Modular solenoid directional valves type HD-0611*, HD-0711*
direct operated, ISO 4401 size 06, modular assembly

HD are spool type, direct operated solenoid valves in modular execution.

Technical characteristics
They are derived from standard DHI directional valves (see KT tab. E010), but with special body for modular assembly with all ISO4401 size 06 modular valves.

Applications
In combination with other valves they permit to realize compact hydraulic circuits for directional control, by-pass, different pressures selection, not compensated fast/slow speed controls.

Surface mounting ISO 4401 size 06
Max flow 60 l/min
Max pressure: 350 bar

1 MODEL CODE

| HD-0611/*-1* | HD-0611/A-1* |
| HD-0711/*-I* | HD-0711/A-I* |

Modular directional valve size 06

Valve configuration, see section /L51880
- 61 = single solenoid, central plus external position, spring centered
- 63 = single solenoid, 2 external positions, spring offset
- 71 = double solenoid, 3 positions, spring centered

Spool type, see section /L51880

Options:
- A = solenoid mounted at side of port B
- WP = prolonged manual override (see KT, table ED10)

Note
Type of electric/electronic connector DIN 43650 to be ordered separately (for overall dimensions see table K500):
- 666 = standard connector IP-65, suitable for direct connection to electric supply source.
- 667 = as 666, but with built-in signal led.
- 669 = with built-in rectifier bridge for supplying DC coils by alternate current (AC 110V and 230V - Imax 1A).
- E-SD = electronic connector which eliminates electric disturbances when solenoid valves are de-energized.

2 HYDRAULIC SYMBOL and applications examples

Fast-slow speed
Pressure selection
3 MAIN CHARACTERISTICS OF HD-* DIRECTIONAL VALVES

Assembly position / location Any position for all valves
Subplate surface finishing Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)
Ambient temperature from -20°C to +70°C
Fluid Hydraulic oil as per DIN 51524 ... 535; for other fluids see section 1
Recommended viscosity 15 - 100 mm²/s at 40°C (ISO VG 15 - 100)
Fluid contamination class ISO 4401 class 21/19/16 NAS 1638 class 10 (filters at 25 μm value with β25 ≥ 75 recommended)
Fluid temperature -20°C +60°C (standard seals), -20°C +80°C (PE seals)
Flow direction As shown in the symbols of section 8
Operating pressure Ports P,A,B: 350 bar; Port T: 120 bar
Maximum flow 60 l/min

3.1 Coils characteristics

Insulation class H (180°C) Due to the occurring surface temperatures of the solenoid coils, the European standards EN563 and EN982 must be taken into account
Connector protection degree DIN 43650 IP 65
Relative duty factor 100%
Supply voltage tolerance ± 10%
Certification C UR US

4 ELECTRIC FEATURES

<table>
<thead>
<tr>
<th>Valve</th>
<th>External supply nominal voltage ± 10%</th>
<th>Voltage code</th>
<th>Type of connector / code of spare coil (2)</th>
<th>Power consumption (3)</th>
<th>Colour of coil label</th>
<th>Code of spare coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 DC</td>
<td>6 DC</td>
<td>666 or 667</td>
<td>HD-1*I</td>
<td>33 W</td>
<td>brown</td>
<td>COU-6DC / 80</td>
</tr>
<tr>
<td>9 DC</td>
<td>9 DC</td>
<td></td>
<td>HD-1*I</td>
<td></td>
<td>light blue</td>
<td>COU-9DC / 80</td>
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<tr>
<td>12 DC</td>
<td>12 DC</td>
<td></td>
<td>HD-1*I</td>
<td></td>
<td>green</td>
<td>COU-12DC / 80</td>
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<tr>
<td>14 DC</td>
<td>14 DC</td>
<td></td>
<td>HD-1*I</td>
<td></td>
<td>brown</td>
<td>COU-14DC / 80</td>
</tr>
<tr>
<td>18 DC</td>
<td>18 DC</td>
<td></td>
<td>HD-1*I</td>
<td></td>
<td>blue</td>
<td>COU-18DC / 80</td>
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<tr>
<td>24 DC</td>
<td>666</td>
<td></td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>red</td>
<td>COU-24DC / 80</td>
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<tr>
<td>28 DC</td>
<td>666</td>
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<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>silver</td>
<td>COU-28DC / 80</td>
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<tr>
<td>48 DC</td>
<td>666</td>
<td></td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>silver</td>
<td>COU-48DC / 80</td>
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<tr>
<td>110 DC</td>
<td>666</td>
<td></td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>black</td>
<td>COU-110DC / 80</td>
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<tr>
<td>125 DC</td>
<td>666</td>
<td></td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>black</td>
<td>COU-220DC / 80</td>
</tr>
<tr>
<td>220 DC</td>
<td>666</td>
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<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>black</td>
<td>COU-220DC / 80</td>
</tr>
<tr>
<td>2450 AC</td>
<td>48/80 AC</td>
<td>48/80 AC</td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>pink</td>
<td>COU-2450AC/80</td>
</tr>
<tr>
<td>230/50 AC</td>
<td>230/50 AC</td>
<td>230/50 AC</td>
<td>HD-1*I</td>
<td>60 VA (4)</td>
<td>light blue</td>
<td>COU-230/50AC/80</td>
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<tr>
<td>11050 AC</td>
<td>110RC</td>
<td>669</td>
<td>HD-1*I</td>
<td>40 VA</td>
<td>gold</td>
<td>COU-110RC / 80</td>
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<tr>
<td>23050 AC</td>
<td>230RC</td>
<td>669</td>
<td>HD-1*I</td>
<td>40 VA</td>
<td>blue</td>
<td>COU-230RC / 80</td>
</tr>
</tbody>
</table>

(1) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 - 15% and the power consumption is 55 VA.
(2) Average values based on tests preformed at nominal hydraulic condition and ambient/coil temperature of 20°C.
(3) In a cycle, where solenoid is energized/deenergized in 1 second (1 Hz), the average power consumption is 7 W; for longer cycles, the power consumption is lower.
(4) When solenoid is energized the inrush current is approx 3 times the holding current. Inrush current values correspond to a power consumption of about 150 VA.

5 DIMENSIONS [mm]

| HD-06** | Dotted line for version HD-07** |

ISO 4401: 2005
Mounting surface: 4401-03-02-0-05
Seals: 4 OR 108
Ports P,A,B,T: 7.5 mm (max.)

Connector wiring (666)
1–2 = Supply
3 = Coil ground

Pressure selection
Fast-slow flow