MONOBLOCK DIRECTIONAL CONTROL VALVE
SDM140

Simple, compact and heavy duty designed monoblock valves from 1 to 6 sections for open and closed centre hydraulic systems.

- Fitted with a direct or pilot operated main pressure relief valve.
- Each spool has independent load check valve.
- Parallel circuit.
- Optional carry-over port.
- Diameter 18 mm - 0.71 in interchangeable spools.
- A wide variety of service port valves.

DLM140

1 to 6 sections monoblock valves for Load-Sensing variable displacement pump circuit.

- 3 ways 2 positions valve on L.S. line to prevent dropping load during rise action.
- Ports valves and control kits are the same of SDM140 directional valve.

Additional information
This catalogue shows the product in the most standard configurations.
Please contact Sales Dpt. for more detailed information or special request.

WARNING!
All specifications of this catalogue refer to the standard product at this date. Walvoil, oriented to a continuous improvement, reserves the right to discontinue, modify or revise the specifications, without notice.

Walvoil IS NOT RESPONSIBLE FOR ANY DAMAGE CAUSED BY AN INCORRECT USE OF THE PRODUCT.
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SDM140-DLM140

Working condition

This catalogue shows technical specifications and diagrams measured with mineral oil of 46 mm²/s - 46 cSt viscosity at 40°C temperature.

SDM140

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal flow rating</td>
<td>80 l/min</td>
</tr>
<tr>
<td>Operating pressure (maximum)</td>
<td>315 bar</td>
</tr>
<tr>
<td>Max. back pressure on outlet port T</td>
<td>25 bar</td>
</tr>
</tbody>
</table>

DLM140

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal flow rating</td>
<td>110 l/min</td>
</tr>
<tr>
<td>Operating pressure (maximum)</td>
<td>250 bar</td>
</tr>
<tr>
<td>Max. back pressure on outlet port T</td>
<td>25 bar</td>
</tr>
</tbody>
</table>

Internal leakage A(B)→T \( \Delta p = 100 \text{ bar} - 1450 \text{ psi} \), fluid and valve at 40 °C

Fluid temperature

- with NBR seals from -20° to 80°C
- with FPM (VITON) seals from -20° to 100°C

Viscosity

- operating range from 15 to 75 mm²/s from 15 to 75 cSt
- max 400 mm²/s 400 cSt

Max level of contamination -/19/16 - ISO 4406

Ambient temperature

- mechanical, hydraulic, pneumatic controls from -40° to 60°C
- electric controls from -20° to 60°C

NOTE - For different conditions please contact Sales Dept.

Standard threads

<table>
<thead>
<tr>
<th>REFERENCE STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSP</strong></td>
</tr>
<tr>
<td>ISO 228/1</td>
</tr>
<tr>
<td>BS 2779</td>
</tr>
<tr>
<td><strong>UN-UNF</strong></td>
</tr>
<tr>
<td>ISO 263</td>
</tr>
<tr>
<td>ANSI B1.1 unified</td>
</tr>
<tr>
<td><strong>METRICIA</strong></td>
</tr>
<tr>
<td>ISO 262</td>
</tr>
<tr>
<td><strong>NPTF</strong></td>
</tr>
<tr>
<td>ANSI B1.20.3</td>
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<table>
<thead>
<tr>
<th>CAVITY ACCORDING TO</th>
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<tr>
<td><strong>SAE</strong></td>
</tr>
<tr>
<td>1179</td>
</tr>
<tr>
<td>11926</td>
</tr>
<tr>
<td><strong>DIN</strong></td>
</tr>
<tr>
<td>3852-2 shape X o Y</td>
</tr>
<tr>
<td><strong>SAE</strong></td>
</tr>
<tr>
<td>J 1926</td>
</tr>
<tr>
<td>J 2244</td>
</tr>
<tr>
<td><strong>DIN</strong></td>
</tr>
<tr>
<td>3852-2 shape X o Y</td>
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</table>

<table>
<thead>
<tr>
<th>PORTS THREAD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAIN PORTS</strong></td>
</tr>
<tr>
<td>Inlet P and carry-over C</td>
</tr>
<tr>
<td>Ports A and B</td>
</tr>
<tr>
<td>Outlet T</td>
</tr>
<tr>
<td>Load sensing LS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CONTROL PILOT PORTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumatics</td>
</tr>
<tr>
<td>NPTF 1/8-27</td>
</tr>
<tr>
<td>Hydraulics</td>
</tr>
<tr>
<td>G 1/4</td>
</tr>
</tbody>
</table>

walvoil

HYDRAULIC CONTROL SYSTEMS
**Open centre**

From top inlet to top outlet (execution PSA).

**Inlet to work port**

From top inlet to A port (spool in position 1) or B port (spool in position 2).

**Work port to outlet**

From A port (spool in position 2) or B port (spool in position 1) to top outlet.

NOTE - Measured with spool type 1.
**SDM140 directional control valve**

- Dimensional data ........................................... 8
- Hydraulic circuit ........................................... 9
- Ordering codes ............................................... 10
- Inlet relief options ........................................ 12
- Inlet valves options ........................................ 14
- Spool .......................................................... 16
- Spool controls
  - "A" side spool positioners .......................... 21
  - "B" side options ......................................... 33
  - complete controls ....................................... 37
- Ports valves .................................................. 42
- Inlet and outlet ports options ...................... 46
**SDM140**

**Dimensional data**

Production batch:
- P05 = production year (2005)
- 00001 = progressive number

- Carry-over for floating with spool out
- Position 1
- Position 0
- Position 2
- Position 3 for floating with spool in

---

<table>
<thead>
<tr>
<th>TYPE</th>
<th>E</th>
<th>F</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>in</td>
<td>kg</td>
</tr>
<tr>
<td>SDM140/1-P</td>
<td>135</td>
<td>5.32</td>
<td>118</td>
</tr>
<tr>
<td>SDM140/2-P</td>
<td>180</td>
<td>7.09</td>
<td>163</td>
</tr>
<tr>
<td>SDM140/3-P</td>
<td>225</td>
<td>8.86</td>
<td>208</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>TYPE</th>
<th>E</th>
<th>F</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>in</td>
<td>mm</td>
</tr>
<tr>
<td>SDM140/4-P</td>
<td>270</td>
<td>10.63</td>
<td>253</td>
</tr>
<tr>
<td>SDM140/5-P</td>
<td>315</td>
<td>12.40</td>
<td>298</td>
</tr>
<tr>
<td>SDM140/6-P</td>
<td>360</td>
<td>14.17</td>
<td>343</td>
</tr>
</tbody>
</table>
Standard configuration with top inlet and outlet ports (PSA execution).

Right inlet

Symmetrical body allows the reverse assembly of spools and relative kits (execution ED).
1. **Body kit * **

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without service port valves prearrangement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDM140/1-P</td>
<td>5KC1973000</td>
<td>1 section</td>
</tr>
<tr>
<td>SDM140/2-P</td>
<td>5KC1963000</td>
<td>2 sections</td>
</tr>
<tr>
<td>SDM140/3-P</td>
<td>5KC1923008</td>
<td>3 sections</td>
</tr>
<tr>
<td>SDM140/4-P</td>
<td>5KC1933004</td>
<td>4 sections</td>
</tr>
<tr>
<td>SDM140/5-P</td>
<td>5KC1943004</td>
<td>5 sections</td>
</tr>
<tr>
<td>SDM140/6-P</td>
<td>5KC1953000</td>
<td>6 sections</td>
</tr>
</tbody>
</table>

Include body, seals, rings and load check valves.

2. **Inlet relief options**

Standard setting is referred to 10 l/min flow.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV</td>
<td>XTAP530590</td>
<td>Relief valve blanking plug</td>
</tr>
</tbody>
</table>

VMD140/1: direct pressure relief valve type Y (standard)

(YG2-125) X134121125 Range 63 to 125 bar / 900 to 1800 psi

(YG3-175) X134121175 Range 100 to 200 bar / 1450 to 2900 psi

(YG4-250) X134121250 Range 160 to 315 bar / 2300 to 4600 psi

VMP140/1: ad azionamento pilota tipo X

(XG-175) X134211175 Range 25 to 280 bar / 360 to 4050 psi

NOTE (*) - Items are referred to BSP thread.

3. **Inlet valve options**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>X134510000</td>
<td>Hydraulic pilot unloader valve (FC0.75)</td>
</tr>
<tr>
<td>ELN</td>
<td>SCAR408332</td>
<td>12 VDC solenoid pilot unloader valve</td>
</tr>
<tr>
<td>ELT</td>
<td>SCAR408322</td>
<td>As type ELN 12VDC with emergency push-button type &quot;push and twist&quot;</td>
</tr>
<tr>
<td>SCAR408324</td>
<td>As previous: 24VDC</td>
<td></td>
</tr>
</tbody>
</table>

SV XTAP530590 Relief valve blanking plug: in directional valve description “SV” type must be omitted because standard

4. **Spool options**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3CU1310401</td>
<td>Double acting, 3 pos., with A and B closed in neutral position</td>
</tr>
<tr>
<td>2</td>
<td>3CU1325401</td>
<td>Double acting, 3 pos., with A and B open to tank in neutral position</td>
</tr>
<tr>
<td>2H</td>
<td>3CU1325200</td>
<td>Double acting, 3 pos., with A and B partially open to tank</td>
</tr>
<tr>
<td>3</td>
<td>3CU1331130</td>
<td>Single acting on A, 3 pos., B plugged: requires G1/2 plug (see part 1)</td>
</tr>
<tr>
<td>4</td>
<td>3CU1335130</td>
<td>Single acting on B, 3 pos., A plugged: requires G1/2 plug (see part 1)</td>
</tr>
</tbody>
</table>

1. Body kit *
2. Inlet relief options
3. Inlet valve options
4. Spool options

SDM140

Ordering code

Description example:

SDM140/ 2 - P (YG3-175) L / 1 8IM / 1 8 L . P2(G3-100) / AE *
4. Spools  page 16

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>8P</td>
<td>3CU1361400</td>
<td>Double acting, 3 position, with regenerative in position 2</td>
</tr>
<tr>
<td>5</td>
<td>3CU1340420</td>
<td>Double acting, 4 positions, floating circuit in 4th position with spool in</td>
</tr>
<tr>
<td>5BCS</td>
<td>3CU1340440</td>
<td>Double acting, 4 positions, floating circuit in 4th position with spool out</td>
</tr>
</tbody>
</table>

5. “A” side spool positioners  page 21

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>5V08108210</td>
<td>As type 8 and pin with M8 female thread radial hole</td>
</tr>
<tr>
<td>8D</td>
<td>5V09108040</td>
<td>As type 8 and pin with G1/2 port lock device: for spool 5</td>
</tr>
<tr>
<td>8D1</td>
<td>5V09108400</td>
<td>As type 8 and pin with G3/4 port lock device: for spool 5BCS</td>
</tr>
<tr>
<td>9B</td>
<td>5V11108040</td>
<td>With detent in position 1 and spring return in neutral position</td>
</tr>
<tr>
<td>10B</td>
<td>5V10108040</td>
<td>With detent in position 2 and spring return in neutral position</td>
</tr>
<tr>
<td>11B</td>
<td>5V08708112</td>
<td>With spring return in neutral position and 12 VDC spool solenoid lock device</td>
</tr>
<tr>
<td>8K</td>
<td>5V08709124</td>
<td>As previous 24 VDC</td>
</tr>
<tr>
<td>8MG3(NO)</td>
<td>5V08108150</td>
<td>With spring return in neutral position and microswitch in positions 1 and 2</td>
</tr>
<tr>
<td>8ED3</td>
<td>5V08108360</td>
<td>ON/OFF 12 VDC elettro-hydraulic kit</td>
</tr>
<tr>
<td>8PG</td>
<td>5V08108361</td>
<td>ON/OFF 24 VDC elettro-hydraulic kit</td>
</tr>
<tr>
<td>8EPG3</td>
<td>5V08108737</td>
<td>ON/OFF 12 VDC electro-pneumatic kit</td>
</tr>
<tr>
<td>8EPG3</td>
<td>5V08108742</td>
<td>ON/OFF 24 VDC electro-pneumatic kit</td>
</tr>
</tbody>
</table>

6. “B” side options  page 33

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>5LEV108000</td>
<td>Steel lever box</td>
</tr>
<tr>
<td>LB</td>
<td>5LEV308000</td>
<td>Steel lever box</td>
</tr>
<tr>
<td>SLP</td>
<td>5CP108000</td>
<td>W/let lever box, with dust-proof plate</td>
</tr>
<tr>
<td>SLCY</td>
<td>5CP208060</td>
<td>W/let lever box, with endcap</td>
</tr>
<tr>
<td>TQ</td>
<td>5TEL108110</td>
<td>Flexible cable connection</td>
</tr>
<tr>
<td>LCB</td>
<td>5CLO308100</td>
<td>Joystick lever for 2 sections operation</td>
</tr>
</tbody>
</table>

III Restrictor  page 38

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3,6</td>
<td>3SPE217060</td>
<td>Restrictor ø3.6 mm / 0.142 in for G 1/2 port</td>
</tr>
</tbody>
</table>

7. Complete controls *  page 37

<table>
<thead>
<tr>
<th>TIPO CODICE</th>
<th>DESCRIZIONE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8EZ3</td>
<td>Proportional electrohydraulic control: for options and codes see page 40.</td>
</tr>
<tr>
<td>8IM</td>
<td>5IDR208300 Proportional hydraulic control</td>
</tr>
<tr>
<td>13IM</td>
<td>5IDR208214 Proportional hydraulic control: for spool 5</td>
</tr>
</tbody>
</table>

8. Port valves  page 42

Need special body kit
Standard setting is referred to 10 l/min flow.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>3XTAP524290</td>
<td>Valve blanking plug</td>
</tr>
<tr>
<td>DST</td>
<td>3XTAP624180</td>
<td>Valve blanking plug with connection to tank</td>
</tr>
</tbody>
</table>

Anti-shock valve
P(G3-100) 3XCAR208113 From 100 to 250 bar / 1450 to 3600 psi: Standard setting 100 bar / 1450 psi |
P(G4-200) 3XCAR208114 From 200 to 315 bar / 2900 to 4600 psi: Standard setting 200 bar / 2900 psi |

Anti-shock/anti-cavitation valve
U(G2-63) XCAR308112 From 63 to 125 bar / 900 to 1800 psi: Standard setting 63 bar / 900 psi |
U(G3-100) XCAR308115 From 100 to 250 bar / 1450 to 3600 psi: Standard setting 100 bar / 1450 psi |
U(G4-200) XCAR308114 From 200 to 315 bar / 2900 to 4600 psi: Standard setting 200 bar / 2900 psi |

Pilot operated anti-shock/anti-cavitation valve: fixed setting
UX(Z-63) X005410063 Setting 63 bar / 900 psi |
UX(Z-80) X005410080 Setting 80 bar / 1150 psi |
UX(Z-100) X005410100 Setting 100 bar / 1450 psi |
UX(Z-125) X005410125 Setting 125 bar / 1800 psi |
UX(Z-160) X005410160 Setting 160 bar / 2320 psi |
UX(Z-200) X005410200 Setting 200 bar / 2900 psi |
UX(Z-250) X005410250 Setting 250 bar / 3600 psi |
UX(Z-315) X005410315 Setting 315 bar / 4600 psi |

Pilot operated anti-shock/anti-cavitation valve: adjustable setting
UX(G-145) X005411200 From 100 to 280 bar / 1450 to 4050 psi: Standard setting |

Anti-cavitation valve
C XCAR408110 Anti-cavitation valve |

9. Inlet and outlet options*  page 46

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSA</td>
<td>3XTAP732200G3/4</td>
<td>plug: nr.2 for upper inlet and outlet</td>
</tr>
<tr>
<td>PSL</td>
<td>3XTAP732200G3/4</td>
<td>plug: nr.2 for side inlet and outlet</td>
</tr>
<tr>
<td>AE</td>
<td>XG1U536695 G3/4 carry-over sleeve (need nr.1 G3/4 plug)</td>
<td></td>
</tr>
<tr>
<td>AEA</td>
<td>XTAP532465 Plug for closed centre (need nr.1 G3/4 plug)</td>
<td></td>
</tr>
</tbody>
</table>

I Ports plug *

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1/2</td>
<td>3XTAP727180F</td>
<td>or single acting (spools type 3 and 4)</td>
</tr>
</tbody>
</table>

II Optional handlevers

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL01/M10x200</td>
<td>170012020</td>
<td>For L lever box L = 200 mm / 7.87 in</td>
</tr>
<tr>
<td>AL08/M12x200</td>
<td>170013120</td>
<td>For LB lever or LCB joystick L = 200 mm / 7.87 in</td>
</tr>
</tbody>
</table>
**SDM140**

**Inlet relief options**

**Direct pressure relief valve**

VMD140 (Y G 3 - 175)

- Adjustable spring type (2, 3, 4).
- Adjustment type (G, Z).

**Adjustment type**

**G:** with screw

**Z:** with nylon tamper proof cap

**Performance data**

**Spring nr. 2 (green band)**

- Pressure setting in bar (standard 175 / 2540 psi)

**Spring nr. 3 (blue band)**

- Pressure setting in bar (standard 175 / 2540 psi)

**Spring nr. 4 (red band)**

- Pressure setting in bar (standard 175 / 2540 psi)

**Time response**

- Time response 0.18°
- 160 bar
- 2300 psi

---

Adjustment with screw 27 - 42 Nm / 31 lbft

Adjustment with nylon tamper proof cap Cap code: 3COP118200
Pilot operated pressure relief valve

VMP140 (X G - 175)

Adjustment type

- **G**: with screw
- **Z**: with nylon tamper proof cap

Pressure setting in bar (standard 175 / 2540 psi)

Adjustable type (G, Z).

Performance data

<table>
<thead>
<tr>
<th>Range setting</th>
<th>Time response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressure</strong></td>
<td><strong>Time</strong></td>
</tr>
<tr>
<td>0 (bar)</td>
<td>0%</td>
</tr>
<tr>
<td>100</td>
<td>10%</td>
</tr>
<tr>
<td>200</td>
<td>90%</td>
</tr>
<tr>
<td>300</td>
<td>95%</td>
</tr>
<tr>
<td>400</td>
<td>105%</td>
</tr>
</tbody>
</table>

Flow (l/min)

<table>
<thead>
<tr>
<th>Pressure (psi)</th>
<th>Time response</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.35°</td>
</tr>
<tr>
<td>100</td>
<td>160 bar</td>
</tr>
<tr>
<td>200</td>
<td>2320 psi</td>
</tr>
</tbody>
</table>

SV: relief valve blanking plug

<table>
<thead>
<tr>
<th>Flow (l/min)</th>
<th>Pressure (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30</td>
<td>100</td>
</tr>
<tr>
<td>60</td>
<td>200</td>
</tr>
<tr>
<td>90</td>
<td>300</td>
</tr>
</tbody>
</table>

Cap code: 3COP118200

Wrench 13
24 Nm / 17.7 lbft

Allen wrench 6
42 Nm / 31 lbft

Wrench 27 - 42 Nm / 31 lbft
SDM140

Inlet valve options

Hydraulic pilot unloader valve type L

Operating features
Internal leakage . . . . . . . . : 10 cm³/min at 100 bar
0.61 in³/min at 1450 psi

Solenoid pilot unloader valves

Type ELN:

Type ELT: Emergency with push button and spring return; for detent position turn the button after press it.

WARNING: the manual override option is intended for emergency use, not for continuous duty operation.

Operating features
Internal leakage . . . . . . . . . : 20 cm³/min at 100 bar
1.25 in³/min at 1450 psi

Description example:
SDM140/2-P (YG3-175) ELT/.../PSA - 12VDC

Description example:
SDM140/2-P (YG3-175) L/.../PSA

Wrench 27 - 42 Nm / 31 lbft

Wrench 30
42 Nm / 31 lbft

View from connector side

Pressure drop curve T→P

Flow (l/min)

Pressure (bar)

Pressure (psi)

Flow (l/min)

Pressure drop curve T→P

Flow (l/min)

Pressure (bar)

Pressure (psi)
Solenoid pilot unloader valves

COIL CODES

<table>
<thead>
<tr>
<th>Voltage</th>
<th>ISO4400</th>
<th>AMP J PT</th>
<th>Deutsch DT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>without diode</td>
<td>with diode</td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>2X4311012</td>
<td>2X4311015</td>
<td>2X4311212</td>
</tr>
<tr>
<td>24 VDC</td>
<td>2X4311024</td>
<td>2X4311025</td>
<td>2X4311224</td>
</tr>
</tbody>
</table>

Coil with ISO4400 connector

- Nominal voltage tolerance: ±10%
- Power rating: 17 W
- Nominal current: 1.58 A - 12 VDC, 0.81 A - 24 VDC
- Coil insulation: Class F
- Weather protection: IP65
- Duty cycle: 100%

Coil with Deutsch DT connector

- Nominal voltage tolerance: ±10%
- Power rating: 22 W
- Nominal current: 1.76 A - 12 VDC, 0.9 A - 24 VDC
- Coil insulation: Class H
- Weather protection: IP67
- Duty cycle: 100%
- NOTE: circuit with bidirectional diode

Coil with AMP J PT connector

- Nominal voltage tolerance: ±10%
- Power rating: 17 W
- Nominal current: 1.3 A - 12 VDC, 0.74 A - 24 VDC
- Coil insulation: Class F
- Weather protection: IP65
- Duty cycle: 100%
- NOTE: circuit with and without bidirectional diode
**SDM140**

**Spools**

**Type 1**

![Spool diagram](image)

- **P → A, B → T**
  - **Stroke:** +7 mm / 0.28 in

- **P → B, A → T**
  - **Stroke:** -7 mm / 0.28 in

**Performance data**

**Spool metering P→A(B)**

![Graph](image)  
- **Qin = 80 l/min**
- **P (on ports) = 63bar/900psi**
- **P (on ports) = 100bar/1450psi**
- **P (on ports) = 250bar/3600psi**

**Spool metering A(B)→T**

![Graph](image)
**Type 2**

P closed, A-B→T, with flow through line (LC) open

**Type 2H**

P closed, A-B partially to T, with flow through line (LC) open

**Type 3**

Port B plugged
Allen wrench 8 - 24 Nm / 17.7 lbft

P - A - T closed, with flow through line (LC) open

**Type 4**

Port A plugged: allen wrench 8 - 24 Nm / 17.7 lbft

P - B - T chiusi, libera circolazione (LC) aperta
**Spools**

**Type 8P**

This spool needs special body with extra machinering; contact Sales Department.

![Diagram of Type 8P spool metering](image)

---

**Performance data**

**Spool metering P→A**

\[ Q = 80 \text{ l/min} \]

<table>
<thead>
<tr>
<th>Stroke (mm)</th>
<th>Flow (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>0</td>
</tr>
<tr>
<td>0.2</td>
<td>30</td>
</tr>
</tbody>
</table>

---

**Spool pressure drop A→B**

- \[ P_{(on \ ports)} = 63\text{bar}/900\text{psi} \]
- \[ P_{(on \ ports)} = 100\text{bar}/1450\text{psi} \]
- \[ P_{(on \ ports)} = 250\text{bar}/3600\text{psi} \]
Type 5

This spool must be used only with spool positioner type 13, 13MGF(NO), 13K (see page 30) or 13IM control (see page 39).

Performance data

Spool metering

\[ Q_{in} = 80 \text{l/min} / P_{on \text{ ports}} = 100 \text{ bar} / 1450 \text{ psi} \]

Pressure drop in position 3

(in last section)
Spools

Type 5BCS

This spool must be used only with spool positioner type 13C and 13CMGF (see page 30).

Performance data

Spool metering

\[ Q_{in} = 80 \text{ l/min} / P_{on \text{ ports}} = 100 \text{ bar} / 1450 \text{ psi} \]

Pressure drop in position 3

(in last section)
With spring return in neutral position

8 kit

Supplied with standard spring type B (see force-stroke diagram).
Available with lighter spring type A (8MA code: 5V08108240) or heavier type C (8MC code: 5V08208000).

8D kit

8D1 kit
"A" side spool positioners

With detent and spring return to neutral position from either directions

**9B kit**

```
Force-stroke diagram

Port B
Port A

-0.2  -0.1  0  0.1  0.2 (in)

(N)

Locking force: 130 N / 29.2 lbf ±10% - Release force: 215 N / 48.3 lbf ±10%
```

**10B kit**

```
Force-stroke diagram

Port B
Port A

-0.2  -0.1  0  0.1  0.2 (in)

(N)

Locking force: 145 N / 32.6 lbf ±10% - Release force: 300 N / 67.4 lbf ±10%
```

**11B kit**

```
Force-stroke diagram

Port B
Port A

-0.2  -0.1  0  0.1  0.2 (in)

(N)

Position 1: Locking force: 130 N / 29.2 lbf ±10% - Release force: 215 N / 48.3 lbf ±10%
Position 2: Locking force: 145 N / 32.6 lbf ±10% - Release force: 300 N / 67.4 lbf ±10%
```
**“A” side spool positioners**

**Solenoid lock device type 8K**

With spring return and spool electromechanical lock in neutral position; when coil is feeded the spool can be moved.

It’s possible to obtain further control configurations, using positioners with detent type 9B, 10B, 11B: for information contact Sales Department.

**Operating features**

**ACTUATOR**

Lock stroke .................: 3.5 mm / 0.14 in

**COIL**

Depending on model: see following features

Coil with ISO4400 connector

- Nom. voltage tolerance ..........: ±10%
- Power rating ...................: 18 W
- Nominal current ................: 1.58 A - 12 VDC
  - 0.81 A - 24VDC
- Coil insulation .................: Class H
- Weather protection .............: IP65
- Duty cycle .....................: 100%

Coil with Deutsch DT connector

- Nom. voltage tolerance ..........: ±10%
- Power rating ...................: 22 W
- Nominal current ................: 1.9 A - 12 VDC
  - 0.95 A - 24VDC
- Coil insulation .................: Class H
- Weather protection .............: IP65
- Duty cycle .....................: 100%

Coil with Packard M-Pack connector

- Nom. voltage tolerance ..........: ±10%
- Power rating ...................: 18 W
- Nominal current ................: 1.58 A - 12 VDC
  - 0.81 A - 24VDC
- Coil insulation .................: Class H
- Weather protection .............: IP65
- Duty cycle .....................: 100%

**Complete controls codes**

<table>
<thead>
<tr>
<th>CONNECTOR TYPE</th>
<th>ISO4400</th>
<th>Deutsch DT</th>
<th>Packard M-Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONTROL TYPE</strong></td>
<td>8K</td>
<td>8K4</td>
<td>8K6</td>
</tr>
<tr>
<td>Voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>5V08708112</td>
<td>5V08708413</td>
<td>5V08708612</td>
</tr>
<tr>
<td>24 VDC</td>
<td>5V08708124</td>
<td>5V08708424</td>
<td>5V08708624</td>
</tr>
<tr>
<td>Need connector (page 58)</td>
<td>C02</td>
<td>C19</td>
<td>C20</td>
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</table>

**Coil codes**

<table>
<thead>
<tr>
<th>CONNECTOR TYPE</th>
<th>ISO4400</th>
<th>Deutsch DT</th>
<th>Packard M-Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>2X4300012</td>
<td>2X4300014</td>
<td>YSOIL300014</td>
</tr>
<tr>
<td>24 VDC</td>
<td>2X4300024</td>
<td>2X4300026</td>
<td>YSOIL300024</td>
</tr>
</tbody>
</table>

NOTE - kit assembling has to be confirmed/verified when port relief valves are used: contact Sales Department.
**SDM140**

**“A” side spool positioners**

**With microswitch type 8MG3(NO)**

With spring return in neutral position and microswitch operated in both directions. Also available **8MG1(NO)** configuration (microswitch operated in position 1) and **8MG2(NO)** configuration (microswitch operated in position 2); dimensions are the same of 8MG3 configuration.

Same configurations are available with normally closed (NC) contact. It’s possible to obtain further control configurations, using positioners with detent type 9B, 10B, 11B: for information contact Sales Department.

---

**Operating features**

**MICROSWITCH**

Mechanical life ...............: $5 \times 10^5$ operations

Electrical life (resistive load): $10^5$ operations - 7A / 13.5VDC

$5 \times 10^4$ operations - 10A / 12VDC

$5 \times 10^4$ operations - 3A / 28VDC

---

**COMPLETE CONTROLS CODES**

<table>
<thead>
<tr>
<th>Contact</th>
<th>CONTROL TYPE</th>
<th>Need connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>8MG3 5V08108150</td>
<td>C07 see page 58</td>
</tr>
<tr>
<td></td>
<td>8MG2 5V08108170</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8MG1 5V08108160</td>
<td></td>
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<tr>
<td>NC</td>
<td>8MG3 5V08108152</td>
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<td></td>
<td>8MG2 5V08108172</td>
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</tr>
<tr>
<td></td>
<td>8MG1 5V08108162</td>
<td></td>
</tr>
</tbody>
</table>

**SPARE MICROSWITCHES**

- Microswitch kit with NO contact code: 4MIC730
  - PACKARD W-PACK female connector with male end
  - PACKARD W-PACK male connector with female end

- Microswitch kit with NO contact code: 4MIC740
  - PACKARD W-PACK male connector with female end
  - PACKARD W-PACK female connector with male end
ON/OFF electrohydraulic kit type 8ED3

With external pilot and drain.

Operating features

**CONTROL**
- Pilot pressure: min. 10 bar / 145 psi
- Max backpressure on drain L: 25 bar / 360 psi
- Nominal voltage tolerance: ±10%
- Power rating: 21 W
- Nominal current: 1.75 A - 12 VDC / 0.87 A - 24 VDC
- Coil insulation: Class F
- Weather protection: depending on coil model; see next page
- Duty cycle: 100%

**COMPLETE CONTROLS CODES**

<table>
<thead>
<tr>
<th>ISO400</th>
<th>AMP J PT</th>
<th>Deutsch DT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>without diode</td>
<td>with diode</td>
</tr>
<tr>
<td><strong>CONTROL TYPE</strong></td>
<td>8ED3</td>
<td>8ED32</td>
</tr>
<tr>
<td>Voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>5V08108360</td>
<td>5V08108358</td>
</tr>
<tr>
<td>24 VDC</td>
<td>5V08108361</td>
<td>5V08108359</td>
</tr>
</tbody>
</table>

**Need connector type**
- (page 58) C02 C08 C08 C19
**SDM140**

**“A” side spool positioners**

**ON/OFF electrohydraulic kit type 8ED3**

---

**COIL CODES**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>ISO4400</th>
<th>AMP J PT without diode</th>
<th>Deutsch DT</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>2XB1400121100</td>
<td>2XB1400121200</td>
<td>2XB1400121210</td>
</tr>
<tr>
<td>24 VDC</td>
<td>2XB1400241100</td>
<td>2XB1400241200</td>
<td>2XB1400241210</td>
</tr>
</tbody>
</table>

Coil with ISO4400 connection (weather protection IP65)

Coil with AMP J PT connection (weather protection IP65)

Coil with Deutsch DT connection (weather protection IP67)

---

**Collector kit for external pilot and drain**

- Collector
- 20 bar 290 psi
- Allen wrench 6
- 24 Nm / 17.7 lbft

**COLLECTOR KIT CODES**

<table>
<thead>
<tr>
<th>Type</th>
<th>Code *</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>KE1S0</td>
<td>5KE1S00030</td>
<td>Kit per una sezione</td>
</tr>
<tr>
<td>KE2S0</td>
<td>5KE2S00430</td>
<td>Kit per 2 sezioni</td>
</tr>
<tr>
<td>KE3S0</td>
<td>5KE3S00430</td>
<td>Kit per 3 sezioni</td>
</tr>
<tr>
<td>KE4S0</td>
<td>5KE4S00430</td>
<td>Kit per 4 sezioni</td>
</tr>
<tr>
<td>KE5S0</td>
<td>5KE5S00430</td>
<td>Kit per 5 sezioni</td>
</tr>
<tr>
<td>KE6S0</td>
<td>5KE6S00430</td>
<td>Kit per 6 sezioni</td>
</tr>
</tbody>
</table>

(* codes are referred to BSP thread)

Description example:

SDM140/2-P(YG3-175)/18ED3L/18ED3L/PSA-KE2S0-24VDC
ON/OFF electrohydraulic kit type 8ED3

Collector with pilot and drain

The kit consists of a collector with VRP pressure reducing valve and relative pipes; this kit can be used only with SDM140 directional valve.

Operating features

VRP VALVE
Output pressure 20 bar / 290 psi
Max flow 8 l/min
Filtering 80 µ

VRC backpressure valve: code X14760007

Valve assembled on flow through passage provides pilot pressure to the actuator and can be used only with SDM140 directional valve. Also available VRC(10) configuration: code X147600010 (see diagram).

Pressure drop $P \rightarrow T$
ON/OFF pneumatic kit type 8EPG3

**Operating features**

**CONTROL**
- Pilot pressure: 6 bar / 87 psi
- (max. 12 bar / 174 psi)

**COIL**
- Nominal voltage tolerance: ±10%
- Power rating: 8 W
- Nominal current: 0.67 A – 12 VDC
- 0.33 A – 24VDC
- Coil insulation: Class H
- Weather protection: IP65
- Duty cycle: 100%

**Coil with ISO6952 connector**

**Coil with flying leads**

*Several type of connectors can be wired on request.*

---

**COMPLETE CONTROL CODES**

<table>
<thead>
<tr>
<th>CONNECTION TYPE</th>
<th>ISO6952</th>
<th>Fill uscenti</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voltage</strong></td>
<td><strong>CONTROL TYPE</strong></td>
<td>8EP3</td>
</tr>
<tr>
<td>12 VDC</td>
<td>5V08108737</td>
<td>5V08108739</td>
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<tr>
<td>24 VDC</td>
<td>5V08108742</td>
<td>5V08108744</td>
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</table>

**Need connector type (page 58)**
- C01 (compreso)
- /

---

**COILS CODES**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>CONTROL TYPE</th>
<th>Flying leads*</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>2XB1010121100</td>
<td>2XB1010120000</td>
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<tr>
<td>24 VDC</td>
<td>2XB1010241100</td>
<td>2XB1010240000</td>
</tr>
</tbody>
</table>

*Several type of connectors can be wired on request.*
Proportional pneumatic kit type 8PG

It can be used with standard spools and body; body kit without spool seals on side “A” (O-ring seal on spool in the drawing is part of positioner).

Operating features
Pilot pressure: min. 6 bar / 87 psi
max. 12 bar / 174 psi

Pilot pressure - stroke diagram

<table>
<thead>
<tr>
<th>Pilot pressure (psi)</th>
<th>Stroke (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>-0.2</td>
</tr>
<tr>
<td>50</td>
<td>-0.1</td>
</tr>
<tr>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
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<td>75</td>
<td>0.2</td>
</tr>
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</tr>
<tr>
<td>-75</td>
<td>0.8</td>
</tr>
<tr>
<td>-100</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Spool overlap area
Metering area

Allen wrench 4
9.8 Nm - 7.2 lbft

NPT 1/8-27 n.2 ports

Wrench 10
24 Nm / 17.7 lbft

Wrench 15 - 24 Nm / 17.7 lbft

Allen wrench 4 - 9.8 Nm / 7.2 lbft

Wrench 5

VA VB

Pilot pressure: min. 6 bar / 87 psi
max. 12 bar / 174 psi

Wrench 15 - 24 Nm / 17.7 lbft

Allen wrench 4 - 9.8 Nm / 7.2 lbft

VA VB

Wrench 10
24 Nm / 17.7 lbft

Port B Port A

0.1 0.2 (in)
**SDM140**

### “A” side spool positioners

#### Particular positioner kits for special spools

**13 kit**

Detent in 4th position with spool in: available only for spool type 5.

![Force-stroke diagram](image)

**Detent area**

- Locking force: 310 N / 70 lbf ±10%
- Release force: 170 N / 38.2 lbf ±10%

**13C kit**

Detent in 4th position with spool out: available only for spool type 5BCS.

![Force-stroke diagram](image)

**Detent area**

- Locking force: 310 N / 70 lbf ±10%
- Release force: 170 N / 38.2 lbf ±10%
Particular positioner kits for special spools

13K kit

Same characteristics of kit type 13, with spool electromechanical lock in neutral position; if coil is excited the spool can be operated.

Available only for spool type 5.

NOTE - kit assembling has to be confirmed/verified when port relief valves are used: contact Sales Department.

Operating features

POSITIONER
Locking force ................. : 300 N / 67.4 lbf ±10%
Release force ............... : 270 N / 60.7 lbf ±10%

ACTUATOR
Lock stroke ................. : 3.5 mm / 0.14 in

COIL
Duty cycle ................. : 100%

Depending on model: see following features

COILS CODES

<table>
<thead>
<tr>
<th>Voltage</th>
<th>CONNECTION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ISO4400 Deutsch DT Packard M-Pack</td>
</tr>
<tr>
<td>12 VDC</td>
<td>13K 13K4 13K6</td>
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<td>24 VDC</td>
<td>5V13708113 5V13708413 5V13708612</td>
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<td></td>
<td>5V13708124 5V13708424 5V13708624</td>
</tr>
</tbody>
</table>

COMPLETE CONTROLS CODES

<table>
<thead>
<tr>
<th>CONNECTION TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO4400 Deutsch DT Packard M-Pack</td>
</tr>
<tr>
<td>Voltage</td>
</tr>
<tr>
<td>12 VDC</td>
</tr>
<tr>
<td>24 VDC</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Coil with ISO4400 connector

Nom. voltage tolerance ................. : ±10%
Power rating ................. : 18 W
Nominal current .......... : 1.5 A - 12 VDC
                           : 0.81 A - 24 VDC
Coil insulation ............... : Class H
Weather protection ............ : IP65
Duty cycle ................... : 100%

Coil with Deutsch DT connector

Nom. voltage tolerance ................. : ±10%
Power rating ................. : 22 W
Nominal current .......... : 1.9 A - 12 VDC
                           : 0.95 A - 24 VDC
Coil insulation ............... : Class H
Weather protection ............ : IP65
Duty cycle ................... : 100%

Coil with Packard M-Pack connector

Nom. voltage tolerance ................. : ±10%
Power rating ................. : 18 W
Nominal current .......... : 1.58 A - 12 VDC
                           : 0.81 A - 24 VDC
Coil insulation ............... : Class F
Weather protection ............ : IP65
Duty cycle ................... : 100%
**SDM140**

### “A” side spool positioners

**Particular positioner kits for special spools**

**Kit 13MG3F(NO)**

Detent in 4th position with spool in, spring return in neutral position and microswitch operated in both directions.

Also available **13MG1F(NO)** configuration (microswitch operated in position 1) and **13MG2F(NO)** configuration (microswitch operated in position 2); contact Sales Department.

Same configurations are available with normally closed (NC) contact.

Available only for spool type 5 (see page 19).

![Diagram of 13MG3F(NO) kit](image)

**COMPLETE CONTROLS CODES**

<table>
<thead>
<tr>
<th>Contact</th>
<th>CONTROL TYPE</th>
<th>Need connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>5V13108051</td>
<td>C07</td>
</tr>
<tr>
<td>NC</td>
<td>5V13108052</td>
<td>C17</td>
</tr>
</tbody>
</table>

NOTE - for microswitches dimensions, features and characteristics, see page 24.

---

**13CMG3F(NO) kit**

Detent in 4th position with spool out, spring return in neutral position and microswitch operated in both directions.

Also available **13CMG1F(NO)** configuration (microswitch operated in position 1) and **13CMG2F(NO)** configuration (microswitch operated in position 2); contact Sales Department.

Same configurations are available with normally closed (NC) contact.

Available only for spool type 5BCS (see page 20).

![Diagram of 13CMG3F(NO) kit](image)

**COMPLETE CONTROLS CODES**

<table>
<thead>
<tr>
<th>Contact</th>
<th>CONTROL TYPE</th>
<th>Need connector type</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO</td>
<td>5V13208050</td>
<td>C07</td>
</tr>
<tr>
<td>NC</td>
<td>5V13208052</td>
<td>C17</td>
</tr>
</tbody>
</table>

NOTE - for microswitches dimensions, features and characteristics, see page 24.
**Lever control**

**Type L**

Alluminium with protection boot lever pivot box; it can be rotated 180° (execution L180).

**Type LF3**

Zama (zinc alloy) lever pivot box with protective rubber bellow; it's complete of two screws for spool stroke adjusting. It can be rotated 180° (configuration LF3180).
SDM140

“B” side options

**Lever control**

**Type LB**

Steel and cast iron manufacture.

**LB4 configuration**: pivot placed above on the right.

**LB1 configuration**: pivot placed down on the left.

NOTE – The pivot can be assembled rotated 90° in either directions; in this case the interference with other lever controls must be checked. For further information please contact Sales Department.

**Controls prearrangement**

**Type SLP**

Mechanical control with dust-proof plate kit.

**Type SLCY**

Protection cap usable with pneumatic 8P F, electro-pneumatic 8EP 3, and electro-hydraulic 8ED3 spool positioners.
**TQ cable remote control kit**

Waterproof cap prearranged for remote control with flexible cable.

**NOTE** - For further information about remote cable control, require related documentation.

**Example of cable control**
LCB joystick

Dimensions and movement scheme

Configuration LCB1
pivot placed down on the left

Configuration LCB2
pivot placed down on the right

Configuration LCB3
pivot placed above on the left

Configuration LCB4
pivot placed above on the right

NOTE - Due to limited space in case of LCB3 or LCB4 configuration the assembly of ports service relief valves is not possible.
Proportional hydraulic control type 8IM

It can be used on SDM140 valve with standard spools and body (body kit without rings and seals on spool).

Operating features
Max. pilot pressure : 50 bar / 730 psi

Connection example

Hydraulic pilot control valve series SVM400

Spool control curve
- type 075 with step
- type 167 without step
**SDM140**

**Complete controls**

**Proportional hydraulic control type 8IMF3**

Configuration with spool stroke adjustment; it can be used on DLM140 valve with standard spools and body (body kit without rings and seals on spool).

Allen wrench 4 - 6.6 Nm / 4.9 lbft
Allen wrench 5 - 9.8 Nm / 7.2 lbft
Wrench 4 - 13 - 24 Nm / 17.7 lbft

**Operating features**

Max. pilot pressure : 50 bar / 730 psi

**Connection example**

Hydraulic pilot control valve series SVM400

**Spool control curve**

- **Type 001 with step**
- **Type 135 without step**
Proportional hydraulic control type 13IM

It needs special body with extra machining, without rings and seals on spool: available only for spool type 5.

Operating features
Max. pilot pressure : 50 bar / 730 psi

Complete controls

Pilot pressure - stroke diagram

Connection example
**SDM140**

**Complete controls**

**Proportional electrohydraulic control type 8EZ3**

With internal or external pilot, it needs of dedicated spool and special body with extra machining: for information contact Sales Department.

Description example:

**SDM140/1-P (YG3-175) L / 1 8EZ35 . P2(G3-100) / PSL - 12VDC**

1. Body kit
   WARNING bodies need to be pre-arranged and are dedicated exclusively to a specific type of electro-hydraulic control: please contact the Sales Department.

2. Inlet relief options
   Direct and pilot pressure relief valve, for types and codes see page 11.

3. Inlet valve options
   Unloader valves and blanking plug, for types and codes see page 11.

4. Spool
   TYPE 1(EZ3) 3CU1310440 DESCRIPTION Double acting, 3 positions, with A and B closed in neutral position

5. Control kit *
   TYPE 8EZ34 CODE 5V08108330 DESCRIPTION Internal pilot and drain with accumulator prearrangement, 12VDC supply voltage As previous, 24VDC supply voltage
   TYPE 8EZ35 5V08108334 External pilot and internal drain, 12VDC supply voltage As previous, 24VDC supply voltage

6. Valvole sugli utilizzi
   Anti-shock and anti-cavitation valves, for types and codes see page 11.

7. Inlet and outlet options *
   Upper or side inlet and outlet, carry-over, closed centre (see page 11) and backpressure valve (see page 27).

NOTE (*) - Items are referred to BSP thread.
Proportional electrohydraulic control type 8EZ3

**Operating features**

**SOLENOID VALVES**

- Flow: min. 6 l/min
- Pressure: min. 25 bar - 360 psi / max. 315 bar - 4600 psi
- Max. backpressure on T: 20 bar - 290 psi
- Max. internal leakage: 3 cm³/min - 0.18 in³/min
- Max. hysteresis: 0.5 bar - 7.3 psi
- Nominal voltage tolerance: ± 10%
- Coil resistance (20 °C): 5.3 Ω (12VDC) / 24 Ω (24VDC)
- Max. current: 1.5 A (12VDC) / 0.63 A (24VDC)
- Duty cycle: 100%
- Operating frequency: 125 Hz
- Weather protection: IP67

**Joint with G1/4 plugged pressure gauge port for internal pilot, code: XGIU619501 (plug code 3XTAP71950), Wrench 19 - 24 Nm / 17.7 lbft (plug allen wrench 6 - 24 Nm / 17.7 lbft)**

**For hydraulic circuit type 8EZ34**

**G1/4 joint for external pilot, code: XGIU619540. Chiave 19 - 24 nm. For hydraulic circuit type 8EZ35**

**Current - port flow diagram**

\[ P = 150 \text{ bar} - 2170 \text{ psi} \ (P \rightarrow A \rightarrow B \rightarrow T) \]

\[
\begin{align*}
\text{Flow} & \quad \text{(l/min)} \\
\text{Current} & \quad \text{(A)} \\
0 & \quad 0 \quad 0.5 \quad 0.6 \quad 0.7 \quad 0.8 \quad 0.9 \quad 1.0 \\
0 & \quad 20 \quad 60 \quad 90
\end{align*}
\]

**Allen wrench 3: 6.6 Nm / 4.9 lbft**

**Allen wrench 6: 24 Nm / 17.7 lbft**

**Allen wrench 4: 6.6 Nm / 4.9 lbft**

**Allen wrench 6: 24 Nm / 17.7 lbft**

**Proportional solenoid valve with "J PT" AMP connection (needs C08 connector, see page 58). Codes:**

- 4SOL66X012 (12VDC)
- 4SOL66X024 (24VDC)
Adjustment type

**G:** with screw
- Wrench 22
  - 24 Nm / 17.7 lbft
- Notch
  - 1.5 mm / 0.06 in
- Body with port valves arrangement

**H:** valve set and locked

### Performance data

#### Spring nr. 3 (blue band)

<table>
<thead>
<tr>
<th>Pressure (psi)</th>
<th>Flow (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>200</td>
<td>60</td>
</tr>
<tr>
<td>300</td>
<td>90</td>
</tr>
<tr>
<td>400</td>
<td>90</td>
</tr>
<tr>
<td>4500</td>
<td>90</td>
</tr>
</tbody>
</table>

#### Spring nr.4 (red band)

<table>
<thead>
<tr>
<th>Pressure (psi)</th>
<th>Flow (l/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>200</td>
<td>60</td>
</tr>
<tr>
<td>300</td>
<td>90</td>
</tr>
<tr>
<td>400</td>
<td>90</td>
</tr>
<tr>
<td>4500</td>
<td>90</td>
</tr>
</tbody>
</table>

### Time response

- Pressure (% \(\Delta P\))
  - 105%
  - 105%
  - 105%
  - 105%
  - 105%
- Time (°)
  - 0.02°
  - 0.02°
  - 0.02°
  - 0.02°
  - 0.02°
Anti-shock / anti-cavitation valves

Adjustment type

**U1** (G 3 - 100)
- **Standard setting in bar** (for value see page 11)
- **Spring type** (2, 3, 4).
- **Adjustment type** (G, H).
  - 1 mounted on port A.
  - 2 mounted on port B.
  - 3 mounted on ports A and B.

**U2**

**U3**

Performance data

**Spring nr. 2** (green band)

**Spring nr. 3** (blue band)

**Spring nr. 4** (red band)

**Time response**

**Pressure drop**
SDM140

Port valves

Pilot operated anti-shock/anti-cavitation valves: fixed and adjustable setting

UX 1 (Z - 100)

Fixed setting:
- Standard setting in bar (for value see page 11)
- Fixed setting (Z)
- Adjustable setting (G, H)

1 mounted on port A.
2 mounted on port B.
3 mounted on ports A and B.

Adjustable setting:

G: with screw
- max 115
- max 4.53
- Allen wrench 5
- Wrench 17 - 24 Nm / 17.7 lbft
- Wrench 24 - 42 Nm / 31 lbft

H: valve set and locked
- Body with port valves arrangement
- max 98
- max 3.86
- Wrench 22 - 42 Nm / 31 lbft

Performance data

Range setting

Pressure drop

Time response

Flow (l/min)

Pressure (bar)

Pressure (psi)

Flow (l/min)

Pressure drop (% ΔP)

Time (°)

0,2°

TIME RESPONSE
Anti-cavitation valves

C1

1 mounted on port A.
2 mounted on port B.
3 mounted on ports A and B.

C2

C3

Pressure drop

Flow (l/min)

0 3 6 9 0

0 30 60 90

0 5 10 15 20

DST2

Valve blanking plug with connection to tank

DST1

1 mounted on port A.
2 mounted on port B.

DST2

Valve blanking plug

P1T

1 mounted on port A.
2 mounted on port B.
3 mounted on ports A and B.

P2T

P3T

Body with port valves arrangement

Wrench 24
42 Nm / 31 lbft

Allen wrench 10
42 Nm / 31 lbft

Body with port valves arrangement

SDM140

Port valves

DAU007E

45
**SDM140**

**Inlet and outlet options**

**PSA: upper ports (standard)**

See page 9.

**PSL: side ports**

Description example:

SDM140/2-P (YG 3 - 175)/18L/18L/PSL

**AE: with carry-over**

Description example:

SDM140/2-P (YG 3 - 175)/18L/18L/AE

**AEK: closed centre**

Description example:

SDM140/2-P (YG 3 - 175)/18L/18L/AEK
DLM140 directional control valve

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- Ordering codes ............................................ 50
- Spool ..................................................... 52

Spool controls
- "A" side spool positioners ............................... 21
- "B" side options .......................................... 33
- complete controls ....................................... 37
- Ports valves ................................................. 42
- Inlet and outlet ports options ......................... 46
# DLM140

## Dimensional data

![Diagram of DLM140 hydraulic control system]

### Code
- **Production batch:**
  - P05 = production year (2005)
  - 00001 = progressive number

### WALVOIL
- **P0200001**
- **103020006**
- **MADE IN ITALY**

### Table: Dimensional data

<table>
<thead>
<tr>
<th>TYPE</th>
<th>E (mm)</th>
<th>E (in)</th>
<th>F (mm)</th>
<th>F (in)</th>
<th>Weight (kg)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DLM140/1-P</td>
<td>118</td>
<td>4.65</td>
<td>157</td>
<td>6.18</td>
<td>9.8</td>
<td>21.6</td>
</tr>
<tr>
<td>DLM140/2-P</td>
<td>163</td>
<td>6.42</td>
<td>202</td>
<td>7.95</td>
<td>13.7</td>
<td>30.2</td>
</tr>
<tr>
<td>DLM140/3-P</td>
<td>208</td>
<td>8.19</td>
<td>247</td>
<td>9.72</td>
<td>17.6</td>
<td>38.8</td>
</tr>
<tr>
<td>DLM140/4-P</td>
<td>253</td>
<td>9.96</td>
<td>292</td>
<td>11.50</td>
<td>21.5</td>
<td>47.4</td>
</tr>
<tr>
<td>DLM140/5-P</td>
<td>298</td>
<td>11.73</td>
<td>337</td>
<td>13.27</td>
<td>25.4</td>
<td>56.0</td>
</tr>
<tr>
<td>DLM140/6-P</td>
<td>343</td>
<td>13.50</td>
<td>382</td>
<td>15.04</td>
<td>29.3</td>
<td>64.6</td>
</tr>
</tbody>
</table>

### Production details:
- **Position 1** - 17°
- **Position 0** - 17°
- **Position 2** - 11°
- **Position 3** - for floating spool in LS A1 A2 B1 B2

---

![Code and production batch]

### Code
- Production batch:
  - P05 = production year (2005)
  - 00001 = progressive number

---

**Note:**
- Dimensions are in millimeters (mm) and inches (in).
- Weight is in kilograms (kg) and pounds (lb).
Standard configuration with top inlet and outlet ports (PSA execution).

Description example:
DLM140/2-AP/1N8LF3/1N8LF3/PSA

Load check valve
Valve on Load Sensing signal
Lever pivot box

Right inlet
Simmetrical body allows the reverse assembly of spools and relative kits (execution ED).

Description example:
DLM140/2-AP/ED-1N8LF3/ED-1N8LF3/PSA
Ordering codes

Description example:

DLM140 / 2 - AP / 1N 8 LF3 / 1N 8IMF3 . P2(G3 - 100) / PSA *

1st section  
following section

Port valves setting (bar)

1. Body kit *

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Without service port valves prearrangement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DLM140/1</td>
<td>SKC1973002</td>
<td>1 section</td>
</tr>
<tr>
<td>DLM140/2</td>
<td>SKC1963005</td>
<td>2 sections</td>
</tr>
<tr>
<td>DLM140/3</td>
<td>SKC1923019</td>
<td>3 sections</td>
</tr>
<tr>
<td>DLM140/4</td>
<td>SKC1933017</td>
<td>4 sections</td>
</tr>
<tr>
<td>DLM140/5</td>
<td>SKC1943012</td>
<td>5 sections</td>
</tr>
<tr>
<td>DLM140/6</td>
<td>SKC1953007</td>
<td>6 sections</td>
</tr>
</tbody>
</table>

Include body, seals, rings and load check valves.

2. Valve on LS signal *

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP</td>
<td>XCOR236671</td>
<td>With G1/4 port</td>
</tr>
</tbody>
</table>

NOTE (*) - Items are referred to BSP thread.
### 3. Spool

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>V</td>
<td></td>
<td>Nominal flow with pump stand-by = 20 bar / 290 psi</td>
</tr>
<tr>
<td></td>
<td>20 l/min</td>
<td>40 l/min</td>
</tr>
<tr>
<td>V</td>
<td>3CU1311020</td>
<td>3CU1311040</td>
</tr>
<tr>
<td>V</td>
<td>3CU1314010</td>
<td>3CU1314060</td>
</tr>
</tbody>
</table>

### 4. “A” side spool positioners

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>SVE108010</td>
<td>With spring return in neutral position</td>
</tr>
<tr>
<td>8D</td>
<td>SVE108020</td>
<td>As type 8 and pin with MB female thread</td>
</tr>
<tr>
<td>8D1</td>
<td>SVE108010</td>
<td>As type 8 and pin with 8mm (0.32 in) radial hole</td>
</tr>
<tr>
<td>9B</td>
<td>SVE108040</td>
<td>With detent in position 1 and spring return in neutral position</td>
</tr>
<tr>
<td>10B</td>
<td>SVE108080</td>
<td>With detent in position 2 and spring return in neutral position</td>
</tr>
<tr>
<td>11B</td>
<td>SVE108120</td>
<td>With detent in position 1 and 2, spring return in neutral position</td>
</tr>
<tr>
<td>8K</td>
<td>SVE108160</td>
<td>With spring return in neutral position and 12 VDC spool solenoid lock device</td>
</tr>
<tr>
<td>8MG3(NO)</td>
<td>SVE108220</td>
<td>As previous 24 VDC</td>
</tr>
<tr>
<td>8ED3</td>
<td>SVE108360</td>
<td>ON/OFF 12 VDC elettro-hydraulic kit</td>
</tr>
<tr>
<td>8PG</td>
<td>SVE108708</td>
<td>Proportional pneumatic control</td>
</tr>
<tr>
<td>8PG3</td>
<td>SVE108742</td>
<td>ON/OFF 12 VDC elettro-pneumatic kit</td>
</tr>
</tbody>
</table>

### 5. “B” side options

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF3</td>
<td>SLEV108710</td>
<td>Lever box with spool stroke adjusting</td>
</tr>
<tr>
<td>SLP</td>
<td>SCOP 108000</td>
<td>Wibout lever box, with dust-proof plate</td>
</tr>
<tr>
<td>SLCY</td>
<td>SCOP 208060</td>
<td>Wibout lever box, with endcap</td>
</tr>
<tr>
<td>TQ</td>
<td>STE100010</td>
<td>Flexible cable connection</td>
</tr>
<tr>
<td>LCB</td>
<td>SCL038010</td>
<td>Joystick lever for 2 sections operation</td>
</tr>
</tbody>
</table>

### 6. Complete controls *

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>3XTP524290</td>
<td>Valve blanking plug</td>
</tr>
<tr>
<td>DST</td>
<td>3XTP624180</td>
<td>Valve blanking plug with connection to tank</td>
</tr>
</tbody>
</table>

### 7. Port valves

#### Need special body kit
Standard setting is referred to 10 l/min flow.

<table>
<thead>
<tr>
<th>TYPE</th>
<th>CODE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT</td>
<td>3XTP524290</td>
<td>Valve blanking plug</td>
</tr>
<tr>
<td>DST</td>
<td>3XTP624180</td>
<td>Valve blanking plug with connection to tank</td>
</tr>
</tbody>
</table>

#### Anti-shock valve

**P(G-300)** XCAR208113 From 100 to 250 bar / 1450 to 3600 psi: Standard setting 100 bar / 1450 psi

**P(G-400)** XCAR208114 From 200 to 315 bar / 2900 to 4600 psi: Standard setting 200 bar / 2900 psi

#### Anti-shock/anti-cavitation valve

**U(G-263)** XCAR308112 From 63 to 125 bar / 900 to 1800 psi: Standard setting 63 bar / 900 psi

**U(G-300)** XCAR308115 From 100 to 250 bar / 1450 to 3600 psi: Standard setting 100 bar / 1450 psi

**U(G-400)** XCAR308114 From 200 to 315 bar / 2900 to 4600 psi: Standard setting 200 bar / 2900 psi

**UX(Z-63)** X00541063 Setting 63 bar / 900 psi

**UX(Z-80)** X00541080 Setting 80 bar / 1150 psi

**UX(Z-100)** X00541090 Setting 100 bar / 1450 psi

**UX(Z-125)** X00541025 Setting 125 bar / 1800 psi

**UX(Z-160)** X00541060 Setting 160 bar / 2320 psi

**UX(Z-200)** X00541020 Setting 200 bar / 2900 psi

**UX(Z-250)** X00541025 Setting 250 bar / 3600 psi

**UX(Z-315)** X00541035 Setting 315 bar / 4600 psi

**UX(G-145)** X143411145 From 100 to 280 bar / 1450 to 4050 psi: Standard setting

#### Anti-cavitation valve

**C** XCAR408110 Anti-cavitation valve

**UX(Z-15)** X00541025 Setting 15 bar / 225 psi

**UX(Z-20)** X00541020 Setting 20 bar / 300 psi

**UX(Z-30)** X00541035 Setting 30 bar / 450 psi

**UX(Z-50)** X00541050 Setting 50 bar / 750 psi

**UX(Z-100)** X00541090 Setting 100 bar / 1450 psi

**UX(Z-125)** X00541025 Setting 125 bar / 1800 psi

**UX(Z-160)** X00541060 Setting 160 bar / 2320 psi

**UX(Z-200)** X00541020 Setting 200 bar / 2900 psi

**UX(Z-250)** X00541025 Setting 250 bar / 3600 psi

**UX(Z-315)** X00541035 Setting 315 bar / 4600 psi

**UX(G-145)** X143411145 From 100 to 280 bar / 1450 to 4050 psi: Standard setting

#### Pilot operated anti-shock/anti-cavitation valve: adjustable setting

**UX(G-145)** X143411145 From 100 to 280 bar / 1450 to 4050 psi: Standard setting
DLM140

Spool

Type 1

Performance data

**Load Sensing pump stand-by = 20 bar / 290 psi**

- **Stroke:** +7 mm / 0.28 in
- **Stroke:** -7 mm / 0.28 in

---

**Performance data**

- **Flow**: 0 to 120 (l/min)
- **Stroke**: -7 to 7 (mm)

---

**Walvoil Hydraulic Control Systems**

---

**52 DAU007E**
Type 5

This spool must be used only with spool positioner type 13, 13MGF, 13K (see page 30).

- Stroke: + 7 mm / 0.28 in
- Stroke: - 6.7 mm / 0.26 in
- Stroke: - 12 mm / 0.47 in
PSA: upper ports (standard)

Description example:
DLM140/2-AP/1N8LF3/1N8LF3/PSA

PASL: upper inlet and side outlet

Description example:
DLM140/2-AP/1N8LF3/1N8LF3/PASL
The SDM140 and DLM140 valves are assembled and tested as per the technical specification of this catalogue. Before the final installation on your equipment, follow the below recommendations:
- the valves can be assembled in any position, in order to prevent body deformation and spool sticking mount the product on a flat surface;
- in order to prevent the possibility of water entering the lever box and spool control kit, do not use high pressure wash down directly on the valve;
- prior to painting, ensure plastic port plugs are tightly in place.

### Fitting tightening torque - Nm / lbft

<table>
<thead>
<tr>
<th>THREADS TYPE</th>
<th>P and C ports</th>
<th>A and B ports</th>
<th>T port</th>
<th>L.S. signal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BSP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With O-Ring seal</td>
<td>70 / 51.6</td>
<td>50 / 36.9</td>
<td>70 / 51.6</td>
<td>20 / 14.8</td>
</tr>
<tr>
<td>With copper washer</td>
<td>70 / 51.6</td>
<td>60 / 44.3</td>
<td>70 / 51.6</td>
<td>25 / 18.4</td>
</tr>
<tr>
<td>With steel and rubber washer</td>
<td>70 / 51.6</td>
<td>60 / 44.3</td>
<td>70 / 51.6</td>
<td>16 / 11.8</td>
</tr>
<tr>
<td><strong>UN-UNF</strong></td>
<td>1 1/16-12 (SAE 12)</td>
<td>7/8-14 (SAE 10)</td>
<td>1 1/16-12 (SAE 12)</td>
<td>9/16-18 (SAE 6)</td>
</tr>
<tr>
<td>With O-Ring seal</td>
<td>95 / 70.1</td>
<td>60 / 44.2</td>
<td>95 / 70.1</td>
<td>30 / 22.1</td>
</tr>
<tr>
<td><strong>MET</strong></td>
<td>M 27x2</td>
<td>M 22x1.5</td>
<td>M 27x2</td>
<td>M 14x1.5</td>
</tr>
<tr>
<td>With O-Ring seal</td>
<td>100 / 73.8</td>
<td>60 / 44.2</td>
<td>100 / 73.8</td>
<td>35 / 25.8</td>
</tr>
</tbody>
</table>

**NOTE** - These torque are recommended. Assembly tightening torque depends on many factors, including lubrication, coating and surface finish. The manufacturer shall be consulted.
NOTE - All articulated parts inside cap, lever box and mechanical joystick are lubricated with synthetic base grease grade NLGI2

<table>
<thead>
<tr>
<th>Malfunction</th>
<th>Cause</th>
<th>Remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td>External leakage pivot box lever or control kit side.</td>
<td>Worn spool seal due to mechanical actuation or high back pressure.</td>
<td>Locate the leakage and replace the seal. Check back pressure level.</td>
</tr>
<tr>
<td>Excessive internal leakage on A and B ports.</td>
<td>Increase clearance between spools and body due to high wear.</td>
<td>Replace the directional control valve and check the oil contamination level.</td>
</tr>
<tr>
<td>Dropping load during transition while raising.</td>
<td>High leakage on the load check valve.</td>
<td>Remove the load check valve and clean the seat.</td>
</tr>
<tr>
<td>Inability to build pressure on A and B ports.</td>
<td>Pressure relief valve blocked open.</td>
<td>Remove and clean or replace the valve.</td>
</tr>
<tr>
<td></td>
<td>Low pump pressure and flow.</td>
<td>Check the pump and circuit.</td>
</tr>
</tbody>
</table>
Installation and maintenance

NOTE - All articulated parts inside cap, lever box and mechanical joystick are lubricated with synthetic base grease grade NLGI2

---

### Item list

1. Directional valve body
2. Valve on Load Sensing signal
3. Valve blanking plug
4. Spool: normally the spools are inter-changeable. Verify the smoothness during the assembly
5. Lever box
6. Side “A” spool positioner
7. Load check valve
8. Holding O-Ring bushing
9. O-Ring seals 18x2.5
   code: 4GUA118025

---

### Malfunction

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</tr>
<tr>
<td>Inability to build pressure on A and B ports.</td>
<td>Low pump pressure and flow.</td>
<td>Check the pump and circuit.</td>
</tr>
<tr>
<td></td>
<td>Valve on L.S. signal is jammed.</td>
<td>Remove and clean the valve; if necessary replace it.</td>
</tr>
</tbody>
</table>
**Connectors**

<table>
<thead>
<tr>
<th>Type</th>
<th>Poles</th>
<th>Nominal voltage</th>
<th>Nominal current</th>
<th>Permitted conductor section range</th>
<th>Permitted cable diameter range</th>
<th>Weather protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>C01</td>
<td>2P + T</td>
<td>250 VAC / 300 VDC</td>
<td>10 A</td>
<td>max. 1.5 mm² / max. 0.0023 in²</td>
<td>6-8 mm / 0.24-0.31 in</td>
<td>IP 65</td>
</tr>
<tr>
<td>C02</td>
<td>2P + T</td>
<td>250 VAC / 300 VDC</td>
<td>10 A</td>
<td>max. 1.5 mm² / max. 0.0023 in²</td>
<td>6-8 mm / 0.24-0.31 in</td>
<td>IP 65</td>
</tr>
<tr>
<td>C07</td>
<td>2P</td>
<td>/</td>
<td>20 A</td>
<td>1-2 mm² / 0.00155-0.0031 in²</td>
<td>2.8-3.5 mm / 0.11-0.14 in</td>
<td>IP 67</td>
</tr>
<tr>
<td>C08</td>
<td>2P</td>
<td>250 VAC</td>
<td>12 A</td>
<td>0.5-1 mm² / 0.00077-0.00155 in²</td>
<td>1.4-1.6 mm / 0.055-0.063 in</td>
<td>IP 65</td>
</tr>
<tr>
<td>C17</td>
<td>2P</td>
<td>/</td>
<td>20 A</td>
<td>1-2 mm² / 0.00155-0.0031 in²</td>
<td>1.3-1.7 mm / 0.051-0.067 in</td>
<td>IP 67</td>
</tr>
<tr>
<td>C19</td>
<td>2P</td>
<td>/</td>
<td>13 A</td>
<td>1-1.2 mm² / 0.00155-0.00186 in²</td>
<td>2.2-3.5 mm / 0.088-0.14 in</td>
<td>IP 67</td>
</tr>
<tr>
<td>C20</td>
<td>2P</td>
<td>/</td>
<td>14 A</td>
<td>0.8-1 mm² / 0.00124-0.00155 in²</td>
<td>1.3-1.7 mm / 0.051-0.067 in</td>
<td>IP 65</td>
</tr>
<tr>
<td>C24</td>
<td>2P</td>
<td>/</td>
<td>14A</td>
<td>0.3-0.5 mm² / 0.00046-0.00077 in²</td>
<td>1.4-1.7 mm / 0.055-0.067 in</td>
<td>IP 67</td>
</tr>
</tbody>
</table>
SDM140 and DLM140 valves can be supplied with one coat of black paint (CVN configuration).

Description example: SDM140/2-P(YG3-175)/18L/18L/PSA - CVN
DLM140/2-AP/1N8LF3/1N8LF3/PSA - CVN

For different colours consult Sales Department.