Proportional Control Valves with Integrated Electronics

Series D645

Rated flow 1500 (1300) l/min ($\Delta p_{N}=10$ bar)
Operating pressure up to 350 bar

Mounting pattern to DIN 24340
Form A 32 (ISO 4401-AF-10-4-A)

Port size: dia 50
Valve body design: 5 chamber version
Rated flow: at 10 bar valve pressure drop [l/min]
1500P B A T
1300P A B T
1500P B A T T
1300P A B T T

3-stage
3-stage
3-stage
3-stage

Valve version:
Spool configuration:

Pilot valve:
Main spool stroke [mm]: ± 8
Main spool drive area [cm²]: 33.2
Response time for 0 to 100 % stroke [ms]: 35
Threshold [%]: < 0.3
Hysteresis [%]: < 1
Null shift for $\Delta T = 55^\circ$ C [%]: < 2
Null flow max. (axis cut version) [l/min]: 7
Pilot valve oil flow [l/min]: 55
Mass [kg]: 70

*For 140 bar pilot pressure or operating pressure

Typical characteristics
with pilot valve D631
with pilot valve D076
with pilot valve D076 and stub shafts

Flow characteristic at $\Delta p = 5$ bar per metering land

Step response

Frequency Response at 140 bar pilot pressure or operating pressure.
Dimensions

Electrical connector
76197-004
(not included at delivery)

Version with
Series D076
Pilot valve

Series D061
Pilot valve

Electrical null adjustment:
Flow will increase out of
port A, when potentiometer
turned in clockwise
direction (4 turn potentiometer
under screw plug)

6 mounting bolts M20 x 85
DIN 912-10.9
Lightening torque 520 Nm
(not included at delivery)

O-rings included
at delivery
4 x 45122-055
3 x 45122-006

Mounting manifold A25856-001
dimensions to DIN 24340
Form A 32, port NG 40
(up to max. 1400 V/min).
Mounting surface flat within 0.02 mm,
surface finish value Ra better than 1 μm

If pilot ports (X, Y) are not used, they
must be plugged in mounting manifold

Section C-C

Conversion instructions for main stage

The supply and return connections
to the pilot valve may be either internally
or externally connected as follows:

Electrical connection

Valves with voltage command
Standard

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>+15 V</td>
<td>-15 V</td>
<td>0 V</td>
<td>0 V</td>
</tr>
</tbody>
</table>

Command signal
0...10 V

Spool position output

Pilot supply via

<table>
<thead>
<tr>
<th>internal</th>
<th>external X</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>closed</td>
</tr>
<tr>
<td></td>
<td>open</td>
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</tbody>
</table>

Pilot return via

<table>
<thead>
<tr>
<th>internal</th>
<th>external Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>closed</td>
</tr>
<tr>
<td></td>
<td>open</td>
</tr>
</tbody>
</table>

Set screw location

1: closed
2: open
closed
3: open
4: closed

Set screw \( \frac{1}{4} \) NPTF (remove and install
with magnetic hexagon socket wrench)

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