Modular relief valves type SHMP, SKM
ISO 4401 sizes 06 and 10

SHMP are direct operated pressure relief valves, size 06.
SKM are double stage pressure relief valves size 10 with balanced poppet.

The pressure adjustment is operated by loosening the locking nut and turning the screw protected by cap.
Optional versions with setting adjustment by handwheel instead of the screw are available on request.
Clockwise rotation increases the pressure.

Valve size and max flow:
- SHMP = size 06, max flow: 35 l/min
- SKM = size 10, max flow: 120 l/min

Mounting surface: ISO 4401 size 06, 10
Max pressure: up to 350 bar

1 MODEL CODE

<table>
<thead>
<tr>
<th>SHMP</th>
<th>-</th>
<th>011</th>
<th>/</th>
<th>210 /</th>
<th>V</th>
<th>**</th>
<th>/</th>
<th>*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modular pressure relief valve size:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHMP = 06</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SKM = 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Configuration, see section 3
- 011 = single on port P, discharge to port T
- 012 = double on ports A and B, discharge to port T
- 013 = single on port A, discharge to port T
- 014 = single on port B, discharge to port T
- 015 = double on ports A and B, with the relieved pressure cross-discharged

Options:
- V = setting adjustment by handwheel instead of a grub screw protected by cap

<table>
<thead>
<tr>
<th>Pressure range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Series number</strong></td>
</tr>
<tr>
<td>SHMP:</td>
</tr>
<tr>
<td>50 = 2÷50 bar</td>
</tr>
<tr>
<td>100 = 3÷100 bar</td>
</tr>
<tr>
<td>210 = 10÷210 bar</td>
</tr>
<tr>
<td>350 = 15÷350 bar</td>
</tr>
</tbody>
</table>

2 HYDRAULIC CHARACTERISTICS

Hydraulic configuration

SHMP-011
SHMP-012
SHMP-013
SHMP-014
SHMP-015

SKM-011
SKM-012
SKM-013
SKM-014
SKM-015

<table>
<thead>
<tr>
<th>Valve model</th>
<th>SHMP</th>
<th>SKM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max flow</td>
<td>35</td>
<td>120</td>
</tr>
<tr>
<td>Pressure range</td>
<td>2÷50; 3÷100; 10÷210; 15÷350</td>
<td>4÷50; 5÷100; 5÷210; 5÷350</td>
</tr>
</tbody>
</table>
### 3 MAIN CHARACTERISTICS, SEALS and HYDRAULIC FLUIDS
- for other fluids not included in below table, consult our technical office

<table>
<thead>
<tr>
<th>Assembly position / location</th>
<th>Any position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subplate surface finishing</td>
<td>Roughness index Ra 0.4 - flatness ratio 0.01/100 (ISO 1101)</td>
</tr>
<tr>
<td>MTTFd values according to EN ISO 13849</td>
<td>150 years, for further details see technical table P007</td>
</tr>
</tbody>
</table>
| Ambient temperature | Standard execution = -30°C ÷ +70°C  
|                     | PE option = -20°C ÷ +70°C  
|                     | BT option = -40°C ÷ +70°C |
| Seals, recommended fluid temperature | NBR seals (standard) = -20°C ÷ +80°C, with HFC hydraulic fluids = -20°C ÷ +50°C  
|                     | FSKM seals (PE option) = -20°C ÷ +80°C  
|                     | HNBR seals (BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C |
| Recommended viscosity | 15–100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s |
| Fluid contamination class | ISO 4406 class 21/19/16 NAS 1638 class 10, achievable with in line filters - 25 μm (β10 > 75 recommended) |

<table>
<thead>
<tr>
<th>Hydraulic fluid</th>
<th>Suitable seals type</th>
<th>Classification</th>
<th>Ref. Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral oils</td>
<td>NBR, FSKM, HNBR</td>
<td></td>
<td>DIN 51524</td>
</tr>
<tr>
<td>Flame resistant without water</td>
<td>FSKM</td>
<td></td>
<td>ISO 12922</td>
</tr>
<tr>
<td>Flame resistant with water</td>
<td>NBR, HNBR</td>
<td>HFC</td>
<td></td>
</tr>
</tbody>
</table>

### 4 REGULATED PRESSURE VERSUS FLOW DIAGRAMS
(Based on mineral oil ISO VG 46 at 50°C)

**SHMP**

**SKM**

### 5 MINIMUM PRESSURE VERSUS FLOW DIAGRAMS
(Based on fluid viscosity of 25 mm²/s at 40°C)

**SHMP**

**SKM**
In the version -014 the regulating element is on side of port B (dotted line) instead of side of port A.

Adjustment device for option /V

ISO 4401: 2005
Mounting surface: 4401-03-02-0-05
Diameter of ports A, B, P, T: Ø = 7.5 mm
Seals: 4 OR 108

Fastening bolts: n° 4 socket head screws M5. The length depends on number and type of modular elements associated.
8 INSTALLATION DIMENSIONS OF SKM VALVES [mm]

SKM-011

Mass: 2.5 Kg

SKM-012

Mass: 2.8 Kg

SKM-013

Mass: 2.5 Kg

SKM-014

Mass: 2.5 Kg

SKM-015

Mass: 2.5 Kg

Adjustment device for option /V

ISO 4401: 2005
Mounting surface: 4401-05-04-0-05
Diameter of ports A, B, P, T: Ø = 11.2 mm
Seals: 5 OR 2050

Fastening bolts: n° 4 socket head screws M6. The length depends on number and type of modular elements associated.