Solenoid Operated
Cartridge Valves

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Solenoid Operated Cartridge Valves

2-POSITION, 2-WAY SPOOL DIRECTIONAL VALVE

Maximum operating pressure = 5000 psi**
Maximum Leakage at 150 SUS = 5 in³/min. at 3000 psi
Switching frequency = 15000 cycles/hr
Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube. Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006). See www.sunhydraulics.com for details.

**For valves produced before January 1, 2004 (date code A041), the maximum operating pressure is 5000 psi at port 2 and 3600 psi at port 1.

NOTE: While the valve will operate reliably with pressures up to 5000 psi at Port 1, solenoid tube fatigue life is reduced.

Performance Curves

Valve Performance Limits at 10% Undervoltage and Stabilized Coil Temp.

Typical Performance Pressure Differential vs. Flow

OPTION ORDERING INFORMATION

DLDA - ***

Nominal Capacity | Control | Spool Configuration | Coil Configuration* | Seal | Twin Lead | Deutsch | Metric

| D | M Manual Override | H Normally Open | 212 | 12 VDC | 912 | 12 VDC | 812 |
| 10 GPM | X No Manual Override | C Normally Closed | 224 | 24 VDC | 924 | 24 VDC | 824 |

Maximum Leakage (in³/min. at 3000 psi with 150 SUS oil) = 5
Power (Watts) = 22
Operating Voltage Tolerance = ±10%
Typical response time (ms) = 30

* See page 167 for Solenoid Connector Options

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Solenoid Operated Cartridge Valves

DIRECT ACTING, 2-POSITION, 2-WAY POPPET DIRECTIONAL VALVE

- Maximum operating pressure = 5000 psi
- Maximum Leakage at 150 SUS = 10 drops/min.
- Switching frequency = 15000 cycles/hr.
- Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube.

Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006).

See www.sunhydraulics.com for details.

**For valves produced before January 1, 2004 (date code A041), the maximum operating pressure is 5000 psi at port 2 and 3600 psi at port 1. NOTE: While the valve will operate reliably with pressures up to 5000 psi at Port 1, solenoid tube fatigue life is reduced.

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

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<thead>
<tr>
<th>Nominal Capacity</th>
<th>Control</th>
<th>Spool Configuration</th>
<th>Coil Configuration*</th>
<th>Power (Watts)</th>
<th>Operating Voltage Tolerance</th>
<th>Typical response Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 GPM</td>
<td>M</td>
<td>Normally Open</td>
<td>ISODIN</td>
<td>22</td>
<td>± 10%</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>Normally Closed</td>
<td>AMP® Junior Timer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td>No Manual Override</td>
<td>Deutsch</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Solenoid Operated Cartridge Valves

2-POSITION, 3-WAY SPOOL DIRECTIONAL VALVE

- Maximum operating pressure = 5000 psi**
- Maximum Leakage at 150 SUS = 5 in³/min. at 3000 psi
- Switching frequency = 15000 cycles/hr.
- Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube.

Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006). See www.sunhydraulics.com for details.

** For valves produced before January 1, 2004 (date code A041), the maximum operating pressure is 5000 psi at ports 2 and 3 and 3600 psi at port 1.

NOTE: While the valve will operate reliably with pressures up to 5000 psi at Port 1, solenoid tube fatigue life is reduced.

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

Nominal Capacity

D 10 GPM

Control

M Manual Override
X No manual Override

Spool Configuration

A Normally Open
Ports 2 to 1
N Normally Open
Ports 2 to 3

Coil Configuration*

ISO/DIN
212 12 VDC
224 24 VDC
211 115 VAC
223 230 VAC

AMPE® Junior Timer
612 12 VDC
624 24 VDC

Twin Lead
712 12 VDC
724 24 VDC

Deutsch
912 12 VDC
924 24 VDC
948 48 VDC

Mini-Pack
812 12 VDC
824 24 VDC

Twin Spade
524 24 VDC

Seal

N Buna-N
V Viton

Typical Performance

Pressure Differential vs. Flow

Flow = GPM

P = psi

412 (3 to 2)
212 (2 to 1)
424 (2 to 3)
214 (1 to 2)

Typical Performance

Pressure Differential vs. Flow

Flow = GPM

P = psi

412 (3 to 2)
212 (2 to 1)
424 (2 to 3)
214 (1 to 2)

Visit www.sunhydraulics.com for detailed and complete technical information on our full line of products.
Solenoid Operated Cartridge Valves

2-POSITION, 4-WAY SPOOL DIRECTIONAL VALVE

Maximum operating pressure = 5000 psi**
Maximum Leakage at 150 SUS = 10 in³/min. at 3000 psi
Switching frequency = 15000 cycles/hr
Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube.
Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006).
See www.sunhydraulics.com for details.

** For valves produced before January 1, 2004 (date code A041), the maximum operating pressure is 5000 psi at ports 2, 3 and 4 and 3600 psi at port 1. NOTE: While the valve will operate reliably with pressures up to 5000 psi at Port 1, solenoid tube fatigue life is reduced.

DNDA-MCN

Valve Performance Limits at 10% Undervoltage and Stabilized Coil Temperature

Solenoid Operated Valves

Performance Curves

<table>
<thead>
<tr>
<th>Nominal Capacity</th>
<th>Typical Cartridge Model Code</th>
<th>Cartridge Dimensions</th>
<th>Installation Torque (lb. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-12 GPM</td>
<td>DNDA – MCN</td>
<td>T - 31A</td>
<td>3.34 7/8&quot; 3.52 1.47 30/35</td>
</tr>
</tbody>
</table>

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

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Solenoid Operated Cartridge Valves

2-POSITION, 2-WAY SPOOL DIRECTIONAL VALVE – PILOT CAPACITY

Performance Curves

- Maximum operating pressure = 5000 psi
- Maximum Leakage at 150 SUS = 10 drops/min.
- Switching frequency = 15000 cycles/hr.
- Cartridge can be installed directly into a cavity in some Sun pilot operated and ventable cartridges to provide electrically operated pilot control functions.
- Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube. Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006). See www.sunhydraulics.com for details.

OPTION ORDERING INFORMATION Model Codes printed in Red are Preferred Versions and most readily available

DAA*-M*N

<table>
<thead>
<tr>
<th>Nominal Capacity</th>
<th>Typical Cartridges</th>
<th>Cavity</th>
<th>a</th>
<th>b</th>
<th>M</th>
<th>C</th>
<th>d</th>
<th>Installation Torque (lb. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 GPM</td>
<td>DAAA – MCN</td>
<td>T - 8A</td>
<td>.75</td>
<td>7/8&quot;</td>
<td>2.94</td>
<td>3.13</td>
<td>1.22</td>
<td>25/30</td>
</tr>
<tr>
<td>25 GPM</td>
<td>DAAA – MHN</td>
<td>T - 8A</td>
<td>.75</td>
<td>7/8&quot;</td>
<td>2.94</td>
<td>3.13</td>
<td>1.22</td>
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<td>25 GPM</td>
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<td>3.13</td>
<td>1.22</td>
<td>25/30</td>
</tr>
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Performance Curves

- Maximum operating pressure = 5000 psi
- Maximum Leakage at 150 SUS = 10 drops/min.
- Switching frequency = 15000 cycles/hr.
- Proper installation of solenoid valves requires an extra deep socket to clear the solenoid tube. Sockets are available from Snap On tools (P/N SIML280) or Sun Hydraulics (P/N 998-100-006). See www.sunhydraulics.com for details.

OPTION ORDERING INFORMATION

Model Codes printed in Red are Preferred Versions and most readily available

Nominal Capacity | D B A - M*N
---|---
25 GPM | DBAA - MCN - T-9A 1.09 7/8” 2.94 3.13 1.22 25/30
25 GPM | DBAA - MHN - T-9A 1.09 7/8” 2.94 3.13 1.22 25/30
25 GPM | DBAC - MCN - T-9A 1.09 7/8” 2.94 3.13 1.22 25/30
25 GPM | DBAC - MHN - T-9A 1.09 7/8” 2.94 3.13 1.22 25/30

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