The D-316 Series

The Versa Products Company D-316 Series valve is a high performance, high flow, direct acting solenoid valve. Designed as a 3-way (3/2), it is a true multipurpose/universal flow, “bubble tight” valve throughout its complete operating range and cycle life. Suitable for air, natural gas and hydraulic media. High performance stainless steels make the D-316 Series an ideal choice for the harshest environments. The D-316 can be configured for full NACE compliance. Designed for ease of installation and field serviceability make the D-316 the choice for all applications.

Valve/Conduit Positioning
Solenoid housing rotates 360° without need for tools, disassembly or valve re-adjustment. The D-316 high performance valve can be mounted in any orientation for simplified installation and connection. Reduced installed cost/labor.

Encapsulated Class H Coil
Offer Moisture resistant and enhanced heat dissipation. Standard Class H coil offers high temperature ratings for long product life in the most severe environments.

Direct Acting Solenoid Design
The D-316 solenoid valves utilize a high performance direct acting solenoid for the perfect balance of flow, power and size.

Poppet
Universal high flow balanced poppet design is maximized through a unique sealing design. The balanced design assures no false shifts due to pressure spikes regardless of application pressures. Universal flow provides all functions in one valve.

No External Vent
The valve internals are sealed, providing protection from harsh environmental conditions.

Optimized Coil Design
The D-316 high performance coil allows maximum pull in force vs low power consumption.

Integral Junction Box

O Ring Poppet Sealing
Positive “Bubble Tight” sealing via standard ‘O’ rings. No custom or flat gaskets required, only readily available standard FKM ‘O’ rings. A variety of seal materials are available offering media and temperature flexibility.

Corrosion Resistant Materials
Standard materials are 316L stainless steel for compatibility with the widest range of media in almost any service.

Simple Maintenance
Replace coil and or seals without removing the valve from system tubing/piping.

Agency Approvals
The D-316 Series meets worldwide hazardous area regulations and standards.

D-316 Series Shut Off Valve (SOV) 1oo2

The SOV option provides a series pilot control circuit that requires two solenoids, a primary and a secondary, to be energized in order for the actuator to shift. Conversely if the electrical signal to either solenoid is removed the actuator will return to the de-energized position. This function can be considered as a 1oo2 where the primary solenoid is wired to the control system and the secondary, shut down solenoid, is wired to various sensors (e.g., temperature - pressure).

Consult factory for ordering information.
Specifications

Actuation: Solenoid actuated, spring return
Function: 3/2, 3-Way, 2 Position, universal flow
Media: Pneumatic, Air/Inert gas and Hydraulic
Pressure: vac to 175 psi (vac to 12 bar)
Flow: 0.8 Cv
Temperature: +4°F to 194°F (-20°C to 90°C), low temp Buna option -44
-62°F to 194°F (-52°C to 90°C) Fluorosilicone option -T40
Port size: ¼” npt

Voltage/Power:

<table>
<thead>
<tr>
<th>Voltage/Power</th>
<th>Voltage</th>
<th>Power</th>
<th>Ordering code</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>-D012</td>
<td>-D024</td>
<td></td>
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<tr>
<td>24 VDC</td>
<td></td>
<td>-D125</td>
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</tr>
<tr>
<td>125 VDC</td>
<td></td>
<td>-A120</td>
<td>-E110</td>
</tr>
<tr>
<td>110/120 VAC</td>
<td></td>
<td>-A240</td>
<td>-E220</td>
</tr>
<tr>
<td>220/240 VAC</td>
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<td></td>
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</table>

Coil class: H Class
Surge protection: None, standard
Diode, suffix -303D. DC only
Metal-oxide varistor (MOV), suffix -303. AC or DC
Connections: ½” NPT or M20 conduit hub
Ingress protection: IP66/67/68 & NEMA 4, 4X & 6P

Materials of construction*:
- Body: 316L Stainless Steel
- Poppet: 316L Stainless Steel
- Coil Housing: 316L Stainless Steel
- Coil: Epoxy molded
- Seals: FKM: Fluorocarbon, standard

*All valve components comply with NACE MR0175 except for main spring which is 316 stainless steel.
All wetted parts are NACE Compliant.
For full NACE compliance, add option -NA for Inconel spring.

Solenoid Type

<table>
<thead>
<tr>
<th>Solenoid Type</th>
<th>Suffix Number</th>
<th>Rating</th>
<th>Agency</th>
<th>Connection</th>
</tr>
</thead>
</table>
| World Solenoid | -XDDS | Ex II 2 G D  
Ex d IIC T4 Gb  
Ex tb IIIC IP66 T4 °C Db  
Cl, I Zn 1, A,Ex d e IIC  
Cl, II, Zn 21, AEx tD A21, T4 °C | ATEX  
IECEx  
CSA US | M20 |
| World Solenoid with North American rating | -XDDT | Ex II 2 G D  
Ex d IIC T4 Gb  
Ex tb IIIC IP66 T4 °C Db  
Ex d IIC T4, Cl I, Zn 1, AEx d IIC T4 Zone 21, AEx tb IIIC T4 Db  
Type 4X, 6P, IP66/68  
Cl I Div 1, Grps B, C & D  
Cl II Div 1 Grps E, F & G  
Cl III T4  
Cl I Div 2, Grps A, B, C & D T4 | ATEX  
IECEx  
CSA US | ½” NPT |

Valve Type - Options

<table>
<thead>
<tr>
<th>Valve Type &amp; Options</th>
<th>Part Number</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid Operated-Spring return</td>
<td>DSM-3301-316-XDD*-(**)</td>
<td>5.1 lbs (2.3 kg)</td>
</tr>
<tr>
<td>Solenoid Operated-Spring return with Non-locking override, unguarded</td>
<td>DSM-3301-316-M-XDD*-(**)</td>
<td>5.2 lbs (2.4 kg)</td>
</tr>
<tr>
<td>Solenoid Operated-Spring return with Locking override, unguarded</td>
<td>DSM-3301-316-M5R-XDD*-(**)</td>
<td>5.2 lbs (2.4 kg)</td>
</tr>
<tr>
<td>Solenoid Operated-Spring return with Non-locking override, guarded</td>
<td>DSM-3301-316-G-XDD*-(**)</td>
<td>5.2 lbs (2.4 kg)</td>
</tr>
<tr>
<td>Solenoid Operated-Spring return with Locking override, guarded</td>
<td>DSM-3301-316-G5R-XDD*-(**)</td>
<td>5.2 lbs (2.4 kg)</td>
</tr>
<tr>
<td>Solenoid Operated-Spring return with Latching override</td>
<td>DSM-3301-316-XDD*-356BN-(**)</td>
<td>5.4 lbs (2.4 kg)</td>
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<tr>
<td>Solenoid Operated-Spring return with Latching override and manual button</td>
<td>DSM-3301-316-XDD*-356B-(**)</td>
<td>5.6 lbs (2.5 kg)</td>
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</table>

*Select Suffix Number; XDDS for M20 conduit hub or XDDT for ½” NPT conduit hub. See “Solenoid Type” chart above
**Select voltage from “Voltage/Power” chart above
†For port 1 & 3 facing left use suffix -356BR or 356NBR
**The D-316 Series**

**Dimensions**

![Dimensions Diagram]

**WARNINGS REGARDING THE DESIGN APPLICATION, INSTALLATION AND SERVICE OF VERSA PRODUCTS**

The warnings below must be read and reviewed before designing a system utilizing, installing, servicing, or removing a Versa product. Improper use, installation or servicing of a Versa product could create a hazard to personnel and property.

**DESIGN APPLICATION WARNINGS**

Versa products are intended for use where compressed air or industrial hydraulic fluids are present. For use with media other than specified or for non-industrial applications or other applications not within published specifications, consult Versa.

Versa products are not inherently dangerous. They are only a component of a larger system. The system in which a Versa product is used must include adequate safeguards to prevent injury or damage in the event of system or product failure, whether this failure be of switches, regulators, cylinders, valves or any other system component. System designers must provide adequate warnings for each system in which a Versa product is utilized. These warnings, including those set forth herein, should be provided by the designer to those who will come in contact with the system.

Where questions exist regarding the applicability of a Versa product to a given use, inquiries should be addressed directly to the manufacturer. Confirmation should be obtained directly from the manufacturer regarding any questioned application prior to proceeding.

**INSTALLATION, OPERATION AND SERVICE WARNINGS**

Do not install or service any Versa product on a system or machine without first depressurizing the system and turning off any air, fluid, or electricity to the system or machine. All applicable electrical, mechanical, and safety codes, as well as applicable governmental regulations and laws must be complied with when installing or servicing a Versa product.

Versa products should only be installed or serviced by qualified, knowledgeable personnel who understand how these specific products are to be installed and operated. The individual must be familiar with the particular specifications, including specifications for temperature, pressure, lubrication, environment and filtration for the Versa product which is being installed or serviced. Specifications may be obtained upon request directly from Versa. If damages should occur to a Versa product, do not operate the system containing the Versa product. Consult Versa for technical information.

**LIMITED WARRANTY DISCLAIMER AND LIMITATION OF REMEDIES**

Versa’s Series products are warranted to be free from defective material and workmanship for a period of ten years from the date of manufacture, provided said products are used in accordance with Versa specifications. Versa’s liability pursuant to that warranty is limited to the replacement of the Versa product proved to be defective provided the allegedly defective product is returned to Versa or its authorized distributor. Versa provides no other warranties, expressed or implied, except as stated above. There are no implied warranties of merchantability or fitness for a particular purpose. Versa’s liability for breach of warranty as herein stated is limited to the replacement of the product proved to be defective.

Versa also provides a limited warranty for Versa products used in accordance with Versa specifications. Versa’s Series products are warranted to be free from defective material and workmanship for a period of ten years from the date of manufacture, provided said products are used in accordance with Versa specifications. Versa’s liability pursuant to that warranty is limited to the replacement of the product proved to be defective provided the allegedly defective product is returned to Versa or its authorized distributor. Versa provides no other warranties, expressed or implied, except as stated above. There are no implied warranties of merchantability or fitness for a particular purpose. Versa’s liability for breach of warranty as herein stated is limited to the replacement of the product proved to be defective.

**Flow Symbol**

![Flow Symbol Diagram]

**Table: Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C Ø</th>
<th>D</th>
<th>D*</th>
<th>D**</th>
<th>D¹</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
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<td>2.83</td>
<td>7.06</td>
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<td>0.50</td>
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<tr>
<td>DSM-3301-316-G-XDD_-Volts</td>
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<td>DSM-3301-316-356BN-XDD_-Volts</td>
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