Safety valves for vertical presses and torque bar press brakes with specific spool execution and inductive position switch

Available only on request

Directional safety valves specifically designed for applications in vertical presses and torque bar press brakes, are provided with ON-OFF inductive position switch FV (double contacts NC/NO) indicating the position of the valve's spool. They are mainly used to intercept the hydraulic line to the beam cylinders in emergency conditions, in order to immediately stop their movement, particularly during the pressing phase.

At this subject the spool configuration is specifically designed to fulfill the particular application requirements. By checking the position switch status, the machine controller can perform the safety function. They are available in five different sizes:
- 130105 DHE: size 06, direct max flow 50 l/min
- 130102 DKE: size 10, direct max flow 150 l/min
- 130135 DPHE-1: size 10, direct max flow 160 l/min
- 130133 DPHE-2: size 10, direct max flow 300 l/min
- 130134 DPHE-4: size 10, direct, max flow 700 l/min

Max pressure: 350 bar

See the below section 4 for detailed p/Q performance limits.

### Table TE112-1/E

<table>
<thead>
<tr>
<th>MODEL CODE</th>
<th>2/7</th>
<th>A</th>
<th>FV</th>
<th>X</th>
<th>24DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>130105 DHE-0</td>
<td>2/7</td>
<td>A</td>
<td>FV</td>
<td>X</td>
<td>24DC</td>
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<tr>
<td>130102 DKE-1</td>
<td>2/7</td>
<td>A</td>
<td>FV</td>
<td>X</td>
<td>24DC</td>
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<tr>
<td>140135 DPHE-1</td>
<td>2/7</td>
<td>A</td>
<td>FV</td>
<td>X</td>
<td>24DC</td>
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<tr>
<td>140133 DPHE-2</td>
<td>2/7</td>
<td>A</td>
<td>FV</td>
<td>X</td>
<td>24DC</td>
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<tr>
<td>140134 DPHE-4</td>
<td>2/7</td>
<td>A</td>
<td>FV</td>
<td>X</td>
<td>24DC</td>
</tr>
</tbody>
</table>

**Voltage code**

- 24 = 24 Vdc (other voltages on request)

**Series number**

- NBR
- PE = FKM

**Type of switch:**

- FV = inductive position switch (double contacts)

**Spool type, see section 2**

**Solenoid mounted at side of port B**

**Spool configuration**

- 61 = single solenoid, central plus external, spring centered

**Type of switch:**

- FV = inductive position switch (double contacts)
4 OPERATING LIMITS based on mineral oil ISO VG 46 at 50°C

5.1 Coils characteristics

<table>
<thead>
<tr>
<th>Insulation class</th>
<th>H (180°C)</th>
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</table>
| Due to the occuring surface temperatures of the solenoid coils, the European standards EN ISO 13732-1 and EN ISO 4413 must be taken into account.

| Connector protection degree | IP 65 |
| Relative duty factor | 100% |
| Supply voltage and frequency | See electric feature |
| Supply voltage tolerance | ± 10% |

WARNING: the inobservance of following prescriptions invalidates the certification and may represent a risk for personnel injury.

Safety valves must be installed and commissioned only by qualified personnel.

Safety valves must not be disassembled.

The inductive proximity switch or the position switch can be adjusted only by the manufacturer.

The valves must operate without switching shocks and spool / poppet vibrations.
6 TECHNICAL CHARACTERISTICS OF INDUCTIVE PROXIMITY AND POSITION SWITCHES

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</tr>
</thead>
<tbody>
<tr>
<td>position switch /FV</td>
<td>20÷32</td>
<td>≤ 10</td>
<td>400</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>400</td>
<td>virtually infinite</td>
<td>PNP</td>
</tr>
</tbody>
</table>

7 CONNECTING SCHEMES OF POSITION SWITCHES

CONNECTOR TYPE ZBE-06

1 = supply +24 Vcc
2 = output signal NC
3 = GND
4 = output signal NO

NOTE: the /FV position switch are not provided with a protective earth connection

8 DIMENSIONS [mm]

ISO 4401: 2005
Mounting surface: 4401-03-02-0-05
Fastening bolts: 4 socket head screws M5x50 class 12.9 (DHI, DHU) M5x30 class 12.9 (DHE, DHER) Tightening torque = 8 Nm Seals: 4 OR 108 Ports P,A,B,T: Ø = 7.5 mm (max)

Mass: kg 1,7

ISO 4401: 2005
Mounting surface according to 4401-05-05-0-05 (without X port, Y port optional)
Fastening bolts: 4 socket head screws M6x40 class 12.9 Tightening torque = 15 Nm Seals: 5 OR 2050 and 1 OR 108 Ports P,A,B,T: Ø = 11.5 mm (max) Ports Y: Ø = 5 mm

Mass: kg 4,4
ISO 4401: 2005
Mounting surface: 4401-07-07-0-05
Fastening bolts:
4 socket head screws M10x50 class 12.9
Tightening torque = 70 Nm
Seals: 5 OR 2050 and 1 OR 108
Ports P, A, B, T: Ø = 11.5 mm (max)
Ports Y: Ø = 5 mm

ISO 4401: 2005
Mounting surface according to 4401-05-05-0-05 (without X port)
Fastening bolts:
4 socket head screws M6x40 class 12.9
Tightening torque = 15 Nm
Seals: 4 OR 4112, 2 OR 3056
Ports P, A, B, T: Ø = 11.5 mm (max)
Ports Y: Ø = 5 mm

ISO 4401: 2005
Mounting surface: 4401-08-08-0-05
Fastening bolts:
6 socket head screws M12x60 class 12.9
Tightening torque = 125 Nm
Diameter of ports A, B, P, T: Ø = 20 mm;
Diameter of ports X, Y: Ø = 7 mm;
Seals: 4 OR 4112, 2 OR 3056