves

*Other options available on request*

Some examples of auxiliary functions