Proportional Pressure-Reducing Valve, Size 16
Series DRPSB-5B ...
<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid temperature range</td>
<td>-25 ... +70 °C</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 ... +50 °C</td>
</tr>
<tr>
<td>Viscosity range</td>
<td>15 ... 380 mm²/s (cSt) recommended 20 ... 130</td>
</tr>
<tr>
<td>Minimum fluid cleanliness level</td>
<td>18/16/13 to ISO 4406: 1999</td>
</tr>
<tr>
<td>Nominal voltages</td>
<td>VDC 12, 24</td>
</tr>
<tr>
<td>Control current</td>
<td>mA 12 VDC = 1400, 24 VDC = 750</td>
</tr>
<tr>
<td>Nominal resistance R20 / R60</td>
<td>Ω 12 VDC = 5.8 / 8.6, 24 VDC = 21 / 32</td>
</tr>
<tr>
<td>Recommended PWM frequency (dither)</td>
<td>Hz 200</td>
</tr>
<tr>
<td>Hysteresis with PWM</td>
<td>% IN 2 ... 4</td>
</tr>
<tr>
<td>Reversal error with PWM</td>
<td>% IN 2 ... 5</td>
</tr>
<tr>
<td>Sensitivity with PWM dither</td>
<td>% IN &lt; 1</td>
</tr>
<tr>
<td>Repeatability with PWM</td>
<td>% pN &lt; 1.5</td>
</tr>
<tr>
<td>Relative duty cycle</td>
<td>% 100</td>
</tr>
<tr>
<td>Protection class to EN 60 529</td>
<td>IP 65 / IP 67, see &quot;Ordering code&quot; (when connector plugs are properly fitted)</td>
</tr>
<tr>
<td>Electrical connection</td>
<td>3-pin square plug to ISO 4400 / DIN 4365 (standard) for other connectors, see &quot;Ordering code&quot;</td>
</tr>
</tbody>
</table>

4. Performance graphs
measured with oil viscosity 33 mm²/s (cSt)

![Drpsb-5B-350-16 p/p characteristic at 24 VDC](image)

![Drpsb-5B-350-16 p/p characteristic at 12 VDC](image)

![Drpsb-5B-250-16 p/p characteristic at 24 VDC](image)

![Drpsb-5B-250-16 p/p characteristic at 12 VDC](image)

Variation in pressure setting
with flow rate from 2 → 1

Variation in pressure setting
with flow rate from 2 → 1
DRPSB-5B-160-16
p/I characteristic at 24 VDC

Variation in pressure setting with flow rate from 2 → 1

DRPSB-5B-160-16
p/I characteristic at 12 VDC

Variation in pressure setting with flow rate from 2 → 1

DRPSB-5B-100-16
p/I characteristic at 24 VDC

Variation in pressure setting with flow rate from 2 → 1

DRPSB-5B-100-16
p/I characteristic at 12 VDC

Variation in pressure setting with flow rate from 2 → 1

DRPSB-5B-040-16
p/I characteristic at 24 VDC

Variation in pressure setting with flow rate from 2 → 1

DRPSB-5B-040-16
p/I characteristic at 12 VDC

Variation in pressure setting with flow rate from 2 → 1

Pilot oil consumption at port 3

DRPSB-5B-...-16 250...550 cm³ / min
5. Dimensions / Schematic section

Attention: to achieve the cartridge’s maximum performance rating, fit the solenoid coil as shown (with the plug pins at the top)

6. Installation and servicing

All work must be carried out with care and by qualified personnel only. When fitting the cartridge, ensure that the seals are oiled or greased and use the specified tightening torque. When changing seals, oil or grease the new seals thoroughly before fitting them. The proportional pressure-relief cartridge is precision-set in the factory. To achieve the cartridge’s maximum performance rating, fit the solenoid coil as shown in “Dimensions”. The 3 port must be piped separately to tank. Take steps to prevent the spring chamber from emptying by either gravity or suction.

Seal kit no. DS-358, (main stage) comprising:

<table>
<thead>
<tr>
<th>It.</th>
<th>Qty</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>O-ring no. 129</td>
<td>Ø 39.34 x 2.62 N90</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>O-ring no. 125</td>
<td>Ø 32.99 x 2.62 N90</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
<td>O-ring no. 124</td>
<td>Ø 31.42 x 2.62 N90</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>Backup ring</td>
<td>Ø 32.0 x 2.0 x 1.4 Fl0751</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
<td>Backup ring</td>
<td>Ø 30.0 x 2.0 x 1.4 Fl0751</td>
</tr>
</tbody>
</table>

Seal kit no. DS-355, (pilot valve) comprising:

<table>
<thead>
<tr>
<th>It.</th>
<th>Qty</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>1</td>
<td>O-ring</td>
<td>Ø 18.00 x 2.00 Viton</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>O-ring</td>
<td>Ø 16.00 x 2.00 Viton</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
<td>O-ring no. 017</td>
<td>Ø 17.17 x 1.78 N90</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>O-ring no. 014</td>
<td>Ø 12.42 x 1.78 N90</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>Backup ring</td>
<td>Ø 10.7 x 1.45 x 1.0 Fl0751</td>
</tr>
</tbody>
</table>
7. Ordering code

DRP = two-stage prop. pressure-reducing cartridge
S = standard proportional solenoid
A ... Q = standard model - see relevant data sheets
Z ... R = special features - please consult BUCHER
5 = pressure function 5 (pr. reducing, external pilot drain to 3)
B = cavity type EB
350 = pressure range ... 350 bar
250 = pressure range ... 250 bar
160 = pressure range ... 160 bar
100 = pressure range ... 100 bar
040 = pressure range ... 40 bar
16 = nominal size 16 mm
(blank) = Nitrile seals (standard)
V = Viton seals
(special seals - consult Bucher)
1 ... 9 = design number (omit when ordering new units)
... = voltage and current plainly specified
(blank) = with mating plug to DIN EN 175301-803 (standard, IP 65)
M100 = without mating DIN EN plug
C = Kostal plug connection (IP 65)
JT = Junior Timer radial plug connection (with quenching diode, IP65)
IT = Junior Timer axial plug connection (with quenching diode, IP65)
D = Deutsch plug connection DT04-2P (IP 67)
DT = Deutsch plug connection DT04-2P (with quenching diode, IP 67)
F = flying leads (500 mm)
Ex. DRP S B - 5 B - 250 - 16 - 1 24 VDC - 

8. Related data sheets

Old no. New no.
i-32 400-P-040011-E The form-tool hire programme
i-55.2 400-P-080111-E Cavity type EB to ISO 7789-42-06-0-07
W-2.141 400-P-120110-E Coils for screw-in cartridge valves
400-P-580101-E Pilot valve DVSA-1L...
P-51.5 400-P-593551-E Sandwich prop. pressure-reducing valve, ISO size 07, type SDRPSA-5...
G-29.22 400-P-750115-E Line-mounting body, type GEBAA (G1“)