FAS 8 mm CHIPSOL
Direct acting solenoid valve

> 2/2, 3/2 NC/NO; Cartridge mounting
> Very compact design (ø 8 x 19 mm)
> Low power consumption (0.5 W)
> Long life up to 100 million cycles
> High flow to size ratio

Technical features

Medium:
Air, oxygen, neutral gases (10 % ... 95 % humidity, non-condensing), 40 μm filtered

Operation:
Direct acting 2-way and 3-way valves
Normally closed and normally opened

Operating pressure:
0 ... 8 bar (0 ... 116 psi)

Mounting:
Cartridge

Size:
8 mm

Orifice:
0.5 ... 1 mm

Response time:
5 ... 10 ms
Response time measured according to ISO 12238

Life expectancy:
≥100 Mio. cycles

Mounting instruction:
The valve must be assembled in its housing with a lubricant that is compatible with the seals.
Max axial force supported by the valve: 75 (N).

Ambient/media temperature:
-10 ... +50 °C (+14 ... +122°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2 °C (+35°F).

Materials:
Body: PPS
Seat seals: HNBR
Internal parts: stainless steel

Electrical details

Voltage:
24 V d.c.

Rating:
100 % E.D.

Voltage tolerance:
± 10%

Power consumption:
0.5 W

Electrical insulation:
500 V a.c.

Insulation class:
F (155°C)

Following options on request

Voltage (3, 5, 6 or 12 V d.c.)
Degreased for oxygen use

Pulse width modulation (PWM) control

A PWM can be used to control the valve and should be set as follows:

<table>
<thead>
<tr>
<th>Definition</th>
<th>Value to be applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hit voltage</td>
<td>Voltage used for the valve to commute</td>
</tr>
<tr>
<td>Holding voltage</td>
<td>Set duty cycle to guarantee specified holding voltage. 50% of nominal voltage can be used if no value specified.</td>
</tr>
<tr>
<td>Hit time</td>
<td>Maximum time required to ensure full valve commutation</td>
</tr>
<tr>
<td>PWM frequency</td>
<td>25 ms *1)</td>
</tr>
<tr>
<td></td>
<td>20 kHz</td>
</tr>
</tbody>
</table>

*1) Note: There is no temperature restriction in the case of CHIPSOL
Technical data - standard models - 24 V d.c.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Operation</th>
<th>Function</th>
<th>Orifice</th>
<th>kv factor *1)</th>
<th>Operating pressure (bar)</th>
<th>Seal Material</th>
<th>Drawing No.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>NC</td>
<td>2/2</td>
<td>0,5</td>
<td>0,11</td>
<td>0 ... 8</td>
<td>HNBR</td>
<td>1</td>
<td>14-211CA00-HH++AVJ</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>0,8</td>
<td>0,2</td>
<td>0 ... 5</td>
<td>HNBR</td>
<td>1</td>
<td>14-211CA01-HH++AVJ</td>
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<td></td>
<td></td>
<td></td>
<td>1</td>
<td>0,3</td>
<td>0 ... 1,5</td>
<td>HNBR</td>
<td>1</td>
<td>14-211CA01HH++AVJ</td>
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<tr>
<td>12</td>
<td>NO</td>
<td>2/2</td>
<td>0,6</td>
<td>0,11</td>
<td>0 ... 8</td>
<td>HNBR</td>
<td>2</td>
<td>14-221CA060HH++AVJ</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>0,7</td>
<td>0,2</td>
<td>0 ... 5</td>
<td>HNBR</td>
<td>2</td>
<td>14-221CA070HH++AVJ</td>
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<tr>
<td>12</td>
<td>NC</td>
<td>3/2</td>
<td>0,5</td>
<td>0,11</td>
<td>0 ... 8</td>
<td>HNBR</td>
<td>3</td>
<td>14-311CA00-HH++AVJ</td>
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<td>0,8</td>
<td>0,22</td>
<td>0 ... 3</td>
<td>HNBR</td>
<td>3</td>
<td>14-311CA01-HH++AVJ</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>1</td>
<td>0,3</td>
<td>0 ... 0,5</td>
<td>HNBR</td>
<td>3</td>
<td>14-311CA01HH++AVJ</td>
</tr>
<tr>
<td>12</td>
<td>NO</td>
<td>3/2</td>
<td>0,6</td>
<td>0,12</td>
<td>0 ... 4</td>
<td>HNBR</td>
<td>4</td>
<td>14-321CA060HH++AVJ</td>
</tr>
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</tr>
</tbody>
</table>

*1) Cv = 0,07 kv

Accessories

- Test manifold with M3 ports, 1 position
- Test manifold with M3 ports, multiple channels up to 10 positions
- Barbs mounting interface for Ø 2,5 mm ID tubing (up to 1 bar)

Electrical connection

300 mm flying leads mounted with 4 mm (or 2 x 2 mm) pitch SIL socket housing (Harwin M22-3010300)

*1) Two valve mounting screws are in scope of delivery

*S141.0387*1) Available on request

*S140.0226*
FAS 8 mm CHIPSOL
Direct acting solenoid valve

Dimensions

1. CHIPSOL 2/2 NC

2. CHIPSOL 2/2 NO

3. CHIPSOL 3/2 - NC

4. CHIPSOL 3/2 - NO

Dimensions shown in mm
Projection/First angle

 Faces to be aligned by retaining means
 Inlet port
 Outlet port
 Exhaust port
 Do not weld

Dimensions:

- Diameter: ø8,35 mm ± 0,02 mm
- Length: ≤19 mm
- Face: ≤ ø1,1 mm
- Angle: ± 30°
- ±ø8,3 ± 0,02 mm
- ± ø8,1 ± 0,02 mm
- ± R 0,2
- ± ± ø6,5 ± 0,05 mm
- ± ± ø8,5 ± 0,02 mm
- ± ± ± ø8,3 ± 0,02 mm
- ± ± ± ± 0,05 mm
Dimensions

Test manifold, 1 position
(Aluminium)

Barbs mounting interface
(Plastic, maximum operating pressure 1 bar)

Test manifold, up to 10 positions
(Brass)

Warning

These products are intended for use in air, oxygen and neutral gas systems only. Do not use these products where pressures and temperatures can exceed those listed under «Technical features».

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult IMI FAS.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.