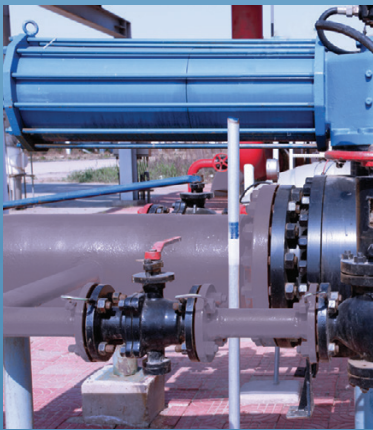


SOLENOID VALVES FOR VALVE AUTOMATION

# VERSA

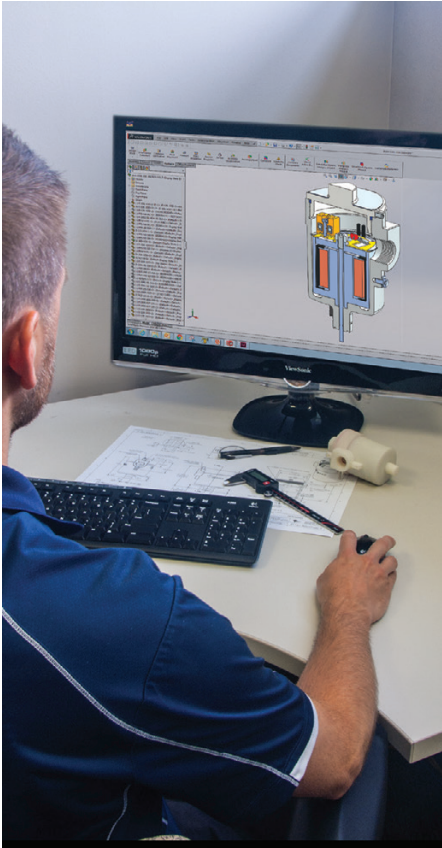
BULLETIN  
VAC-2017

Delivering Reliability Under Pressure for 65 Years



[www.versa-valves.com](http://www.versa-valves.com)  
e-mail: [sales@versa-valves.com](mailto:sales@versa-valves.com)

Versa Products Company, Inc., 22 Spring Valley Road, Paramus, New Jersey 07652 TEL: (201) 843-2400 Fax: (201) 843-2931  
Versa BV., Prins Willem Alexanderlaan 1427, 7312 GB Apeldoorn, The Netherlands TEL: +31-55-3681900 FAX: +31-55-3681909



## **QUALITY IS ABSOLUTE**

Quality has no degrees at Versa. There is no such thing as “pretty good” or “almost right”. Every product is designed and manufactured to conform to uniformly high standards.

These standards are assured by a quality management system which includes ISO 9001 certification and testing of all products prior to shipment.



## **THE COMMITMENT CONTINUES**

Fluid Power is our business. It is our only business, so we have to be good at it. Since its beginning in 1949, Versa has maintained its commitment to quality products and satisfied customers.

Versa has succeeded in serving industry’s needs with a broad line of directional control devices. Our focus on product variety, technical expertise and company support remains constant. It all begins with a responsiveness to industry needs and ends with delivery of the valve or system you need—when you need it.

We view ourselves as problem solvers and that role requires more than making good products. It is what we do before and after that is equally important. From drawing board to user satisfaction, our commitment is continuous.

No matter how tough the application or environmental demands, Versa offers you a choice of valves to meet the challenge. Advanced design, durable construction materials and rigid manufacturing standards provide valves you can rely on for years of trouble-free performance.

Be it a single valve or a pneumatic system, Versa’s commitment to quality is uncompromising. Count on it.

## **HOW WE PUT IT TOGETHER IS WHAT SETS US APART**

Versa is not the biggest manufacturer of directional control valves, so we try to be the best.

Design, manufacture, quality control, pricing, delivery - whatever the function - it must be geared to customer needs.

Many companies sell valves. At Versa we sell satisfaction.

## **WORLDWIDE ACCESSIBILITY**

More than 1000 fluid power representatives and over 100 stocking locations comprise Versa’s worldwide distribution system. They are supported by manufacturing and technical centers in the United States and The Netherlands.

The distributor network is the key to customer service and the source of continuous application feedback. Versa uses this input as part of its research and development program in an effort to respond to individual and industry needs.

Versa makes certain that our distributors’ sales and service personnel receive factory training on an ongoing basis. This includes basic theory, product indoctrination and seminars.

Our distributor family is a source of pride to Versa—but more important—it is a source of support and service to all of our customers.

Contact Versa for the distributor servicing your specific area.

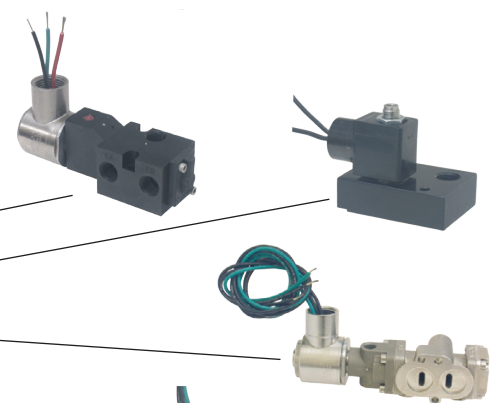


Versa exercises diligence to assure that information contained in this catalog is correct, but does not accept responsibility for any errors or omissions. Versa also reserves the right to change or delete data or products at any time without prior notification. To be sure the data you require is correct, consult factory.

# CONTENTS GUIDE

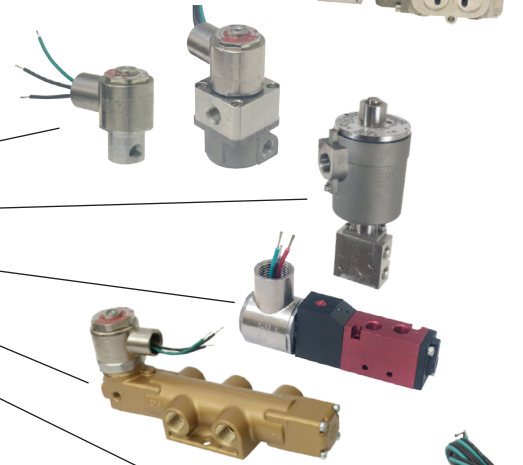
## Direct Mount Actuator Valves

<b>NAMUR (Series C5) 4-Way</b> .....	Page 4 - 7
<b>NAMUR (Series E5) 3-Way</b> .....	Page 4 - 6
<b>NAMUR (Series C-316) 3-Way &amp; 4 way</b> .....	Page 4 - 7



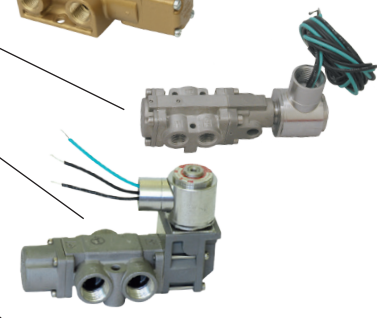
## Bodyported Valves

<b>Stainless Steel (Series E &amp; E5) 3-Way</b> .....	Page 8 - 9
<b>Stainless Steel (Series D316) 3-Way</b> .....	Page 10 - 11
<b>Aluminum (Series C5 &amp; C7) 3-Way &amp; 4 way</b> .....	Page 12 -13
<b>Brass (Series V) 3-Way &amp; 4 way</b> .....	Page 14 -15
<b>Stainless Steel (Series C-316) 3-Way &amp; 4 way</b> .....	Page 16 - 17
<b>Stainless Steel (Series V-316) 3-Way &amp; 4 way</b> .....	Page 18 - 19



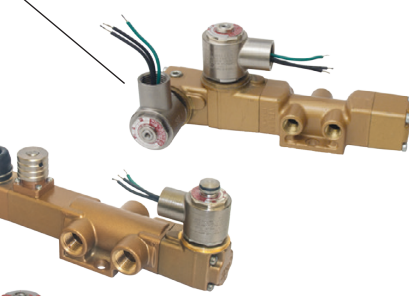
## Special Purpose Dual Solenoid Valves

<b>Brass (Series V) or Stainless Steel (Series V-316)</b> 3-Way & 4-Way .....	Page 20 - 21
--	--------------



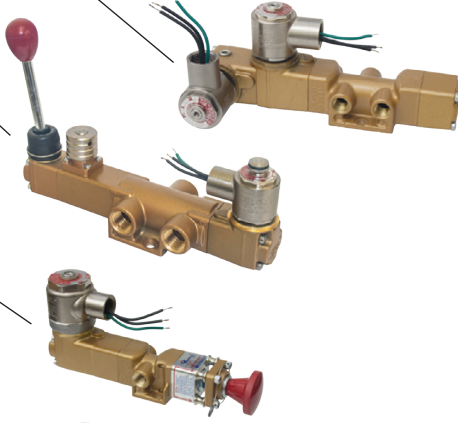
## Latching/Manual Reset Valves:

<b>Brass (Series V) or Stainless Steel (Series V-316)</b> 3-Way & 4-Way .....	Page 22 - 23
--	--------------



## Lockout Valves:

<b>Brass (Series V) or Stainless Steel (Series V-316)</b> 3-Way and 4-Way .....	Page 24
--	---------



## Modular Air Packages CMAP - VMAP

<b>Stainless Steel (Series C-316 &amp; Series V-316)</b> CMAP/VMAP .....	Page 30 - 31
---	--------------



## Technical Information:

Hazardous Location Combination Suffix Details ....	Page 25
Non-Hazardous Service Solenoids .....	Page 26 -28
Hazardous Service Solenoids .....	Page 26 -29
Miscellaneous Options .....	Page 29

<b>Warranty</b> .....	Page 32
-----------------------	---------

# DIRECT MOUNT ACTUATOR VALVES

ALUMINUM

STAINLESS STEEL

The Versa NAMUR mount control valves are high flow, bubbletight, direct acting or solenoid/pilot operated. They are designed to mount directly to any NAMUR actuator, thus reducing actuator response time and cost of tubing, fittings, brackets, and labor. These valves are available in two materials - Aluminum and 316L stainless steel.

E5 is a direct acting 3-way (3/2) solenoid valve. C5 and C316 are solenoid/pilot operated high flow, 5-port NAMUR valves. They are available as single or double solenoid 2-position (C5 - C316) and 3-position (C5) models. Single solenoid spring return models utilize an air assisted spring return feature, assuring a positive return. Double solenoid valves may be used in applications where a momentary signal is required or in a "fail in last shifted position" actuator application.

A complete selection of electrical connections, area classifications, and power requirements makes the most exacting and demanding specifications or applications easy to satisfy.

E5 NAMUR



## General Description

The aluminum E5 NAMUR mount control valve is an inexpensive, simple and effective 3-way direct-acting solenoid valve. It is designed to mount directly to any actuator with NAMUR footprint thus reducing cost of tubing, fittings, brackets and labor.

It is most effective on spring return or fail-safe actuators where high speed open or close is not important, but where cost is a factor. A threaded actuator vent port is standard.

Available as a 3-way, 2-position, direct acting solenoid, spring return only, and with most of the Versa solenoid options.

C5 NAMUR



## General Description

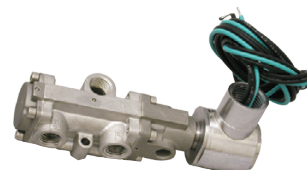
The aluminum C5 NAMUR is available as either 4-way (for double acting actuators) or 3-way (for spring return or fail-safe actuators). This valve is field convertible utilizing no special tools, gaskets, or sealants.

Relocation of a port plug converts a 3-way to a 4-way, or a 4-way to a 3-way. When the 4-way valve is converted to 3-way function, the unused exhaust port becomes an actuator vent into which a filter/muffler can be installed to prevent contaminants from entering either the valve or the actuator.

Single solenoid models (for 2-position control), or double solenoid models (for 2 or 3-position control) are available.

Actuator positioning is possible with the use of 3-position valves since all Versa C5 NAMUR valves are bubbletight.

C316 NAMUR



## General Description

The stainless steel C316 NAMUR valve is available as either a 4-way (for double acting actuators) or as a 3-way (for spring return actuators).

When the 3-way function is utilized, the unused exhaust port becomes an actuator vent where a filter/muffler can be installed to prevent contaminants from entering the valve or the actuator.

The 5-port design allows the user to independently control actuator speed in either open or closed direction by utilizing speed or bleed controls.

Double solenoid models are equipped with a detent that maintains the valve in the last shifted position, even in high vibration applications.

## SPECIFICATIONS

### Materials

Valve Body and Plunger E5 & C5 C-316:	Anodized aluminum 316L Stainless Steel
Actuating Caps C5:	Solenoid – anodized aluminum spring cap – synthetic resin
Pilot Piston C5:	Synthetic resin
Valve Seals E5 – C5:	Plunger and body – FKM (fluorocarbon) Pilot piston – NBR (nitrile) Valve/actuator – mounting O-rings –NBR (nitrile)
Screws Body: E5 – C-316: C5:	Stainless steel Stainless steel (valve to actuator) Carbon steel (valve to actuator)
Solenoid Parts E5, C5 & C-316: E5 – C5: E5, C5 & C-316	Sleeve, plunger & spring – 304 & 430F stainless steel Coils – epoxy molded with 3 spade terminals (std). Coil housing (per coil option selected) see page 26-29

### Installation and Filtration

Valves:	No limitations on mounting orientation.
Filtration:	40 to 50 micron

### Port Size

Inlet, outlet and exhaust	E5	1/4 NPT or G1/4-Series (vent 10-32)
	C5	1/4 NPT or G1/4-Series (C5 only)
	C-316	

### Flow Rates

		Cv
Inlet, outlet and exhaust	E5	0.08
	C5	0.75
	C-316	1.6

### Options

### Suffix

Manual Override	No Suffix:
C5:	Standard on basic valves, guarded-push to operate, turn to lock. -CML; unguarded-push to operate, twist to lock
C-316:	-ME; unguarded, push to operate,

Valve Type	Operating Pressure Range* Pneumatic		
	E5	C5	C-316
Single Solenoid/Spring Return (2-Position)	0-150 psi (0-10.3 bar)	15-115 psi (1-8 bar)	25-150 psi (1.8-10.3 bar)
Double Solenoid/Detented (2-Position)	—	10-115 psi (0.7-8 bar)	15-150 psi (1-10.3 bar)
Double Solenoid/Spring Centered (3-position)	—	15-115 psi (1-8 bar)	—

\* Pressures ranges may change based on solenoid option. See page 27. For applications above 125 psi (8.6 bar) exhaust flow controls or mufflers are recommended.

# DIRECT MOUNT ACTUATOR VALVES



## Basic Valve Numbers

### E5 NAMUR Valve

Product Selector			Basic Valve Number*	
FUNCTION	PORT SIZE	Cv	SINGLE SOLENOID/SPRING RETURN 2-POSITION	
3-Way 3/2	1/4 NPT G1/4	.08 .08	E5SM-3011-34-NB1 -†- (coil code) E5SM-3071-34-NB1 -†- (coil code)	

### C5 NAMUR Valve

Product Selector			Basic Valve Number*			
FUNCTION	PORT SIZE	Cv	SINGLE SOLENOID/SPRING RETURN, 2-POSITION	DOUBLE SOLENOID/DETENT, 2-POSITION	DOUBLE SOLENOID/SPRING CENTERED, 3-POSITION	
					Blocked Center	Exhaust Ports Open
4-Way 5/2 & 5/3	1/4 NPT G1/4	.75 .75	CGS-4232-NB1 -†- (coil code) CGS-4292-NB1 -†- (coil code)	CGG-4232-NB1 -†- (coil code) CGG-4292-NB1 -†- (coil code)	CXX-4233-NB1 -†- (coil code) CXX-4293-NB1 -†- (coil code)	CXX-4234-NB1 -†- (coil code) CXX-4294-NB1 -†- (coil code)
3-Way** 3/2 & 3/3	1/4 NPT G1/4	.75 .75	CGS-3232-NB1 -†- (coil code) CGS-3292-NB1 -†- (coil code)	CGG-3232-NB1 -†- (coil code) CGG-3292-NB1 -†- (coil code)	CXX-3233-NB1 -†- (coil code) CXX-3293-NB1 -†- (coil code)	CXX-3234-NB1 -†- (coil code) CXX-3294-NB1 -†- (coil code)

### C-316 NAMUR Valve

Product Selector			Basic Valve Number*			
FUNCTION	PORT SIZE	Cv	SINGLE SOLENOID/SPRING RETURN, 2-POSITION	DOUBLE SOLENOID DETENT, 2-POSITION	LATCHING, SINGLE SOLENOID SPRING RETURN 356BN	LATCHING, SINGLE SOLENOID SPRING RETURN 356B
4-Way 5/2	1/4 NPT G1/4	1.6	CGS-4332-316-NE1 -†- (coil code)	CGG-4332-316-NE1 -†- (coil code)	CGA-4332-316-NE1-356BN-†-(coil code)	CGA-4332-316-NE1-356B-†-(coil code)
3-Way 3/2	1/4 NPT G1/4	1.6	CGS-3331-316-NE1 -†- (coil code)	CGG-3331-316-NE1 -†- (coil code)	CGA-3331-316-NE1-356BN-†-(coil code)	CGA-3331-316-NE1-356B-†-(coil code)

\* All valves include O-ring interface seals and #10-24 mounting screws. E5-C5: For #10-32 screws change NB1 to NB2. For M5 screws change NB1 to NB3. C-316: For #10-32 screws change NE1 to NE2. For M5 screws change NE1 to NE3.

\*\*3-Way C5 is the same body configuration as the 4-Way, but has the cylinder port plug in the 3-Way position. See "Note" in C5 section page 6

†Add suffix option here, if required  
For coil code see top of page 27

## NAMUR Actuator Speed Chart

This chart represents approximate actuator operation times under average load conditions at 80 psi (5.5 bar). Due to differing designs of quarter-turn actuators, breakaway friction, loading, internal airflow, inlet piping, fittings and exhaust port options, the values shown are intended as an estimate. Faster or slower times may actually be achieved.

		Actuator Volume in <sup>3</sup> (cm <sup>3</sup> )									
		Valve Type	5 (82)	10 (164)	25 (410)	50 (820)	100 (1640)	150 (2460)	200 (3280)	400 (6560)	600 (9840)
ACTUATOR CYCLE TIME IN SECONDS	C5	.32	.36	.47	.63	.98	1.3	1.7	3.1	4.5	7.2
	E5	.46	.64	1.1	2.0	3.9	5.7	7.5	-	-	-
	C-316	.19	.21	.25	.35	.55	.65	1.0	1.5	2.2	3.5

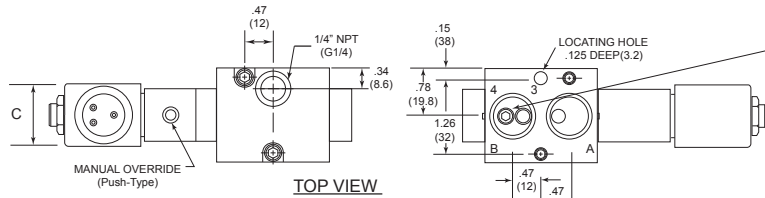
For double-acting actuators (open & close), use volume from selected from chart. Actuator spring loading may affect shift time. Slower actuator specifications and the chart for estimated speed. The times speeds (adjustable) can always be accomplished by using Versa's indicated are per shift. For spring return actuators, use open volume to Bleed Control Valves in the control valve exhaust port. obtain time

# DIRECT MOUNT ACTUATOR VALVES

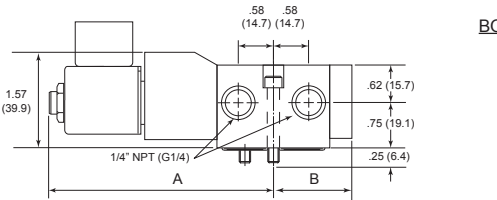
ALUMINUM

STAINLESS STEEL

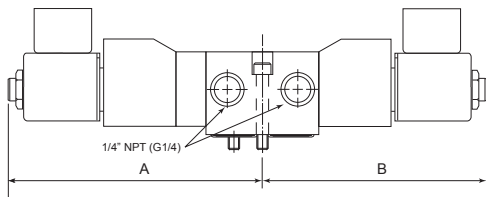
## SERIES C5 & E5 NAMUR Dimensions



NOTE: THE FUNCTION OF THE VALVE IS FIELD CONVERTIBLE WHEN ORDERING A 4 WAY, CGS-4232-NB1 THE PLUG IS IN POSITION "4" (AS SHOWN) WHEN ORDERING A 3-WAY, CGS-3232-NB1 THE PLUG IS IN POSITION "3" EB BECOMES VENT WHEN USEN AS A 3-WAY

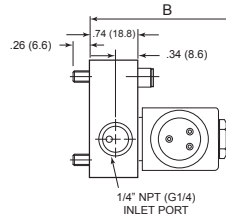


SIDE VIEW (CGS)



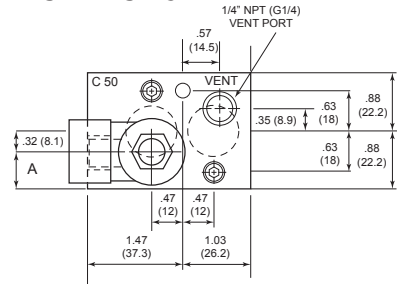
SIDE VIEW (CGG/CXX)

BOTTOM VIEW



END VIEW

### SERIES E5



TOP VIEW

NOTES :  
Dimensions show 1/4NPT body markings, G1/4 body markings are: (1) = in; (4) = A; (2) = B; (5) = EA; (3) = EB.  
Options -PC is shown for reference.

### E5 NAMUR DIMENSIONS:

Valve Type	Solenoid Option					
	STANDARD, -228L		-C50, -PC		-XX, -XN	
	A	B	A	B	A	B
E5	0.44 (11.2)	2.31 (58.7)	0.52 (13.2)	2.31 (58.7)	.73 (18.4)	2.39 (60.7)

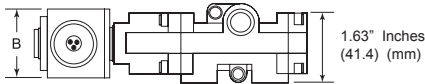
### C5 NAMUR DIMENSIONS:

Valve Type	Solenoid Options											
	Standard, -228L			C50, -PC			-XX, -XN			-XISC, -XISX6		
	A	B	C	A	B	C	A	B	C	A	B	C
CSG	3.71 (94.2)	1.31 (38.3)	.885 (22.5)	3.71 (94.2)	1.31 (33.3)	1.04 (26.4)	3.79 (96.3)	1.31 (33.3)	1.45 (36.8)	3.53 (89.7)	1.31 (33.3)	1.15 (29.2)
CGG/ CXX	4.21 (106.9)	3.71 (94.2)	.885 (22.5)	4.21 (106.9)	3.71 (94.2)	1.04 (26.4)	4.29 (109.0)	3.79 (96.3)	1.45 (36.8)	4.03 (102.4)	3.53 (89.7)	1.15 (29.2)

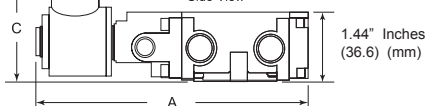
Shown as  $\frac{\text{inch}}{\text{mm}}$

## SERIES C-316 NAMUR Dimensions

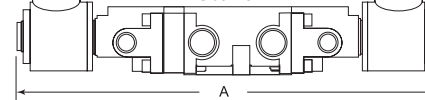
Typical CSG-4332-316-NE1-XMA-A120  
Top View



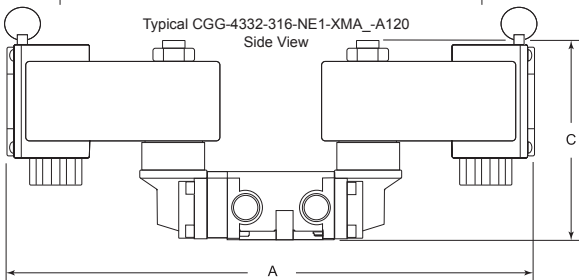
Side View



Typical CGG-4332-316-NE1-XX-A120  
Side View



Typical CGG-4332-316-NE1-XMA\_A120  
Side View



### C-316 NAMUR DIMENSIONS

Valve Type	SOLENOID OPTIONS									
	GENERAL SERVICE	HAZARDOUS SERVICE (-XX, -XN, -XISC, -XISX6)			HAZARDOUS SERVICE (-XMA, -XIF)					
		A	B	C	A	B	C	A	B	C
Single solenoid, spring return 3-Way or 4-Way	Inches (mm)	5.62 (142.7)	1.44 (36.6)	2.33 (59.1)	5.67 (144)	1.44 (36.6)	2.33 (59.1)	6.59 (167.3)	2.56 (65)	4.27 (108.5)
Double solenoid 3-Way or 4-Way	Inches (mm)	8.70 (221)	1.44 (36.6)	2.33 (59.1)	8.79 (223.2)	1.44 (36.6)	2.33 (59.1)	10.6 (269.2)	2.56 (65)	4.27 (108.5)

For warranty information and/or any additional information with regards to installation, operation and service warnings, please consult factory.

### Versa NAMUR ReBreather

Actuator Controls For Harsh Or Dirty Environments

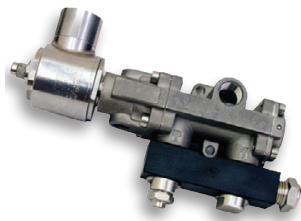
#### Introduction

A valve accessory to protect valves and actuators from harsh and corrosive atmospheres. Designed to prevent the actuator spring chambers from sucking in external air and contaminants during the return stroke.

#### How it works

The ReBreather block is used on single acting actuators to prevent corrosive atmosphere from entering the actuator spring side. This add-on accessory is also designed to use available instrument air to fill spring side, thus assuring only clean air enters the actuator.

The instrument air it utilizes on the return stroke is the air from the exhaust cycle of the piston side of actuator. No additional air is required to complete the cycle and keep actuator clean, hence the reason this accessory is called a "ReBreather" -reusing clean exhaust air to keep actuator clean



### Versa Dual Speed Control

Actuator Controls For Harsh Or Dirty Environments

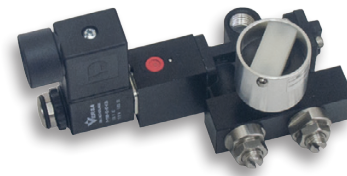
#### Description

A simple device to control actuator speed in applications where the environment is corrosive from production, plant pollutants or other environmental issues. The Dual Speed Control Accessory protects the actuator package from external air and containments.

#### How it works

The Versa Dual Speed Control block is used on double acting actuators to prevent corrosive atmosphere from entering the valve package (actuator and solenoid NAMUR valve).

Accessory includes 2 of Versa's proven "Bleed Controls" to allow independent adjusting of open and close speeds.



## ORDERING INFORMATION

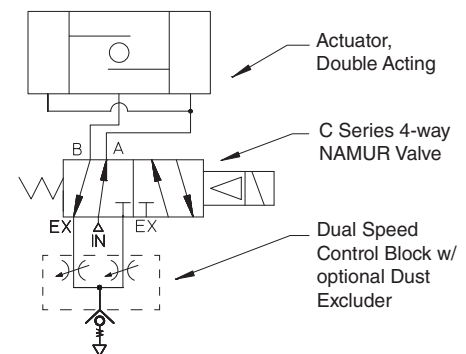
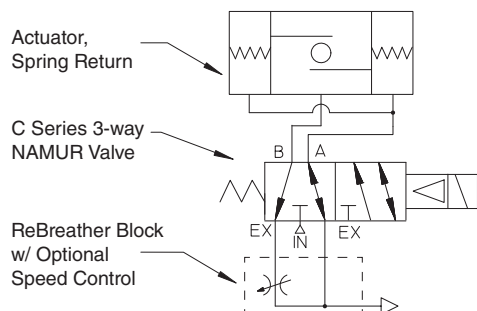
As a Kit		
C Series	C 316 Series	Description
C-33RB-NB	C-33RB-NE	Plate, 1/4" NPT vent port open
C-33RB-NB-BC	C-33RB-NE-BC	Plate, and speed control, with 1/4" NPT vent port open
C-33RB-NB-DE3	C-33RB-NE-DE3	Plate, with DE-3 in vent port**
C-33RB-NB-BC-DE3	C-33RB-NE-BC-DE3	Plate, and speed control, with DE-3 in vent port
C-33RB-NB-MFS3	C-33RB-NE-MFS3	Plate, with MFS-3 in vent port
C-33RB-NB-BC-MFS3	C-33RB-NE-BC-MFS3	Plate, and speed control, with MFS-3 in vent port

On a Valve			
Suffix*	Description	Suffix*	Description
-RB	Plate, 1/4" NPT vent port open	-RB1	Plate, and speed control, with 1/4" NPT vent port open
-RB2	Plate, with DE-3 in vent port**	-RB3	Plate, and speed control, with DE-3 in vent port
-RB4	Plate, with MFS-3 in vent port	-RB5	Plate, and speed control, with MFS-3 in vent port

As a Kit		
C Series (-NB/-NX)	C 316 Series (-NE)	Description
C-43SC-NB	C-43SC-NE	Plate and speed controls with 1/4" NPT vent port open**
C-43SC-NB	C-43SC-NE-DE3	Plate and speed controls with DE-3 in vent port**

On a Valve	
Suffix*	Description
-DBC	Plate and speed controls with 1/4" NPT vent port† for -NE valves
-DBC1	Plate and speed control with 1/4" NPT vent port† for NB/-NX valves
-DBC2	Plate and speed control with DE-3 in vent port for -NB/-NX valves
-DBC3	Plate and speed control with DE-3-316 in vent port for -NE valves

\*Add suffix to complete C/C-316 series valve part number.  
 \*\*Aluminum DE on C Series and Stainless on C-316 Series  
 † Customer supplied excluder



# BODYPORTED VALVES

STAINLESS STEEL CONSTRUCTION

## 3-WAY DIRECT ACTING SOLENOID VALVES

### General Description

The E4SM and E5SM are direct acting 3 port 2-Position (3/2), 1/8" or 1/4" NPT ported valves. The E4SM has a dedicated 316L solenoid housing with an integral junction box for Hazardous Locations with IEC, ATEX, INMETRO and North American agency approvals. The E5SM is available with plated steel or stainless steel solenoid housing with 24" leads standard. Agency approvals – ATEX and North America. Both valve series solenoid housings are available with 1/2" NPT or M20

conduit hub.

A variation of the valve type provides electrical quick exhaust valves E4QE and E5QE. These valves function the same as a 3-Way valve, but a larger capacity exhaust and rapid response to slight pressure differential during the de-energized portion of the cycle results in a more rapid evacuation of the controlled device than would be expected with a standard 3-Way valve.

3-WAY DIRECT SOLENOID VALVE PRODUCT NUMBER SELECTOR PNEUMATIC						PART NUMBERS* Single Solenoid/Spring Return, 2-Position			
AREA	FUNCTION	PRESSURE	FLOW Cv		POWER	SOLENOID ENCLOSURES			
		PSI (bar)	INLET	EXHAUST	(watts)	PLATED STEEL HOUSING	HIGH PERFORMANCE 430 STAINLESS STEEL	STAINLESS STEEL 316L WITH JUNCTION BOX	
NORTH AMERICA  CSA UL 1/2" NPT Conduit Hub (female)	3-Way Normally Closed	0-200 (14.0)	0.022	0.022	8.5 to 10.5	E5SM-3301-22-XXL4-(**)	E5SM-3301-22-XXE4-(**)	—	
		0-150 (10.0)	0.06	0.106		E5SM-3301-34-XXL4-(**)	E5SM-3301-34-XXE4-(**)		
		0-100 (6.9)	0.106	0.106	E5SM-3301-44-XXL4-(**)	E5SM-3301-44-XXE4-(**)			
		0-60 (4.1)	0.21	0.106	E5SM-3301-64-XXL4-(**)	E5SM-3301-64-XXE4-(**)			
		0-120 (8.3)	0.022	0.06	1.8	E5SM-3301-23-XXN4-(**)	E5SM-3301-23-XXJ4-(**)		
		0-60 (4.1)	0.06	0.06		E5SM-3301-33-XXN4-(**)	E5SM-3301-33-XXJ4-(**)		
	3-Way Normally Open	5-150 (0.3-10)	0.06	3.3	8.5 to 10.5	E5QE-30304-316-XXL4-(**)	E5QE-30304-316-XXE4-(**)	—	
		5-150 (0.3-10)	0.06	8.8		E5QE-50304-316-XXL4-(**)	E5QE-50304-316-XXE4-(**)		
		5-100 (0.3-6.9)	0.106	3.3	E5QE-30404-316-XXL4-(**)	E5QE-30404-316-XXE4-(**)			
		5-100 (0.3-6.9)	0.106	8.8	E5QE-50404-316-XXL4-(**)	E5QE-50404-316-XXE4-(**)			
		5-120 (0.3-8.3)	0.022	3.3	1.8	E5QE-30203-316-XXN4-(**)	E5QE-30203-316-XXJ4-(**)		
		5-120 (0.3-8.3)	0.022	8.8		E5QE-50203-316-XXN4-(**)	E5QE-50203-316-XXJ4-(**)		
(d)Flameproof M20 Conduit Hub (female)	3-Way Normally Closed	0-200 (14.0)	0.022	0.022	8.5 to 10.5	E5SM-3301-22-XNL4-(**)	E5SM-3301-22-XNE4-(**)	—	
		0-150 (10.0)	0.06	0.106		E5SM-3301-34-XNL4-(**)	E5SM-3301-34-XNE4-(**)		
		0-100 (6.9)	0.106	0.106	E5SM-3301-44-XNL4-(**)	E5SM-3301-44-XNE4-(**)			
		0-60 (4.1)	0.21	0.106	E5SM-3301-64-XNL4-(**)	E5SM-3301-64-XNE4-(**)			
		0-120 (8.3)	0.022	0.06	1.8	E5SM-3301-23-XNN4-(**)	E5SM-3301-23-XNJ4-(**)		
		0-60 (4.1)	0.06	0.06		E5SM-3301-33-XNN4-(**)	E5SM-3301-33-XNJ4-(**)		
	3-Way Normally Open	5-150 (0.3-10)	0.06	3.3	8.5 to 10.5	E5QE-30304-316-XNL4-(**)	E5QE-30304-316-XNE4-(**)	—	
		5-150 (0.3-10)	0.06	8.8		E5QE-50304-316-XNL4-(**)	E5QE-50304-316-XNE4-(**)		
		5-100 (0.3-6.9)	0.106	3.3	E5QE-30404-316-XNL4-(**)	E5QE-30404-316-XNE4-(**)			
		5-100 (0.3-6.9)	0.106	8.8	E5QE-50404-316-XNL4-(**)	E5QE-50404-316-XNE4-(**)			
		5-120 (0.3-8.3)	0.022	3.3	1.8	E5QE-30203-316-XNN4-(**)	E5QE-30203-316-XNJ4-(**)		
		5-120 (0.3-8.3)	0.022	8.8		E5QE-50203-316-XNN4-(**)	E5QE-50203-316-XNJ4-(**)		
North America 1/2" NPT female conduit hub (integral junction box)  CSA, ATEX, IECx, & INMETRO	3-Way Normally Closed	0-200 (13.8)	0.022	0.06	1.8	—	—	E4SM-3301-23-XDBT9-(**)	
		0-175 (12.1)	0.06	0.106		E4SM-3301-34-XDBT9-(**)			
		0-125 (8.6)	0.106	0.106	E4SM-3301-44-XDBT9-(**)				
		0-75 (5.2)	0.21	0.106	E4SM-3301-64-XDBT9-(**)				
		5-120 (0.3-8.3)	0.022	3.3	1.8	—	—	E4QE-30203-316-XDBT9-(**)	
		5-120 (0.3-8.3)	0.022	8.8		E4QE-50203-316-XDBT9-(**)			
	5-60 (0.3-4.1)	0.106	3.3	E4QE-30303-316-XDBS9-(**)					
	5-60 (0.3-4.1)	0.106	8.8	E4QE-50303-316-XDBS9-(**)					
	3-Way Normally Open	0-150 (10.3)	0.022	0.022	1.8	—	—	E4SM-3302-22-XDBT1-H2-(**)	
		0-100 (6.9)	0.06	0.06		E4SM-3302-33-XDBT1-H2-(**)			
		0-75 (5.2)	0.106	0.106	E4SM-3302-44-XDBT1-H2-(**)				
		0-50 (3.4)	0.21	0.106	E4SM-3302-64-XDBT1-H2-(**)				
WORLD (d)Flameproof (e)Increased Safety M20 female conduit hub (integral Junctionbox)  CSA, ATEX, IECx, & INMETRO		3-Way Normally Closed	0-200 (13.8)	0.022	0.06	1.8	—	—	E4SM-3301-23-XDBS9-(**)
			0-175 (12.1)	0.06	0.106		E4SM-3301-34-XDBS9-(**)		
	0-125 (8.6)		0.106	0.106	E4SM-3301-44-XDBS9-(**)				
	0-75 (5.2)		0.21	0.106	E4SM-3301-64-XDBS9-(**)				
	5-120 (0.3-8.3)		0.022	3.3	1.8	—	—	E4QE-30203-316-XDBS9-(**)	
	5-120 (0.3-8.3)		0.022	8.8		E4QE-50203-316-XDBS9-(**)			
	5-60 (0.3-4.1)	0.106	3.3	E4QE-30303-316-XDBS9-(**)					
	5-60 (0.3-4.1)	0.106	8.8	E4QE-50303-316-XDBS9-(**)					
	3-Way Normally Open	0-150 (10.3)	0.022	0.022	1.8	—	—	E4SM-3302-22-XDBT1-H2-(**)	
		0-100 (6.9)	0.06	0.06		E4SM-3302-33-XDBT1-H2-(**)			
		0-75 (5.2)	0.106	0.106	E4SM-3302-44-XDBT1-H2-(**)				
		0-50 (3.4)	0.21	0.106	E4SM-3302-64-XDBT1-H2-(**)				

\* Part numbers shown are 1/4" NPT ported valves; for 1/8" NPT ports change seventh character in the part number from 3 to 2 example (E5SM-3302 to E5SM-3202)

\*\* Exclude voltage code (see top of page 27) † For Intrinsic Safe solenoids (see page 26).



# BODYPORTED VALVES Direct Acting

## Direct Acting Materials



### Materials

Valve Body:	430F Stainless steel	Screws (valve to actuator):	Stainless steel
Valve Seals:	Plunger and body – FKM (fluorocarbon) Valve/actuator – mounting O-rings –NBR (nitrile)	Solenoid Parts:	Sleeve, plunger & spring – 304, 430F & 302 stainless steel Coil Cover– solenoid housing: per solenoid option selected



E4SM-3201-22-XDBT9-D024



E5SM-3201-34-XXE4-D024

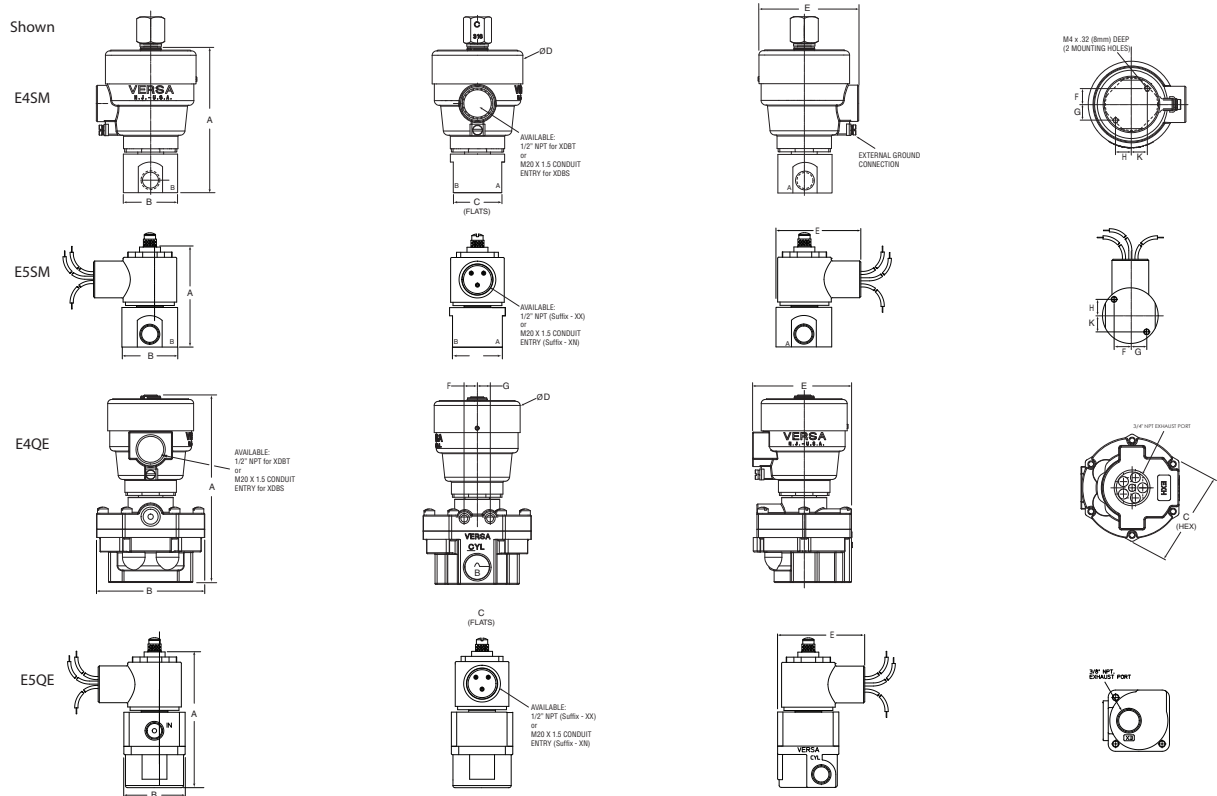


E4QE-50203-316-XDBT9-D024



E5QE-30304-316-XXL4-D024

## Direct Acting Dimensions



### DIMENSIONS

Ports		A	B	C	Ø D	E	F	G	H	K
E4SM	1/8" NPT	Inch 3.87	1	—	2.5	2.75	0.3	0.3	0.2	0.2
	mm 98.2	25.4	—	63.5	69.9	7.5	7.5	5.2	5.2	
E4SM	1/4" NPT	Inch 4.03	1.5	1.34	2.5	2.75	0.44	0.44	—	—
	mm 102.4	38.1	34.0	63.5	69.9	11.2	11.2	—	—	
E5SM	1/8" NPT	Inch 2.54	1	—	—	2.23	0.3	0.3	0.2	0.2
	mm 64.5	25.4	—	—	56.6	7.5	7.5	5.2	5.2	
E5SM	1/4" NPT	Inch 2.71	1.5	1.34	—	2.26	0.44	0.44	—	—
	mm 68.8	38.1	34.0	—	57.4	11.2	11.2	—	—	
E4QE	1/4" NPT Inlet & Outlet	Inch 5.45	—	2.75	2.69	0.38	0.38	2.85	—	—
	3/4" NPT Exhaust	mm 138.5	—	69.9	75.2	9.5	9.5	72.4	—	—
E5QE	1/4" NPT Inlet & Outlet	Inch 3.81	1.75	—	—	2.39	—	—	—	—
	3/8" NPT Exhaust	mm 97	44.5	—	—	60.7	—	—	—	—

# BODYPORTED VALVES

STAINLESS STEEL CONSTRUCTION

## SERIES D-316 3-Way Directing Acting Valve

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 valve. It is a “bubble tight” valve throughout its complete operating range and cycle life.

It is 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. 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. Reducing installation cost and labor.

### Integral Junction Box

O-Ring sealing for solenoid enclosure provides a fully weather protected solenoid and integral junction box. Ratings of IP66/67/68 rating and NEMA 6P ( prolonged submersion) assures long trouble free life in wet environments. A high temperature rated terminal strip is included simplifying and protecting wiring connections.

### 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.



DSM-3301-316-M-XDDT-D024  
DSM-3301-316-M5R-XDDT-D024



DSM-3301-316-XDDT-356BN-D024

### 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 175psi (vac to 12 bar)
Flow:	0.8 Cv
Temperature:	+4°F to 194°F (-20°C to 90°C) -40°F to 194°F (-40°C to 90°C), low temp buna option -44
	For lower temperature consult factory
Port size:	¼" NPT

Voltage/Power:	Voltage	Power	Ordering code		
			DC	AC 60 Hz	AC 50 Hz
	12 VDC	2.6 watts	-D012	—	—
	24 VDC		-D024	—	—
	125 VDC		-D125	—	—
	110/120 VAC	3.1 watts	—	-A120	-E110
	220/240 VAC		—	-A240	-E220

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.

# BODYPORTED VALVES D316

## The D-316 Series Dimensions



### Solenoid Type

Solenoid Type	Suffix Number	Rating	Agency	Connection
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 cCSA <sub>US</sub>	M20
World Solenoid 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 cCSA <sub>US</sub>	½" NPT

For other "T" ratings consult factory

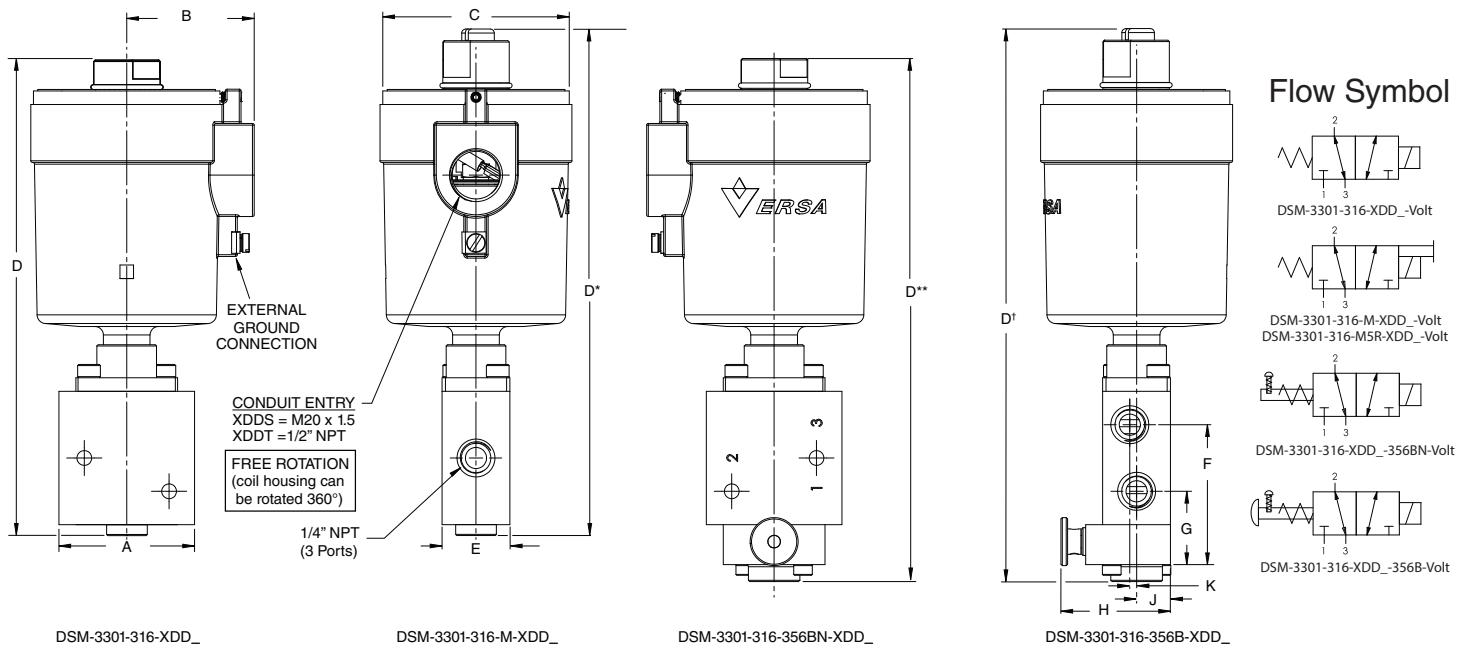
### Valve Type - Options

Valve Type & Options	Part Number	Weight
Solenoid Operated-Spring return	DSM-3301-316-XDD*-(**)	5.1 lbs (2.3 kg)
Solenoid Operated-Spring return with Non-locking override	DSM-3301-316-M-XDD*-(**)	5.2 lbs (2.4 kg)
Solenoid Operated-Spring return with Locking override	DSM-3301-316-M5R-XDD*-(**)	5.2 lbs (2.4 kg)
Solenoid Operated-Spring return with Latching reset	DSM-3301-316-XDD*-356BN-(**)	5.4 lbs (2.4 kg)
Solenoid Operated-Spring return with Latching reset and manual button	DSM-3301-316-XDD*-356B-(**)	5.6 lbs (2.5 kg)

\* 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 left.

### Dimensions



	A	B	C Ø	D	D*	D**	D†	E	F	G	H	J	K
DSM-3301-316-XDD_-Volts	2 50.8	1.87 47.5	2.83 71.9	7 177.8	—	—	—	1 25.4	2.06 52.3	1.08 27.5	—	0.5 12.7	0.10 2.54
DSM-3301-316-M-XDD_-Volts	2 50.8	1.87 47.5	2.83 71.9	—	7.5 190.5	—	—	1 25.4	2.06 52.3	1.08 27.5	—	0.5 12.7	0.10 2.54
DSM-3301-316-356B-XDD_-Volts	2 50.8	1.87 47.5	2.83 71.9	—	—	7.7 196	—	1 25.4	2.06 52.3	1.08 27.5	1.62 41	0.5 12.7	0.10 2.54
DSM-3301-316-356BN-XDD_-Volts	2 50.8	1.87 47.5	2.83 71.9	—	—	—	8.16 207.3	1 25.4	2.06 52.3	1.08 27.5	1.62 41	0.5 12.7	0.10 2.54

# BODYPORTED VALVES

ALUMINUM CONSTRUCTION

## SERIES C5,C7 & C9 Bodyported 3-Way\*/4-Way Solenoid Valves

### General Description

Versa C5, C7 and C9 valves are 5 port/2-position or 5 port/3-position, high flow, bodyported, solenoid/pilot valves. They can be provided with single or double solenoid actuators. Manual override (guarded-push to operate, turn to lock) is standard on all models. Other options are available. Actuator positioning is possible with the use of 3-position valves since all C5, C7 and C9 valves are leak free/bubbletight.



The standard valve is supplied with DIN style coil, but other options are available making the most exacting and demanding specifications or applications easy to satisfy.

### Materials

Valve Body and Plunger:	Anodized aluminum
Actuating Caps:	Solenoid – anodized aluminum spring cap – synthetic resin
Pilot Piston:	synthetic resin
Valve Seals:	Plunger and body – FKM (fluorocarbon) Pilot piston – NBR (nitrile)
Screws:	Stainless steel
Solenoid Parts:	Sleeve, plunger & spring – 304 & 430F stainless steel Coils – epoxy molded with 3 spade terminals (std), or 2 or 3 wire leads (opt). Coil cover (opt.-when applicable) plated steel

### Operating Pressure

Valve Type	Size Series	Operating Pressure Range† Pneumatic
Single Solenoid/spring return (2-Position)	C5	15-115 psi(1-8 bar)
	C7	25-115 psi(1.7-8 bar)
	C9	30-150 psi (2.1-10.3 bar)
Double Solenoid/detented (2-Position)	C5	10-115 psi(0.7-8 bar)
	C7	15-115 psi(1-8 bar)
	C9	20-150 psi(1.4-10.3 bar)
Double Solenoid/spring centered (3-position)	C5	15-115 psi(1-8 bar)
	C7	25-115 psi(1.7-8 bar)
	C9	30-150 psi (2.1-10.3 bar)

† Pressure ranges may change based on solenoid option.  
For higher pressure applications, consult factory.

### Port Size

Inlet, outlet and exhaust	C5	1/8 NPT or G1/8-Series
	C7	1/4 NPT or G1/4-Series
	C9	1/2 NPT or G1/2-Series

### Flow Rates

Inlet, outlet and exhaust	Cv	
	C5	0.75
	C7	1.5
	C9	4.1

### Options Suffix

Manual Override:	Standard on basic valves, guarded-push to operate, turn to lock.
-CML:	unguarded-push to operate, twist to lock
For solenoid options see page 25 - 29	

### Installation, Filtration and Lubrication

Valves:	No limitations on mounting orientation.
Filter:	40 to 50 micron
Lubrication:	General purpose lubricating oil ISO, ASTM viscosity grade 32

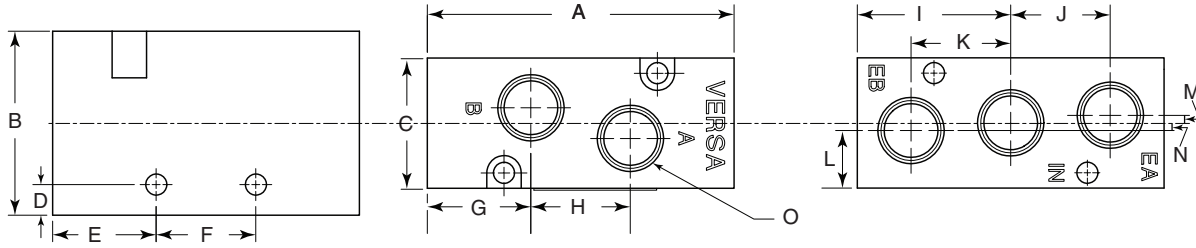
## C5/C7/C9 Bodyported Valve Product Number Selector

				Basic Valve Number*			
FUNCTION*	SIZE SERIES	PORT SIZE	Cv	SINGLE SOLENOID/SPRING RETURN, 2-POSITION	DOUBLE SOLENOID/DETENT, 2-POSITION	DOUBLE SOLENOID/SPRING CENTERED, 3-POSITION	
						Blocked Center	Exhaust Ports open
3-Way 5/2 & 5/3	C5	1/8 NPT G1/8"	0.75	CSG-4222-†-(coil code)	CGG-4222-†-(coil code)	CXX-4223-†-(coil code)	CXX-4224-†-(coil code)
			0.75	CSG-4282-†-(coil code)	CGG-4282-†-(coil code)	CXX-4283-†-(coil code)	CXX-4284-†-(coil code)
	C7	1/4" NPT G1/4	1.5	CSG-4322-†-(coil code)	CGG-4322-†-(coil code)	CXX-4323-†-(coil code)	CXX-4324-†-(coil code)
			1.5	CSG-4382-†-(coil code)	CGG-4382-†-(coil code)	CXX-4383-†-(coil code)	CXX-4384-†-(coil code)
	C9	1/2" NPT G1/2	4.1	CSG-4522-†-(coil code)	CGG-4522-†-(coil code)	CXX-4523-†-(coil code)	CXX-4524-†-(coil code)
			4.1	CSG-4582-†-(coil code)	CGG-4582-†-(coil code)	CXX-4583-†-(coil code)	CXX-4584-†-(coil code)

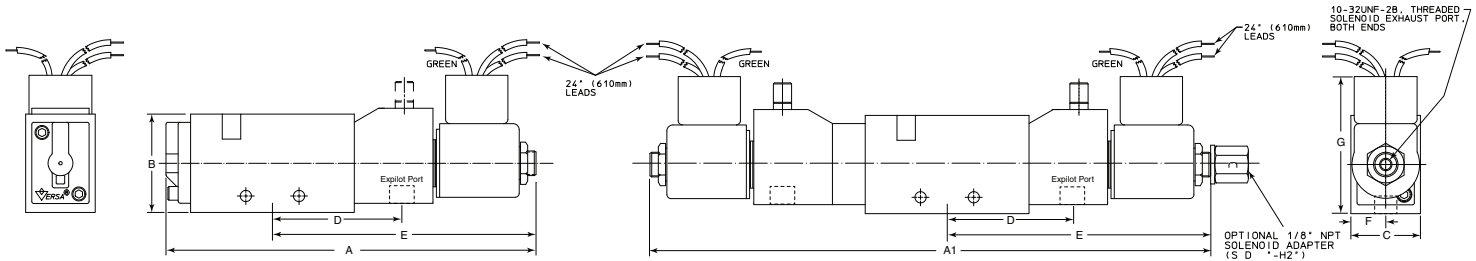
\* 3-Way valve can be obtained by plugging one port of a 4-Way. For 3-Way NC plug port B (4); for 3-Way NO plug port A (2) For coil code see top of page 27.  
† Add suffix here, if required.

# BODYPORTED VALVES

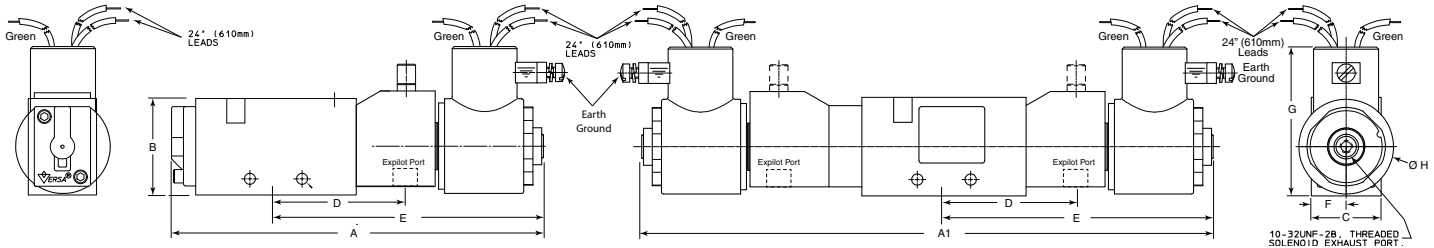
## C5, C7 & C9 Dimensions



SIZE	NPT		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
C5	1/8"	inch	1.87	1.25	0.88	0.25	0.63	0.63	0.61	0.66	0.94	0.63	0.63	0.44	0.06	0.06	1/8" NPT
		mm	47.6	31.8	22.2	6.4	15.9	15.9	15.5	16.7	23.8	15.9	15.9	11.1	1.5	1.5	G1/8
C7	1/4"	inch	2.5	1.5	1.06	0.25	0.84	0.81	0.84	0.81	1.25	0.81	0.81	0.53	0.06	0.06	1/4" NPT
		mm	63.5	38.1	26.9	6.35	21.3	20.6	21.3	21.3	32	20.6	20.6	13.5	1.5	1.5	G1/4
C9	1/2"	inch	4	2.25	1.75	0.38	1.38	1.25	1.38	1.25	2	1.25	1.25	0.88	0.13	0.13	1/2" NPT
		mm	101.6	57	44	9.5	35	32	35	32	50.8	32	32	22.4	3.2	3.2	G1/2



SIZE	NPT		A	A1	B	C	D	E	F	G	H
C5	1/8"	inch	5.03	7.92	1.25	0.88	1.69	3.71	0.38	2.11	0.63
		mm	127.7	201.2	31.8	22.4	42.8	94.2	9.5	53.5	15.9
C7	1/4"	inch	5.65	8.55	1.50	1.06	2.00	4.02	0.47	2.23	0.75
		mm	143.6	217.1	38.1	27.0	50.8	102.2	11.8	56.7	19.1
C9	1/2"	inch	7.45	11.03	2.32	1.75	3	5.02	1	2.23	.89
		mm	189	280.2	58.9	44	76.2	127.5	25.4	56.6	22.5



SIZE	NPT		A	A1	B	C	D	E	F	G	Ø H
C5	1/8"	inch	5.10	7.92	1.25	0.88	1.69	3.71	0.38	2.11	1.44
		mm	129.5	201.2	31.8	22.4	42.8	94.2	9.5	53.5	1.44
C7	1/4"	inch	5.72	8.69	1.50	1.06	2.00	4.09	0.47	2.23	1.44
		mm	145.2	220.7	38.1	27.0	50.8	103.8	11.8	56.7	1.44
C9	1/2"	inch	7.53	11.18	1.73	2	3	5.09	1	2.4	1.44
		mm	191	284	43.9	50.8	76.2	129.2	25.4	61	1.44

**NOTE:** VALVES SUPPLIED WITH G THREADS HAVE PORTS MARKED AS FOLLOWS: IN=1, A=2, EA=3, B=4, EB=5

# BODYPORTED VALVES

BRASS CONSTRUCTION

## SERIES V Bodyported 3-Way & 4-Way Solenoid Valves

### General Description



Versa Series V valves are full flow valves, available in 1/8, 1/4, 3/8, 1/2, 3/4 and 1" NPT port sizes. Ports of 1/8 to 1/2 ISO 228 "G" threads are also available. Three-way designs are provided with 3 ports; four-way designs have 5 ports. Each is available for 2-position or 3-position service. Standard size O-ring seals provide bubbletight sealing and ease of service.

Each valve is solenoid/pilot actuated, which enables the use of physically small solenoids providing low power consumption, and also assures a strong positive shifting force without fear of coil burn-out. A complete selection of electrical connections, area classifications, and power requirements makes the most exacting and demanding specifications or applications easy to satisfy.

### Materials

Valve Body:	Forged brass
Internal parts (wetted):	Rod brass
Actuating Caps:	Solenoid – forged brass spring cap – diecast aluminum
Valve Seals:	NBR (nitrile), standard size O-rings
Screws:	Screws: zinc plated steel
Solenoid Parts:	Sleeve, plunger & spring – 304 & 430F stainless steel Coils – epoxy molded with 3 spade terminals (std), or 2 or 3 wire leads (opt). Coil cover (opt.-when applicable) plated steel

### PortSize

Inlet, outlet and exhaust	1/8" NPT or G1/8-Series 1/4" NPT or G1/4-Series 1/2" NPT or G1/2-Series 3/4" NPT 1" NPT
---------------------------	---

## Series V Bodyported Valve Product Number Selector

		BASIC VALVE NUMBER					
Function	Port Size (NPT)*	Flow Cv	Single Solenoid/Spring Return 2-Position	Double Solenoid/Momentary Contact 2-Position	Double Solenoid/Spring Centered 3-position		
					Blocked Center	Exhaust Ports Open	
3-Way, 3/2 Normally Closed	1/8"	1.4	VSG-3221-U-(coil code)	VGG-3221-U-(coil code)	VXX-3223-U-(coil code)		
	1/4"	1.8	VSG-3321-U-(coil code)	VGG-3321-U-(coil code)	VXX-3323-U-(coil code)		
	3/8"	3.4	VSG-3421-U-(coil code)	VGG-3421-U-(coil code)	VXX-3423-U-(coil code)		
	1/2"	4.0	VSG-3521-U-(coil code)	VGG-3521-U-(coil code)	VXX-3523-U-(coil code)		
	3/4"	9.7	VSG-3621-U-(coil code)	VGG-3621-U-(coil code)	VXX-3623-U-(coil code)		
3-Way, 3/3 Three Position	1"	11.1	VSG-3721-U-(coil code)	VGG-3721-U-(coil code)	VXX-3723-U-(coil code)		
3-Way, 3/2 Normally Open	1/8"	1.4	VGS-3222-U-(coil code)	SEE ABOVE	SEE ABOVE		For coil code see top of page 27.
	1/4"	1.8	VGS-3322-U-(coil code)				
	3/8"	3.4	VGS-3422-U-(coil code)				
	1/2"	4.0	VGS-3522-U-(coil code)				
	3/4"	9.7	VGS-3622-U-(coil code)				
3-Way, 3/3 Three Position	1"	11.1	VGS-3722-U-(coil code)				
4-Way, 5/2 & 5/3	1/8"	1.4	VSG-4222-U-(coil code)	VGG-4222-U-(coil code)	VXX-4223-U-(coil code)	VXX-4224-U-(coil code)	
	1/4"	1.8	VSG-4322-U-(coil code)	VGG-4322-U-(coil code)	VXX-4323-U-(coil code)	VXX-4324-U-(coil code)	
	3/8"	3.4	VSG-4422-U-(coil code)	VGG-4422-U-(coil code)	VXX-4423-U-(coil code)	VXX-4424-U-(coil code)	
	1/2"	4.0	VSG-4522-U-(coil code)	VGG-4522-U-(coil code)	VXX-4523-U-(coil code)	VXX-4524-U-(coil code)	
	3/4"	9.7	VSG-4622-U-(coil code)	VGG-4622-U-(coil code)	VXX-4623-U-(coil code)	VXX-4624-U-(coil code)	
	1"	11.1	VSG-4722-U-(coil code)	VGG-4722-U-(coil code)	VXX-4723-U-(coil code)	VXX-4724-U-(coil code)	

\* Valves with ISO 228 "G" threads have same Cv flow factors as corresponding NPT port sizes. To indicate model number of valves with "G" thread, add suffix "-2B" to basic valve number shown. For example: VSG-3221-U becomes VSG-3221-U-2B.

### Operating Pressure

Valve Type	Port Size	Operating Pressure Range† (Pneumatic)
Single Solenoid/spring return (2-Position)	1/8, 1/4, 3/8 or 1/2	40-175 psi (2.8-12 bar)
	3/4 or 1	50-175 psi (3.5-12 bar)
Double Solenoid/momentary contact (2-Position)	1/8, 1/4, 3/8 1/2, 3/4 or 1	20-175 psi (1.4-12 bar)
Double Solenoid/spring centered (3-position)	1/8, 1/4, 3/8 or 1/2	40-175 psi (2.8-12 bar)
	3/4 or 1	50-175 psi (3.5-12 bar)

### Installation, Filtration and Lubrication

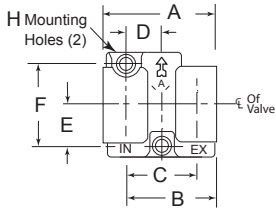
Valves:	No limitations on mounting orientation.
Filtration:	40 to 50 micron
Lubrication:	General purpose lubricating oil ISO, ASTM viscosity grade 32

# BODYPORTED VALVES

## Bodyported Series V Dimensions†



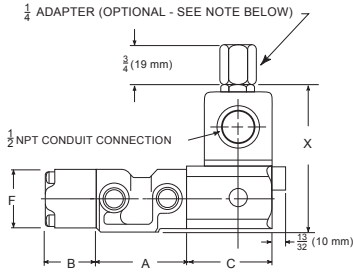
### THREE-WAY



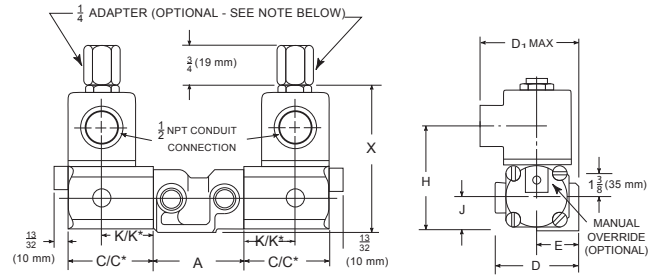
### BODY DETAIL

SIZE NPT or G	A		B		C		D		E		F		HØ	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/8 - 1/4	2 <sup>3</sup> / <sub>16</sub>	56	1 <sup>3</sup> / <sub>4</sub>	44	1 <sup>5</sup> / <sub>16</sub>	33	2 <sup>1</sup> / <sub>32</sub>	17	5 <sup>1</sup> / <sub>64</sub>	20	1 <sup>19</sup> / <sub>32</sub>	40	.256	6.5
3/8 - 1/2	3 <sup>3</sup> / <sub>4</sub>	95	2 <sup>7</sup> / <sub>8</sub>	73	2	51	1	25	1 <sup>1</sup> / <sub>8</sub>	29	2 <sup>1</sup> / <sub>4</sub>	57	.328	8
3/4 - 1	5 <sup>1</sup> / <sub>2</sub>	140	4 <sup>1</sup> / <sub>2</sub>	108	3	76	1 <sup>1</sup> / <sub>2</sub>	38	1 <sup>9</sup> / <sub>16</sub>	40	3 <sup>3</sup> / <sub>8</sub>	79	.390	10

### SINGLE SOLENOID



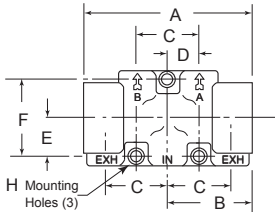
### DOUBLE SOLENOID



SIZE NPT or G	A		B		C		C*		D1		D		E		F		H		J		K		K*		X	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/8 - 1/4	2 <sup>3</sup> / <sub>16</sub>	56	1 <sup>7</sup> / <sub>32</sub>	31	2 <sup>3</sup> / <sub>32</sub>	53	3	76	2 <sup>1</sup> / <sub>2</sub>	64	2	51	1	25	1 <sup>1</sup> / <sub>2</sub>	38	2 <sup>19</sup> / <sub>32</sub>	66	1 <sup>13</sup> / <sub>16</sub>	21	1 <sup>9</sup> / <sub>32</sub>	33	2 <sup>3</sup> / <sub>16</sub>	56	3 <sup>13</sup> / <sub>16</sub>	97
3/8 - 1/2	3 <sup>3</sup> / <sub>4</sub>	95	1 <sup>7</sup> / <sub>32</sub>	31	2 <sup>3</sup> / <sub>32</sub>	53	3	76	2 <sup>7</sup> / <sub>8</sub>	73	2 <sup>3</sup> / <sub>4</sub>	70	1 <sup>3</sup> / <sub>8</sub>	35	1 <sup>11</sup> / <sub>16</sub>	43	2 <sup>21</sup> / <sub>32</sub>	67	7 <sup>7</sup> / <sub>8</sub>	22	1 <sup>9</sup> / <sub>32</sub>	33	2 <sup>3</sup> / <sub>16</sub>	56	3 <sup>7</sup> / <sub>8</sub>	98
3/4 - 1	5 <sup>1</sup> / <sub>2</sub>	140	2 <sup>1</sup> / <sub>16</sub>	52	2	51	3 <sup>15</sup> / <sub>32</sub>	88	3 <sup>3</sup> / <sub>8</sub>	86	3 <sup>3</sup> / <sub>4</sub>	95	1 <sup>7</sup> / <sub>8</sub>	48	2 <sup>7</sup> / <sub>16</sub>	62	3 <sup>39</sup> / <sub>32</sub>	99	1 <sup>1</sup> / <sub>4</sub>	32	1	25	2 <sup>1</sup> / <sub>2</sub>	64	5 <sup>5</sup> / <sub>32</sub>	131

\*Dimensions for Spring-Centering Valves. NOTE: Adapter is supplied when specified by adding suffix "-H" to product number

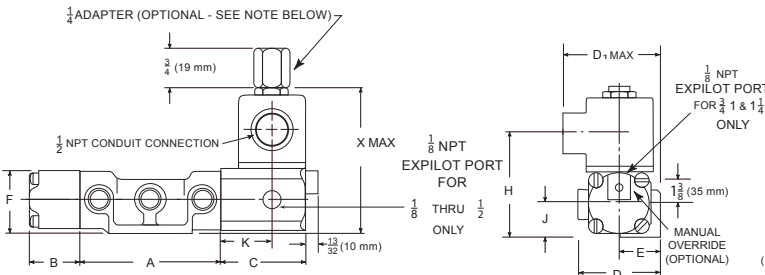
### FOUR-WAY



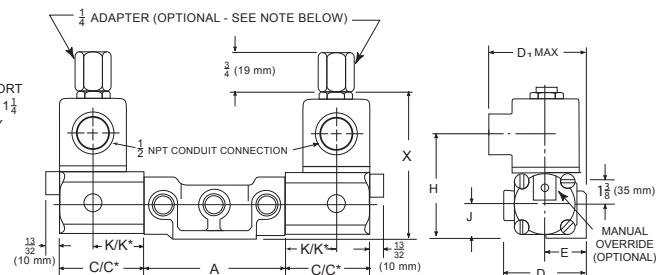
### BODY DETAIL

SIZE NPT or G	A		B		C		D		E		F		HØ	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/8 - 1/4	3 <sup>1</sup> / <sub>2</sub>	89	1 <sup>3</sup> / <sub>4</sub>	44	1 <sup>5</sup> / <sub>16</sub>	33	2 <sup>1</sup> / <sub>32</sub>	17	5 <sup>1</sup> / <sub>64</sub>	20	1 <sup>19</sup> / <sub>32</sub>	40	.256	6.5
3/8 - 1/2	5 <sup>3</sup> / <sub>4</sub>	146	2 <sup>7</sup> / <sub>8</sub>	73	2	51	1	25	1 <sup>1</sup> / <sub>8</sub>	29	2 <sup>1</sup> / <sub>4</sub>	57	.328	8
3/4 - 1	8 <sup>1</sup> / <sub>2</sub>	216	4 <sup>1</sup> / <sub>2</sub>	108	3	76	1 <sup>1</sup> / <sub>2</sub>	38	1 <sup>9</sup> / <sub>16</sub>	40	3 <sup>3</sup> / <sub>8</sub>	79	.390	10

### SINGLE SOLENOID



### DOUBLE SOLENOID



SIZE NPT or G	A		B		C		C*		D1		D		E		F		H		J		K		K*		X	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/8 - 1/4	3 <sup>1</sup> / <sub>2</sub>	89	1 <sup>7</sup> / <sub>32</sub>	31	2 <sup>3</sup> / <sub>32</sub>	53	3	76	2 <sup>1</sup> / <sub>2</sub>	64	2	51	1	25	1 <sup>1</sup> / <sub>2</sub>	38	2 <sup>19</sup> / <sub>32</sub>	66	1 <sup>13</sup> / <sub>16</sub>	21	1 <sup>9</sup> / <sub>32</sub>	33	2 <sup>3</sup> / <sub>16</sub>	56	3 <sup>13</sup> / <sub>16</sub>	97
3/8 - 1/2	5 <sup>3</sup> / <sub>4</sub>	146	1 <sup>7</sup> / <sub>32</sub>	31	2 <sup>3</sup> / <sub>32</sub>	53	3	76	2 <sup>7</sup> / <sub>8</sub>	73	2 <sup>3</sup> / <sub>4</sub>	70	1 <sup>3</sup> / <sub>8</sub>	35	1 <sup>11</sup> / <sub>16</sub>	43	2 <sup>21</sup> / <sub>32</sub>	67	7 <sup>7</sup> / <sub>8</sub>	22	1 <sup>9</sup> / <sub>32</sub>	33	2 <sup>3</sup> / <sub>16</sub>	56	3 <sup>7</sup> / <sub>8</sub>	98
3/4 - 1	8 <sup>1</sup> / <sub>2</sub>	216	2 <sup>1</sup> / <sub>16</sub>	52	2	51	3 <sup>15</sup> / <sub>32</sub>	88	3 <sup>3</sup> / <sub>8</sub>	86	3 <sup>3</sup> / <sub>4</sub>	95	1 <sup>7</sup> / <sub>8</sub>	48	2 <sup>7</sup> / <sub>16</sub>	62	3 <sup>39</sup> / <sub>32</sub>	99	1 <sup>1</sup> / <sub>4</sub>	32	1	25	2 <sup>1</sup> / <sub>2</sub>	64	5 <sup>5</sup> / <sub>32</sub>	131

\*Dimensions for Spring-Centering Valves. NOTE: Adapter is supplied when specified by adding suffix "-H" to product number  
 †Dimensions shown are for basic valve as listed on previous page. Some options may change the dimensions, for which consult factory.

# BODYPORTED VALVES

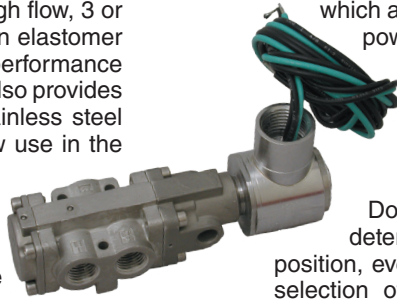
STAINLESS STEEL CONSTRUCTION

## SERIES C-316 Bodyported 3-Way & 4-Way Solenoid Valves

### General Description

Versa Series C-316 stainless steel valve is a high flow, 3 or 5 port solenoid valve that utilizes a fluorocarbon elastomer seal packed plunger that provides bubbletight performance with long, trouble-free product life. The design also provides the highest flow in the smallest package. Stainless steel bodies, actuating caps and internal parts allow use in the most aggressive environments.

The C-316 Series is available as 4-Way, for double acting devices, or 3-Way for spring return devices. The 3-Way function can be specified as either normally open or normally closed. All solenoid actuators are solenoid/pilot type,



which allows the use of small solenoids resulting in low power consumption. Solenoid/pilots also provide a positive shifting force that assures the valve shifts, thus reducing the chance of coil burnout. Single solenoid-spring return models utilize an air assisted return feature assuring a positive return.

Double solenoid models are equipped with a detent that maintains the valve in the last shifted position, even in high vibration environments. A complete selection of electrical connections, power requirements and area classifications makes the Versa C-316 the valve of choice for demanding applications.

### Materials

Valve Body and Plunger:	316L stainless steel
Actuating Caps:	316L stainless steel
Pilot Piston:	316L stainless steel
Valve Seals:	Plunger and body – FKM (fluorocarbon)
Screws:	Stainless steel
Solenoid Parts:	Sleeve, plunger & spring – 304 & 430F stainless steel Coils – solenoid housing: per solenoid option selected

### PortSize

Inlet, outlet and exhaust	1/4" NPT
---------------------------	----------

### Flow Rates

Inlet, outlet and exhaust	Cv 2.0
---------------------------	-----------

### Options

Manual Override	-ME; unguarded-push to operate, twist to lock
-----------------	---

### Operating Pressures

Valve Type	Operating Pressure Range Pneumatic
Single Solenoid-Spring Return	25 to 150 psi (1.8 to 10.3 bar)
Single Solenoid-Latching 3-Way	25 to 150 psi (1.8 to 10.3 bar)
Double Solenoid-Detented	15 to 150 psi (1.0 to 10.3 bar)

### Installation and Filtration

Valves:	No limitations on mounting orientation.
Filtration:	40 to 50 micron

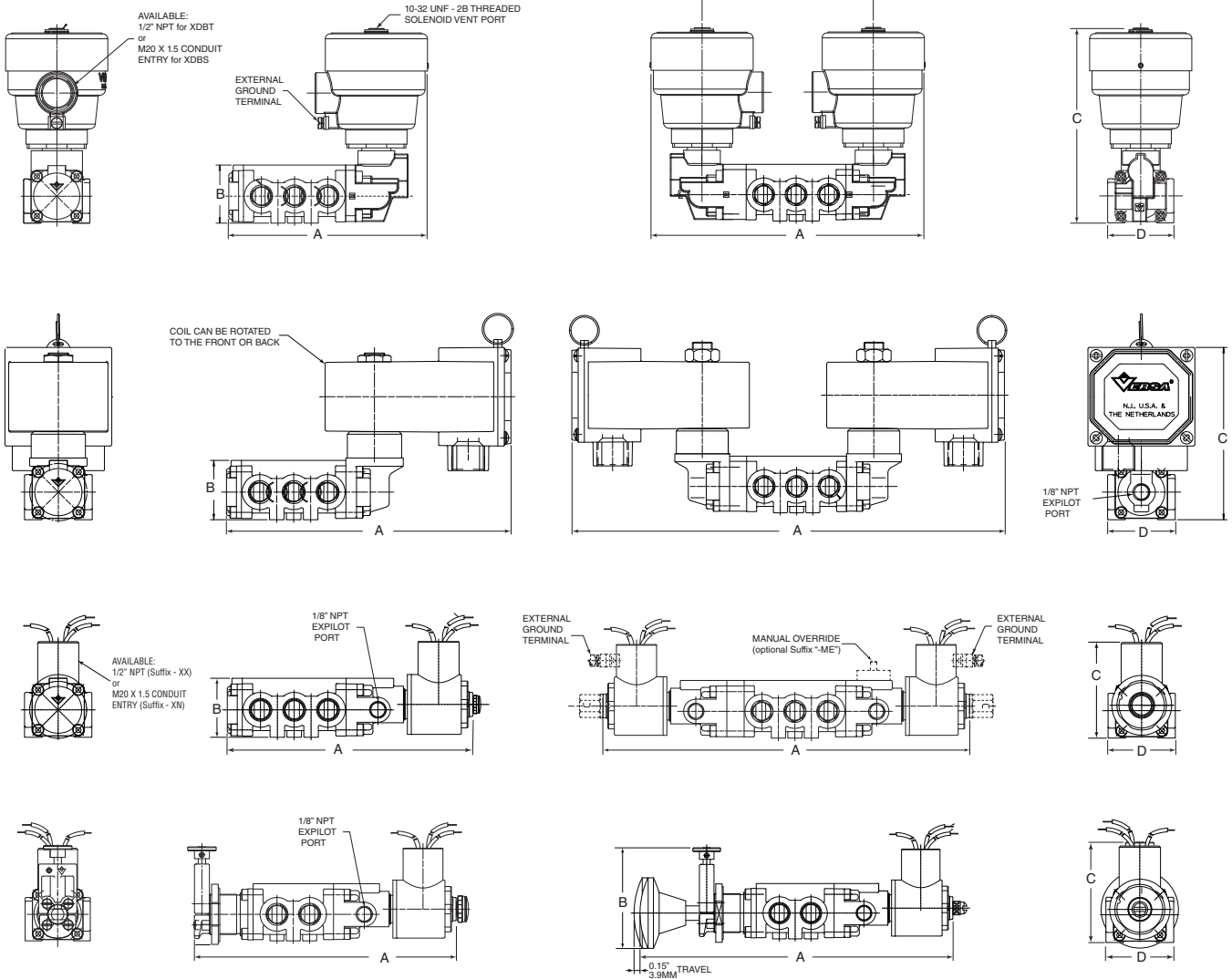
### Series C-316 BODYPORTED VALVE Product Number Selector

Basic Valve Number				
FUNCTION	SINGLE SOLENOID/SPRING RETURN, 2-POSITION	DOUBLE SOLENOID DETENT, 2-POSITION	LATCHING, SINGLE SOLENOID SPRING RETURN (no Button)	LATCHING, SINGLE SOLENOID SPRING RETURN (with Button)
4-Way 5/2	CSG-4322-316-†(coil code) 	CGG-4322-316-†(coil code) 	CAG-4322-316-356BN-†(coil code) 	CAG-4322-316-356B-†(coil code) 
3-Way NC 3/2	CSG-3321-316-†(coil code) 	CGG-3321-316-†(coil code) 	CAG-3321-316-356BN-†(coil code) 	CAG-3321-316-356B-†(coil code) 
3-Way NO 3/2	CGS-3322-316-†(coil code) 	CGG-3321-316-†(coil code) 	CGA-3322-316-356BN-†(coil code) 	CGA-3322-316-356B-†(coil code) 

† Add suffix option here (see page 25). For coil code (see top of page 27)



### Dimensions



Dimensions		SOLENOID OPTIONS															
		GENERAL SERVICE				HAZARDOUS SERVICE											
						(-XX, -XN, -XISC*, -XISX6*)				(-XMA_, -XIF_)				(XDB_)			
VALVE TYPE		A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
3-Way Single Solenoid, Spring Return †	Inches (mm)	5.31 (135.0)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	5.41 (137.5)	1.44 (36.6)	2.30 (58.5)	1.62 (41.1)	6.81 (173)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	4.36 (110.7)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
4-Way Single Solenoid, Spring Return †	Inches (mm)	5.81 (147.7)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	5.91 (150.2)	1.44 (36.6)	2.30 (58.5)	1.62 (41.1)	6.81 (173)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	4.86 (123)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
3-Way Double Solenoid, Detented †	Inches (mm)	8.33 (211.6)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	8.53 (216.8)	1.44 (36.6)	2.30 (58.5)	1.62 (41.1)	10.33 (262.4)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	6.42 (163)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
4-Way Double Solenoid, Detented †	Inches (mm)	8.83 (221.3)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	9.03 (229.5)	1.44 (36.6)	2.30 (58.5)	1.62 (41.1)	10.83 (275.0)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	6.92 (175.8)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
3-Way Solenoid, Latching (-356NB)	Inches (mm)	6.41 (162.9)	1.42 (36.1)	2.34 (59.4)	1.62 (41.1)	6.51 (165)	1.44 (36.6)	2.34 (59.4)	1.62 (41.1)	7.41 (188.2)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	5.46 (138.5)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
4-Way Solenoid, Latching (-356NB)	Inches (mm)	6.87 (174.5)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	7.0 (177.8)	2.37 (60)	2.34 (59.4)	1.62 (41.1)	7.92 (201.2)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	5.96 (151.4)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
3-Way Solenoid, Latching (-356B)	Inches (mm)	8.9 (226)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	8.04 (204)	2.6 (65.7)	2.34 (59.4)	1.62 (41.1)	8.95 (227.3)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	7.0 (177.8)	1.42 (36.1)	5.1 (130)	1.62 (41.1)
4-Way Solenoid, Latching (-356B)	Inches (mm)	9.4 (238.8)	1.42 (36.1)	2.13 (54.2)	1.62 (41.1)	8.54 (216.9)	2.6 (65.7)	2.34 (59.4)	1.62 (41.1)	9.45 (240)	2.56 (65)	4.13 (104.8)	1.62 (41.1)	7.5 (190.5)	1.42 (36.1)	5.1 (130)	1.62 (41.1)

\* For "A" dimension (-XISC, -XISX6) deduct 0.96" (24.4mm). For "C" deduct 0.54" (13.7mm).

† For dimensions -XDA\_ consult factory

# BODYPORTED VALVES

STAINLESS STEEL CONSTRUCTION

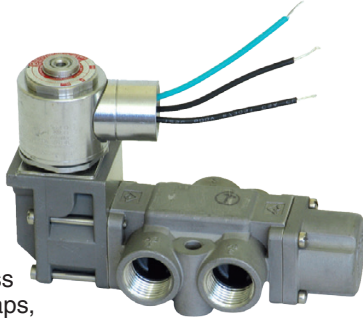
## SERIES V-316 Bodyported 3-Way and 4-Way Solenoid Valves

### General Description

Versa Series V-316 valves are available in 1/4", 3/8", 1/2" and 1" NPT port sizes. Three-way designs are provided with 3 ports; four-way valves 5 ports. 1/4" - 1/2" are available as 2 or 3-position valves. 1" 2-position only.

Investment cast 316L stainless steel bodies and actuating caps, coupled with 316 stainless steel internals makes this valve series compatible for use with aggressive media and environments.

Each valve is solenoid/pilot actuated, which enables the use of physically small solenoids and resultant low power consumption, and also assures a large positive shifting force without fear of coil burnout. A complete selection of electrical connections, area classifications, and power requirements makes the most exacting and demanding specifications or applications easy to satisfy



### Materials

Valve Body:	316L stainless steel
Internal parts (wetted):	316 stainless steel
Actuating Caps:	316 stainless steel
Valve Seals:	FKM (fluorocarbon)
Screws:	stainless steel
Solenoid Parts:	Sleeve, plunger & spring – 304 & 430F stainless steel Coils – epoxy molded with 3 spade terminals (std), or 2 or 3 wire leads (opt). Coil cover (opt.-when applicable) plated steel

### PortSize

Inlet, outlet and exhaust	1/4" NPT 1/2" NPT 3/4" NPT 1" NPT
---------------------------	--

## Series V-316 Bodyported Valve Product Number Selector

### BASIC VALVE NUMBER

Function	Port Size (NPT)	Flow Cv	Single Solenoid/Spring Return, 2-Position	Double Solenoid/Momentary Contact 2-Position	Double Solenoid/Spring Centered 3-position	
					Blocked Center	Exhaust Ports Open
3-Way, 3/2 Normally Closed	1/4"	1.8	VSG-3321-316-*	VGG-3321-316-*		—
	3/8"	2.0	VSG-3421-316-*	VGG-3421-316-*		
	1/2"	5.5	VSG-3521-316-*	VGG-3521-316-*		
	1"	11.1	VSG-3721-316-*	VGG-3721-316-*		
3-Way, 3/3 Three Position	1/4"	1.8			VXX-3323-316- VXX-3423-316- VXX-3523-316-	—
	3/8"	2.0				
	1/2"	5.5				
3-Way, 3/2 Normally Open	1/4"	1.8	VGS-3322-316-*	SEE ABOVE	—	—
	3/8"	2.0	VGS-3422-316-*			
	1/2"	5.5	VGS-3522-316-*			
	1"	11.1	VGS-3722-316-*			
3-Way, 3/3 Three Position	1/4"	1.8		—	SEE ABOVE	—
	3/8"	2.0				
	1/2"	5.5				
4-Way, 5/2 & 5/3	1/4"	1.8	VSG-4322-316-*	VGG-4322-316-*		VXX-4324-316- VXX-4424-316- VXX-4524-316-
	3/8"	2.0	VSG-4422-316-*	VGG-4422-316-*		
	1/2"	5.5	VSG-4522-316-*	VGG-4522-316-*		
	1"	11.1	VSG-4722-316-*	VGG-4722-316-*		

\* Add coil code to valve number (see top of page 27).

Nonhazardous location operators - (page 26) Hazardous Location operators - (Page 26/29)  
For other coil voltages consult factory.

### Operating Pressure

Valve Type	Port Size	Operating Pressure Range <sup>1</sup> (Pneumatic)
Single Solenoid/spring return (2-Position)	1/4, 3/8 & 1/2 NPT	40-175 psi (2.8-12 bar)
	1 NPT	50-175 psi (3.5-12 bar)
Double Solenoid/momentary contact (2-Position)	1/4, 3/8 1/2, 3/4 & 1 NPT	20-175 psi (1.4-12 bar)
Double Solenoid/spring centered (3-position)	1/4, 3/8 & 1/2 NPT	40-175 psi (2.8-12 bar)

### Installation and Filtration

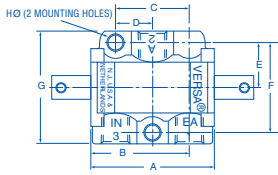
Valves:	No limitations on mounting orientation.
Filtration:	40 to 50 micron

# BODYPORTED VALVES

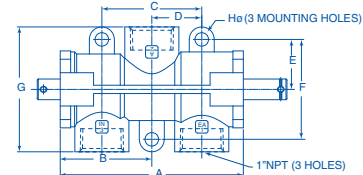
## Bodyported Series V-316 Dimensions†



### THREE-WAY



1/4" - 1/2" NPT Body

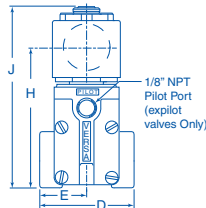
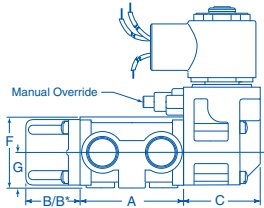


1" NPT Body

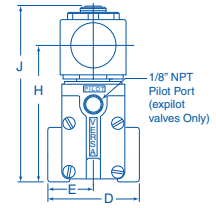
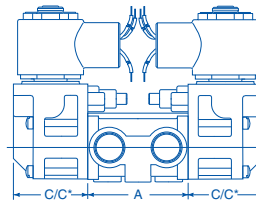
#### BODY DETAIL

SIZE NPT	A		B		C		D		E		F		G		H Ø	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/4" - 3/8"	2.19	56	1.75	45	1.31	33	0.66	17	.80	20	1.59	40	2	51	0.27	6.7
1/2"	2.84	95	2.08	52.8	1.31	33	0.66	17	.80	20	1.59	40	2.5	63.5	0.27	6.7
1"	5.5	140	3.25	82.6	3.0	76	1.5	38.1	1.5	40	3.0	6.2	3.38	85.7	0.4	1.2

### SINGLE SOLENOID



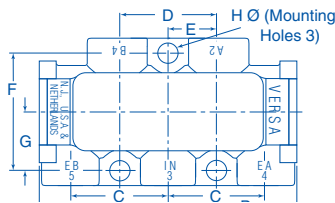
### DOUBLE SOLENOID



SIZE NPT	A		B		B*		C		C*		D		E		F		G		H		J	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/4" - 3/8"	2.19	55.6	1.15	29.2	1.76	45.1	1.62	41.3	2.54	64.6	2	51	1.0	25.4	3.89	97.4	0.75	19.1	3.83	97.4	2.98	75.7
1/2"	2.84	72.1	1.15	29.2	1.76	45.1	1.62	41.3	2.54	64.6	2.5	63.5	1.25	31.8	3.89	97.4	0.75	19.1	3.83	97.4	2.98	75.7
1"	5.5	139.7	2.01	51	—	—	2.01	51	—	—	3.75	95.3	1.88	47.6	5.17	131.3	4.29	109	5.17	131.3	4.29	109

\*Dimensions for Spring-Centering Valves. NOTE: Adapter is supplied when specified by adding suffix "-H2" to product number.

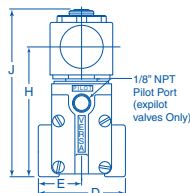
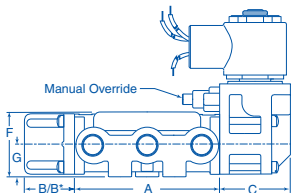
### FOUR-WAY



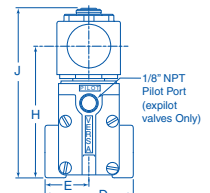
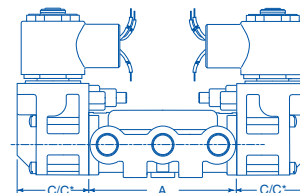
#### BODY DETAIL

SIZE NPT	A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/4" - 3/8"	3.5	89	1.75	44.5	1.31	33.3	1.32	33.5	0.66	16.7	1.56	39.6	0.80	20.2
1/2"	4.0	101.6	2.0	51	1.31	33.3	1.32	33.5	0.66	16.7	1.56	39.6	0.80	20.2
1"	8.5	216	4.25	108	3	76.2	3	76.2	1.5	38.1	3.75	95.2	1.88	47.8

### SINGLE SOLENOID



### DOUBLE SOLENOID



SIZE NPT	A		B		B*		C		C*		D		E		F		G		H		J	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1/4" - 3/8"	3.50	88.9	1.15	29.2	1.84	47	1.62	41.3	2.54	64.6	2	51	1.0	25.4	1.56	39.6	0.75	19	2.98	75.7	3.83	97.4
1/2"	4.0	101.6	1.15	29.2	1.84	47	1.62	41.3	2.54	64.6	2.5	63.5	1.25	31.8	1.56	39.6	0.75	19	2.98	75.7	3.83	97.4
1"	8.5	216	2	50.8	—	—	2	50.8	—	—	2.3	58.4	1.16	29.5	2.47	62.7	1.16	29.5	6.9	175.3	5.14	130.5

\*Dimensions for Spring-Centering Valves. NOTE: Adapter is supplied when specified by adding suffix "-H2" to product number.

†Dimensions shown are for basic valve as listed on previous page. Some options may change the dimensions, for which consult factory.

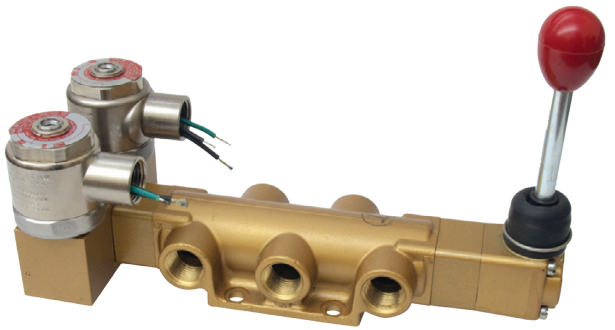
# SPECIAL PURPOSE DUAL SOLENOID VALVES

BRASS OR STAINLESS STEEL CONSTRUCTION

## Push Pull Solenoid Suffix-PPG

### General Description

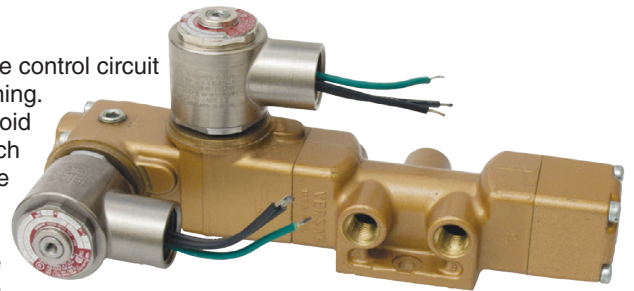
A dual solenoid valve with a hand lever. The design concept is to provide the functionality of a, dual coil, 2-position valve with the addition of manual control or any other actuator. The valve operates as standard 2-position requiring only momentary electrical contact to shift valve. Various manual actuators are available. The lever shown is a "L" type which can be manually set in either offset position when the solenoid valve is de-energized.



## Redundant Solenoid 2oo2, Suffix -RS

### General Description

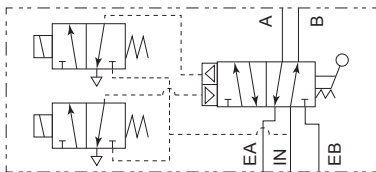
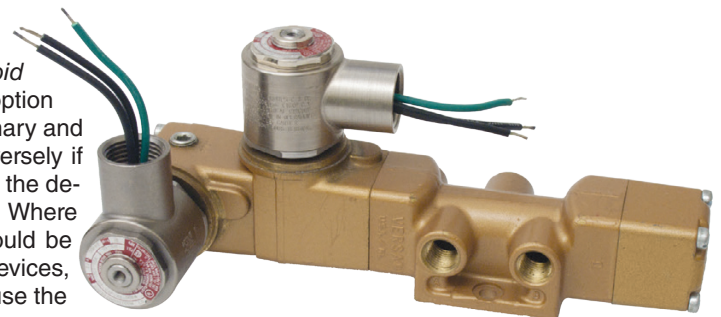
When parallel electronic control circuits are utilized in a system, if a complete control circuit fails or requires maintenance, the parallel circuit will keep the system running. In a parallel circuit Versa's Redundant Valve functions the same as a solenoid operated-spring return valve, except that it has two solenoids (one for each of the parallel circuits) rather than one solenoid. Either or both of these solenoids will shift and maintain the controlled device in the shifted position. Both solenoids must be de-energized to return the controlled device to the un-shifted position. The use of one Redundant Valve can replace multiple valves and components to accomplish the same function. This function can be considered as a (2oo2).



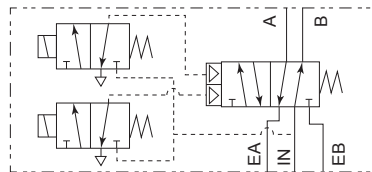
## Shut Off Valve 1oo2, Suffix -SOV

### General Description

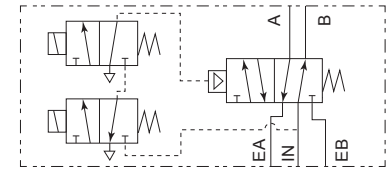
While the *Shut off Valve* looks similar to the *Redundant Solenoid Valve* (shown above) the internal pilot circuit is different. The -SOV option provides a series pilot control circuit that requires both coils, a primary and a secondary, to be energized in order for the valve to shift. Conversely if the electrical signal to either coil is removed the valve will return to the de-energized position. This function can be considered as a (1oo2). Where various control devices (e.g., temperature, pressure switches) could be wired in series with each coil. The actuation of any one of these devices, attached to either coil, would interrupt the signal to the coil and cause the valve to shift to the de-energized position.



-PPG Flow Schematic



-RS Flow Schematic



-SOV Flow Schematic

Types Available	SERIES V	SERIES 316
<b>Media:</b>	Pneumatic Service	Pneumatic Service
<b>Pressure:</b>	50 to 175 psi (3.5 to 12 bar)†	40 to 175 psi (2.8 to 12 bar)†
<b>Construction Material:</b>	Forged & machined brass; NBR (nitrile) O-ring seals	Investment cast & machined 316 stainless steel, FKM (fluorocarbon) seals
<b>Functional Types:</b>	3-Way, normally closed 4-Way, 2-Position	3-Way, normally closed 4-Way, 2-Position
<b>Port Sizes &amp; Flow:</b>	1/8" NPT or G1/8 Cv = 1.4 1/4" NPT or G1/4 Cv = 1.8 3/8" NPT or G3/8 Cv = 3.4 1/2" NPT or G1/2 Cv = 4.0	1/4" NPT Cv = 1.8 3/8" NPT Cv = 2.0 1/2" NPT Cv = 5.5
<b>Actuation:</b>	Solenoid/pilot-spring return (2 solenoids per valve), for either ordinary or hazardous service.	Solenoid/pilot-spring return (2 solenoids per valve), for either ordinary or hazardous service.

# SPECIAL PURPOSE DUAL SOLENOID VALVES



## How to specify SPECIAL PURPOSE DUAL SOLENOID VALVES

V = V Series brass or stainless steel.  
See page 14 for Series V,  
page 18 for Series V-316.

LA = -PPG with Lever  
IA = -PPG with Button  
AA = -PPG with Latch, see page 22  
SA = -RS -SOV with Spring Return  
AA = -RS -SOV with Latch, see page 22

3 = Three-way  
4 = Four-way

2 = 1/8"NPT (Series V<sup>\*\*</sup>)  
3 = 1/4"NPT (Series V<sup>\*\*</sup>) or V-316  
4 = 3/8"NPT (Series V<sup>\*\*</sup>) or V-316  
5 = 1/2"NPT (Series V<sup>\*\*</sup>) or V-316

2 = Threaded sideports-INPilot solenoid: no auxiliary pilot required.

1 = 3-Way NC  
2 = 3-Way NO, 4-Way/2-Position  
3 = 4-Way/3-Position (blocked center)  
4 = 4-Way/3-Position (exhaust ports open in center)

Add "316" for stainless steel valves. Leave blank for brass valves

SPECIAL PURPOSE DUAL SOLENOID VALVES SUFFIX  
-RS  
-SOV  
-PPG

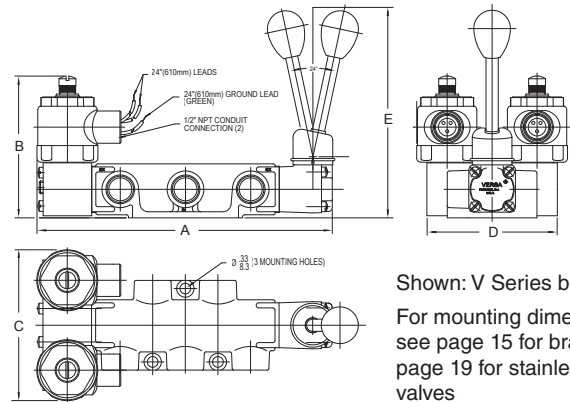
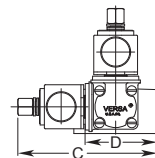
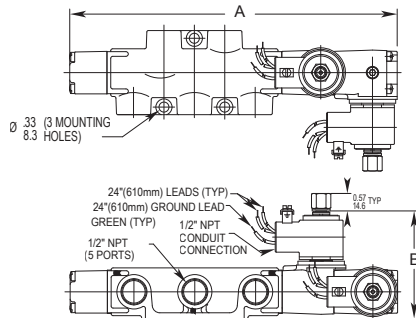
OPTIONS (Refer to pages 25 -29 for specific certifications, standards & classifications, approvals, protective codes and voltage codes.)

\*\* Valves with ISO 228 "G" Threads are designated by utilizing suffix "-2B" in model number.

Installation, Filtration And Lubrication Valves have no limitations on mounting orientation. 40 to 50 micron filtration and general purpose lubricating oil ISO, ASTM viscosity grade 32 recommended. Ambient temperature range -10°F (-23°C) to 200°F (95°C).

V SA - 3 5 2 1 - 316 - RS (OPTIONS)

## Dimensions



Shown: V Series brass.  
For mounting dimensions see page 15 for brass and page 19 for stainless steel valves

		SERIES V					
		SIZE	A	B <sup>†</sup>	C <sup>†</sup>	D	E
R S or S O V	3 W A	1/8 & 1/4	in 7.2	3.45	3.66	2	—
			mm 183	88	93	51	—
	4 W A	3/8 & 1/2	in 8.78	3.43	4.18	2.76	—
			mm 223	87.2	106.1	70	—
	3 W A	1/8 & 1/4	in 6.8	4	4.6	2	6.4
			mm 173	103.5	117.5	50.8	161.9
P P G	3 W A	1/8 & 1/4	in 7.05	4.35	4.62	2.75	6.45
			mm 179	110.4	117.4	69.9	163.9
4 W A	3 W A	1/8 & 1/4	in 6.81	3.80	4.62	2	6.4
			mm 173	96.6	117.4	50.8	161.9
P P G	4 W A	3/8 & 1/2	in 9	4.35	4.62	2.75	6.45
			mm 230	110.4	117.4	69.9	163.9

		SERIES 316						
		SIZE	A	B <sup>†</sup>	C <sup>†</sup>	D	E	
R S or S O V	3 W A	1/4 & 3/8	in 7.04	4.04	—	2	—	
			mm 178.8	102.6	—	50.8	—	
	4 W A	1/2	in 6.99	4.4	—	2.5	—	
			mm 178	112	—	63.5	—	
	3 W A	1/4 & 3/8	1/4 & 3/8	in 7.04	4.04	—	2	—
				mm 178.8	102.6	—	50.8	—
P P G	4 W A	1/2	in 6.99	4.4	—	2.5	—	
			mm 178	112	—	63.5	—	
3 W A	1/4 & 3/8	1/4 & 3/8	in 6.3	3.8	4.63	2	6.32	
			mm 161	96.7	117.5	50.8	161	
P P G	3 W A	1/2	in 6.18	3.74	4.63	2.5	6.32	
			mm 167	95	117.5	63.5	161	
4 W A	1/4 & 3/8	1/4 & 3/8	in 6.84	3.74	4.63	2	6.32	
			mm 173.7	95	117.5	50.8	161	
P P G	4 W A	1/2	in 7.32	4.07	4.63	2.5	6.32	
			mm 186	103.5	117.5	63.5	161	

† Dimensions listed are for -XX type hazardous service solenoids. For dimensions with other hazardous service solenoids that can be applied, consult factory.

Dimensions for standard non-hazardous service solenoids will be slightly less than those listed.

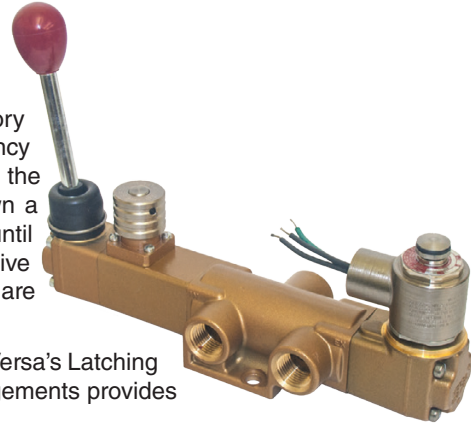
# LATCHING/MANUAL RESET VALVES

BRASS OR STAINLESS STEEL CONSTRUCTION

## General Description

Latching valves are particularly suited to applications where it is desirable or mandatory to manually reset or restart a system. A typical application could involve the emergency shutdown of automatically monitored process operations. Loss or interruption of the control signal to the valve actuator causes the valve to shift, latch and shut-down a process step. When the signal is restored the valve remains in the latched position until the operator manually unlatches it and allows the process step to resume. Positive latching in such an application is vitally important since many process operations are sequential and one step must not be started until the one ahead of it has started.

This example is only one of many which can be accommodated through the use of Versa's Latching Valves. A wide range of functional types, port sizes, actuators, and latching arrangements provides the engineer with a complete choice of valving to suit his particular needs.



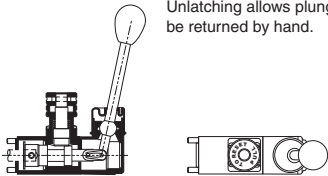
## Types Available

	Series V	Series V-316
<b>Media</b>	Pneumatic; others, consult factory.	Pneumatic and various other gases, including corrosives.
<b>Pressure: (minimum depends on size and type)</b>	20 or 55 to 175 psi (1.4 or 3.8 to 12 bar)	20 or 55 to 175 psi (1.4 or 3.8 to 12 bar)
<b>Construction Materials</b>	Forged & machined brass; NBR (nitrile) O-ring seals	Investment cast & machined 316 stainless steel; FKM (fluorocarbon) seals
<b>Functional Type</b>	3-Way normally closed 3-Way normally open 3-Way 3-Position 4-Way 2 & 3-Position	3-Way normally closed 3-Way normally open 3-Way 3-Position 4-Way 2 & 3-Position
<b>Body Style</b>	Bodyported	Bodyported
<b>Port Sizes &amp; Flow</b>	1/8" NPT or G1/8 Cv = 1.4 1/4" NPT or G1/4 Cv = 1.8 3/8" NPT or G3/8 Cv = 3.4 1/2" NPT or G1/2 Cv = 4.0 3/4" NPT Cv = 9.7 1" NPT Cv = 11.1	1/4" NPT Cv = 1.8 3/8" NPT Cv = 2.0 1/2" NPT Cv = 5.5 1" NPT Cv = 11.1
<b>Actuation</b>	Solenoid/pilot for either ordinary service or hazardous service.	Solenoid/pilot for either ordinary service or hazardous service.

## LATCHES IN ACTUATED POSITION

Suffix: V Brass "-181B"  
V-316 "-181BE"

Latches automatically when plunger shifts on signal. Unlatching allows plunger to be returned by hand.



## Latching/Reset Devices For Series V or V-316 Valves

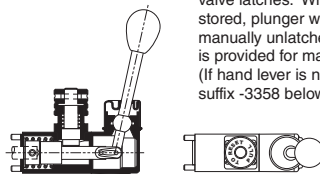
The Latching Device actuator consists of the latch, with or without an integral spring for returning the valve plunger, and an inline hand operator where needed to manually shift the valve.

The specific Latching Device may be attached to any Series "V" valve body size or style up to 1" NPT or any Series V-316 valve body up to 1/2" NPT, as indicated for the type of latching/reset device required. The actuator on the opposite end of the valve body would be a solenoid/pilot device.

## LATCHES IN UN-ACTUATED POSITION

Suffix: V Brass "-181D"  
V-316 "-181D"

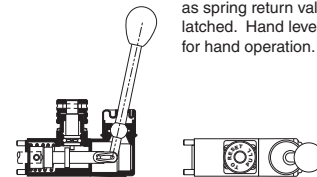
Unlatching allows plunger to shift on signal. If signal is lost, spring shifts plunger automatically and valve latches. When signal is restored, plunger will not shift until manually unlatched. Hand lever is provided for manual operation. (If hand lever is not required see suffix -3358 below.)



## LATCHES IN EITHER POSITION

Suffix: V Brass "-181A"  
V-316 "-181AAE"

(2-position latch) Valve may be manually latched in either offset position or left unlatched. Acts as spring return valve when not latched. Hand lever is provided for hand operation.



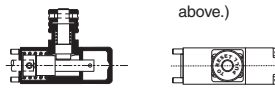
Suffix: V Brass "-181C"  
V-316 "-181CE"

Latches automatically when plunger shifts on signal. Unlatching allows spring to reset plunger automatically. Hand lever provided for manual operation. (If hand lever is not required see suffix -3358A below.)



Suffix: V Brass "-3358"  
V-316 "-3358AAE"

Unlatching allows plunger to shift on signal. Spring returns plunger automatically and valve latches. (If hand lever is required for manual actuation see suffix -181D above.)



Suffix: V Brass "-3358A"  
V-316 "-3358AE"

Latches automatically when plunger shifts on signal. Unlatching allows spring to reset plunger automatically. (If hand lever is required for manual actuation see suffix -181C above.)



# LATCHING/MANUAL RESET VALVES



## How to specify LATCHING/RESET VALVES

V AG - 3 5 2 1 - 181B - (OPTIONS)

V = Pneumatic service: nominal 20 to 175 psi (1.4 - 12 bar); pressure range may vary depending upon specific valve type. See page 14 for Series V, page 18 for Series V-316.

AG=Solenoid/pilot operated for 3-Way NC or 4-Way  
GA=Solenoid/pilot operated for 3-Way NO

3 = Three-way  
4 = Four-way

2 = 1/8"NPT (Series V\*)  
3 = 1/4"NPT (Series V\* or V-316)  
4 = 3/8"NPT (Series V\* or V-316)  
5 = 1/2"NPT (Series V\* or V-316)  
6 = 3/4"NPT (Series V)  
7 = 1"NPT (Series V or V-316\*\*)

\*\*1" V-316 Latching valve available, consult factory for part number

2 = Threaded sideports-INPilot solenoid: no auxiliary pilot required.

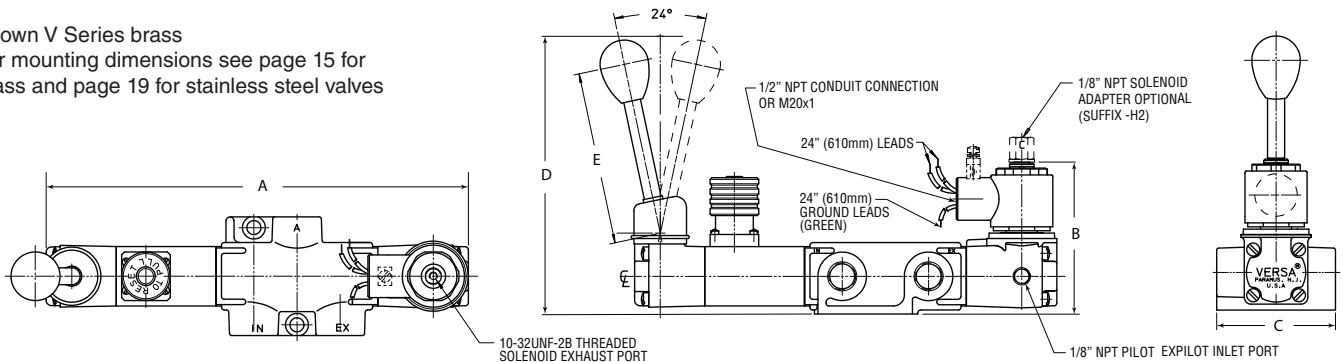
1 = 3-Way NC  
2 = 3-Way NO, 4-Way/2-Position  
3 = 4-Way/3-Position (blocked center)  
4 = 4-Way/3-Position (exhaust ports open in center)

	Series V	Series V-316
Locking Reset Device	181AA	316-181AAE
	181AB	316-181ABE
(refer to page 22 for specific device required)	181B	316-181BE
	181C	316-181CE
	181D	316-181D
	3358	316-3358E
	3358A	316-3358AE

OPTIONS: (Refer to pages 25 -29 for specific certifications, standards & classifications, approvals, protective codes and voltage codes.)

\*Valves with ISO 228 "G" Threads are designated by utilizing suffix "-2B" in model number.

Shown V Series brass  
For mounting dimensions see page 15 for brass and page 19 for stainless steel valves



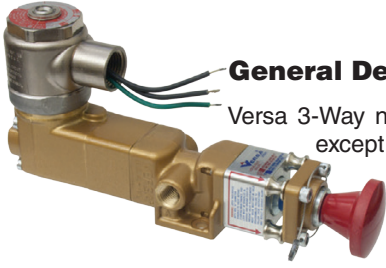
		Series V					
		SIZE	A	B	C	D	E
3 W A Y	1/8 & 1/4	in	8.2	3.44	2	6.37	4
		mm	209	87.5	50.8	162	101.6
	3/8 & 1/2	in	9.8	3.46	2.75	6.4	4
		mm	248.4	87.8	69.9	163.5	101.6
3/4 & 1	in	12.1	4.86	3.75	8.06	9.4	
	mm	307.3	123.5	95.2	204.6	239.5	
4 W A Y	1/8 & 1/4	in	9.53	3.44	2	6.37	4
		mm	242	87.5	50.8	162	101.6
	3/8 & 1/2	in	11.8	3.46	2.75	6.4	4
		mm	299	87.8	69.9	163.5	101.6
3/4 & 1	in	15.1	4.86	3.75	8.06	9.4	
	mm	426	123.5	95.2	204.6	239.5	

		Series V-316					
		SIZE	A	B†	C†	D	E
3 W A Y	1/4 & 3/8	in	77.8	3.83	2	6.3	4
		mm	197.6	97.4	50.8	160.4	101.6
	1/2	in	77.8	3.83	2.5	6.3	4
		mm	197.6	97.4	63.5	160.4	101.6
1	in	13.5	5.14	3.75	8.8	4	
	mm	344	131	95.3	222	101.6	
4 W A Y	1/4 & 3/8	in	9.09	3.83	2	6.3	4
		mm	231	97.4	50.8	160.4	101.6
	1/2	in	9.6	3.83	2.5	6.3	4
		mm	243.7	97.4	63.5	160.4	101.6
1	in	8.5	5.14	3.75	8.8	4	
	mm	215.9	131	95.3	222	101.6	

# LOCKOUT VALVES

BRASS OR STAINLESS STEEL CONSTRUCTION

## 3-Way NC Solenoid Operated/Spring Return Lockout Valves



### General Description

Versa 3-Way normally closed Lockout Valves function the same as a solenoid operated-spring return valve, except that a means is provided to allow the valve to be physically locked with a padlock or hasp with padlock in order to prevent accidental actuation. Two types of lockouts are available: one provides the ability for locking the valve in the de-energized position whereby the inlet is blocked and the exhaust is open; the other type provides the ability for locking in either the de-energized or energized position.

### Types Available

	Series V	Series V-316
<b>Media:</b>	Pneumatic Service	Pneumatic Service
<b>Pressure:</b> (minimum depends on valve size)	40 or 50 to 175 psi (2.8 or 3.5 - 12 bar)	40 to 175 psi (2.8 - 12 bar)
<b>Construction Materials:</b>	Forged & machined brass; NBR (nitrile) O-ring seals	Investment cast & machined 316 stainless steel; FKM (fluorocarbon) seals
<b>Functional Type:</b>	3-Way normally closed	3-Way normally closed
<b>Body Style:</b>	Bodyported	Bodyported
<b>Port Sizes &amp; Flow:</b>	1/8"NPT or G1/8 $C_v = 1.4$ 1/4"NPT or G1/4 $C_v = 1.8$ 3/8"NPT or G3/8 $C_v = 3.4$ 1/2"NPT or G1/2 $C_v = 4.0$ 3/4"NPT $C_v = 9.7$ 1"NPT $C_v = 11.1$	1/4"NPT $C_v = 1.8$ 3/8"NPT $C_v = 2.0$ 1/2"NPT $C_v = 5.5$
<b>Actuation:</b>	Solenoid/pilot-spring return for either Ordinary Service or Hazardous Service	Solenoid/pilot-spring return for either Ordinary Service or Hazardous Service.

## Lockout Valves Product Number Selector

			Series V	Series V-316			OPERATING PRESSURE
FUNCTION	PORT SIZE	FLOW $C_v$	LOCKOUT IN EXHAUST POSITION	LOCKOUT IN EITHER POSITION	LOCKOUT IN EXHAUST POSITION	LOCKOUT IN EITHER POSITION	
3-Way NC	1/8" NPT**	1.4	VIA-3221-138-LOVB-*	VIA-3221-138-LOVE-*	—	—	40-175 psi (2.8-12 bar)
	1/4"NPT**	1.8	VIA-3321-138-LOVB-*	VIA-3321-138-LOVE-*			
	1/4" NPT	1.8			VIA-3321-316-138E-LOVBEE-*	VIA-3321-316-138E-LOVEE-*	
	3/8"NPT**	3.4	VIA-3421-138-LOVB-*	VIA-3421-138-LOVE-*			
	3/8" NPT	2.0			VIA-3421-316-138E-LOVBEE-*	VIA-3421-316-138E-LOVEE-*	
	1/2" NPT**	4.0	VIA-3521-138-LOVB-*	VIA-3521-138-LOVE-*			
	1/2" NPT	5.5			VIA-3521-316-138E-LOVBEE-*	VIA-3521-316-138E-LOVEE-*	
	3/4" NPT	9.7	VIA-3621-138-LOVB-*	VIA-3621-138-LOVE-*	—	—	50-175 psi (3.5-12 bar)
1" NPT	11.1	VIA-3721-138-LOVB-*	VIA-3721-138-LOVE-*	—	—		

\* Add coil code to valve number (see top of page 27).

\*\* Valves with ISO 228 "G" threads are designated by utilizing Suffix -2B in model number.

### Options

Options:  
For solenoid options see pages 25 - 29  
For miscellaneous options see page 29

### Installation, Filtration and Lubrication

Valves have no limitations on mounting orientation.  
40 to 50 micron filtration and general purpose lubricating oil  
ISO, ASTM viscosity grade 32 recommended.



### Hazardous Location Cross Reference Chart

Suffix Reference	
Suffix	Description
-XX	North American solenoid
-XN	ATEX solenoid
-XDB	World Solenoid
-HT	Class H coil
-ST	Stainless solenoid housing
-PC	Potted coil
-LB	1.8 watt solenoid
-LA	0.85 watt solenoid
-VJBT	Add on Junction Box
-D14	Solenoid vent, water proof nut
-PS	Potted coil, male conduit
-CD	72" wire leads
-LX	1.8 watt solenoid
-H2E	1/8" NPT solenoid vent
-HE	1/4" NPT solenoid vent
-L14	Solenoid vent dust nut
-303D	Integral diode

North American (-XX)	
Combination Suffix	Included Suffix
-XXA	-XX, -HT
-XXA4	-XX, -D14, -HT
-XXB	-XX, -PS
-XXB4	-XX, -D14, -PS
-XXC	-XX, -HT, -PS
-XXC4	-XX, -D14, -HT, -PS
-XXD	-XX, -ST
-XXD4	-XX, -D14, -ST
-XXE	-XX, -PC, -ST
-XXE4	-XX, -D14, -PC, -ST
-XXF	-XX, -HT, -ST
-XXF4	-XX, -D14, -HT, -ST
-XXG	-XX, -LB, -ST
-XXG4	-XX, -D14, -LB, -ST
-XXH	-XX, -HT, -PC, -ST

North American (-XX) (Cont.)	
Combination Suffix	Included Suffix
-XXH4	-XX, -D14, -HT, -PC, -ST
-XXJ	-XX, -LB, -PC, -ST
-XXJ4	-XX, -D14, -LB, -PC, -ST
-XXK	-XX, -HT, -LB, -PC, -ST
-XXK4	-XX, -D14, -HT, -LB, -PC, -ST
-XXL	-XX, -PC
-XXL4	-XX, -D14, -PC
-XXM	-XX, -HT, -PC
-XXM4	-XX, -D14, -HT, -PC
-XXN	-XX, -LB, -PC
-XXN4	-XX, -D14, -LB, -PC
-XXP	-XX, -HT, -LB, -PC
-XXP4	-XX, -D14, -HT, -LB, -PC
-XXQ	-XX, -HT, -LB
-XXQ4	-XX, -D14, -HT, -LB
-XXR	-XX, -LB
-XXR4	-XX, -D14, -LB
-XXS	-XX, -LA, -ST
-XXS4	-XX, -D14, -LA, -ST
-XXU	-XX, -HT, -LB, -ST
-XXU4	-XX, -D14, -HT, -LB, -ST
-XXV	-XX, -LA
-XXV4	-XX, -D14, -LA
-XXW	-XX, -CD, -HT, -H2, -PC, -ST
-XXW4	-XX, -D14, -CD, -HT, -PC, -ST

ATEX (XN)	
Combination Suffix	Included Suffix
-XNA	-XN, -HT
-XND	-XN, -ST
-XNE	-XN, -PC, -ST
-XNF	-XN, -HT, -ST
-XNG	-XN, -LB, -ST
-XNH	-XN, -HT, -PC, -ST
-XNJ	-XN, -LB, -PC, -ST
-XNK	-XN, -HT, -LB, -PC, -ST

ATEX (XN) (Cont.)	
Combination Suffix	Included Suffix
-XNL	-XN, -PC
-XNM	-XN, -HT, -PC
-XNN	-XN, -LB, -PC
-XNP	-XN, -HT, -LB, -PC
-XNQ	-XN, -HT, -LB
-XNR	-XN, -LB
-XNS	-XN, -LA, -ST
-XNU	-XN, -HT, -LB, -ST
-XNV	-XN, -LA
-XNX	-XN, -LB, -PS
-XNWS	-XN, -VJBT, -LB, -PS
-XXX4	-XX, -D14, -HT, -LB, -PC, -ST

World Solenoid (XDB)	
Combination Suffix	Included Suffix
-XDBS1	-XDBS, -HT, -LX
-XDBS2	-XDBS, -HT, -LX, -H2E
-XDBS3	-XDBS, -HT, -LX, -HE
-XDBS4	-XDBS, -HT, -LX, -L14
-XDBS5	-XDBS, -HT, -LX, -303D
-XDBS6	-XDBS, -HT, -LX, -H2E, -303D
-XDBS7	-XDBS, -HT, -LX, -HE, -303D
-XDBS8	-XDBS, -HT, -LX, -L14, -303D
-XDBS9	-XDBS, -HT, -LX, -D14
-XDBS10	-XDBS, -HT, -LX, -D14, -303D
-XDBT1	-XDBT, -HT, -LX
-XDBT2	-XDBT, -HT, -LX, -H2E
-XDBT3	-XDBT, -HT, -LX, -HE
-XDBT4	-XDBT, -HT, -LX, -L14
-XDBT5	-XDBT, -HT, -LX, -303D
-XDBT6	-XDBT, -HT, -LX, -H2E, -303D
-XDBT7	-XDBT, -HT, -LX, -HE, -303D
-XDBT8	-XDBT, -HT, -LX, -L14, -303D
-XDBT9	-XDBT, -HT, -LX, -D14
-XDBT10	-XDBT, -HT, -LX, -D14, -303D

\* 1.8 watt solenoid. Also available is 0.85 watt, see cross reference chart above. For 0.50 watt, consult factory.

\*\* All the -XDBT type solenoids are "World Solenoids." Certified for North America, ATEX, IECEx and INMETRO



For option package recommendations see page 29.

# ELECTRICAL OPERATOR SPECIFICATIONS








## SOLENOID PILOT OPERATORS

Solenoid/Pilot actuated valves are available with a variety of different solenoids for both nonhazardous and hazardous locations. Basic details of actuators for hazardous locations are listed below. Details for nonhazardous location actuators are listed on pages 26-29. For additional data consult factory. Product numbers and other details may be found on the appropriate pages for each specific valve type and series

### NONHAZARDOUS LOCATION SOLENOIDS (Inline or upright style)

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	None or -U	General Purpose	Indoor & Outdoor	CSA	NEMA 1,2,3
	-HC -HCC (Shown)	General Purpose	Indoor & Outdoor		NEMA 4; IP65

### HAZARDOUS LOCATION SOLENOIDS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	-XX (see page 29 for option recommendations) -LB-XX (see page 29 for option recommendations)	Hazardous Locations	CLASS I, DIV. 1 (C & D) CLASS I, DIV. 2 (A, B, C & D) CLASS II, DIV. 1 (E, F & G)	UL - CSA	NEMA 7 & 9
	-XN (see page 29 for option recommendations) -LB-XN (see page 29 for option recommendations)	(d) Flameproof	Ex d IIB+H2 T3 to T6 Gb II 2 G Ex d IIB+H2 T3 to T6	IECEX - INMETRO ATEX	P66 & IP68
	-XDBS* -XDBT*	(d) Flameproof (e) Increased Safety	EX II 2 G D Ex de IIC T* Gb EX tb IIIC T* °C Db CI, I Zone 1 AEx de IIC T* CI, II Zone, 21 AEX tD A21, DIP A21 EX II 2 G D Ex de IIC T* Gb EX tb IIIC T* °C Db CI I Grp B, C & D, CI, II Grp E, F & G, CI III CI, I Zone 1 AEx de IIC T*, CI, II Zone, 21 AEX tD A21, DIP A21	ATEX - IECEX -INMETRO cCSA <sub>US</sub> ATEX - IECEX -INMETRO cCSA <sub>US</sub>	IP66, IP67, & IP68 NEMA 4, 4X 6P
<b>*For -XDB_ ordering information see "Miscellaneous" column page 27</b>					
	-XDDS -XDDT	(d) Flameproof (e) Increased Safety	Ex II 2 G D Ex d IIC T4 Gb EX tb IIIC IP66 T4 °C Db CI, I Zone 1, A/Ex d e IIC CI, II, Zone 21, AEX tD A21, T4 °C Ex II 2 G D Ex d IIC T4 Gb EX tb IIIC IP66 T4 °C Db Ex d IIC T4, CI I, Zn 1, AEx d IIC T4 Zone 21, AEX tb IIIC T4 Db CI I Div 1, Grps B, C & D, CI II Div 1 Grps E, F & G CI III T4, CI I Div 2, Grps A, B, C & D T4	ATEX IECEX cCSA <sub>US</sub> ATEX IECEX cCSA <sub>US</sub>	IP66, IP67 IP68 NEMA, 4X IP66
	-XMAA -XMAF -XMFA -XMFF	(mb) Encapsulation (e) Increased Safety (tD) Tight Dust	Ex e mb II T5, T6 Gb Ex tD A21 T100°C, T85°C Db II 2 G Ex e mb II T5, T6 II 2D Ex tD A21 T100°C, T85°C	IECEX ATEX	IP66 & IP67
	-XIFA -XIFF -XISX6	(ia) Intrinsic Safe	Ex (ia) IIC T4...T6 Gb Ex (ia) IIIC T130°C, T80°C Db II 2 G Ex ia IIC T4...T6 II 2 D Ex ia D 21 T130°C, T80°C II 2 G EEx ia IIC T6	IECEX ATEX ATEX	IP65
	-XISC	Intrinsic Safe	Class I, Groups (A, B, C & D) Class II, Groups (E, F, & G) Class III	Factory Mutual CSA	IP65

\*For XDAS or XDAT consult factory

# ELECTRICAL OPERATOR SPECIFICATIONS



<b>COIL CODES:</b> Identify the solenoid frequency and voltage; consisting of a “ <b>Rating Code</b> ” and “ <b>Voltage</b> ” as shown right. Coil codes complete the part number for a solenoid operated valve.	<b>Rating Code</b> A = 60Hz frequency D = Direct Current (DC) E = 50Hz frequency	<b>Voltage</b> Indicated by three digits: e.g. 24 volts = 024 120 volts = 120.	<b>A120 = AC, 120Volts/60hz</b>
--	---	---	---------------------------------







Voltage (Power)	Electrical Characteristics	Miscellaneous																																						
All usual 50 Hz & 60 Hz AC (7.3W) All usual DC (9.5W)	Class F epoxy molded coil (155°C). Continuous duty, 2 leads 24” (60 cm).	Steel cover with 1/2 NPT conduit entry.																																						
24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)	Class F epoxy molded coil (155°C), continuous duty.	Coil connection 3 spade terminals with mini DIN socket available with PG9 cable gland(-HC) or 1/2” NPT conduit hub (-HCC).																																						
Voltage (Power)	Electrical Characteristics	Miscellaneous																																						
All usual 50 Hz & 60 Hz AC (5.6W) All usual DC (7.2W)	Class F epoxy molded coil (155°C). continuous duty. 3 leads 24” (60 cm).	Plated steel coil housing with 1/2 NPT conduit entry. For stainless steel (430 type) coil housing add: (-ST)																																						
12V60, 24V60, 48V60, 120V60, 240V60 (1.8W) 6VDC, 12VDC, 24VDC, 48VDC (1.8W)		Plated steel coil housing with 1/2 NPT conduit entry. For stainless steel (430 type) coil housing add: (-ST) Maximum pilot pressure 120 psi (8 bar). 1.8W nominal power.																																						
All usual 50 Hz & 60 Hz AC (5.6W) All usual DC (7.2W)		Plated steel coil housing with M20 x 1.5 conduit entry. Ground terminal on cover. For stainless steel (430 type) coil housing add: (-ST)																																						
12V60, 24V60, 48V60, 120V60, 240V60 (1.8W) 6VDC, 12VDC, 24VDC, 48VDC (1.8W)		Plated steel coil housing with M20 x 1.5 conduit entry. Ground terminal on cover. For stainless steel (430 type) coil housing add: (-ST) Maximum pilot pressure 120 psi (8 bar) 1.8W nominal power.																																						
24VDC (D024) 120V60 (A120) 110V50 (E110) 230V50 (E230)  1.8 Watt standard, for lower watt contact factory.	Epoxy molded coils rated for continuous duty, Class H – 180°C.	<table border="1"> <thead> <tr> <th rowspan="3" style="background-color: #e0e0e0;">Stainless steel coil housing with internal Junction Box. Internal and external ground screw.</th> <th colspan="4" style="background-color: #e0e0e0;">Suffix Detail Ordering Code</th> </tr> <tr> <th colspan="2" style="background-color: #e0e0e0;">M 20 Connection</th> <th colspan="2" style="background-color: #e0e0e0;">1/2” Connection</th> </tr> <tr> <th style="background-color: #e0e0e0;">No Diode</th> <th style="background-color: #e0e0e0;">Diode</th> <th style="background-color: #e0e0e0;">No Diode</th> <th style="background-color: #e0e0e0;">Diode</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e0e0e0;">Standard (vent to atmosphere)</td> <td style="background-color: #e0e0e0;">XDBS1</td> <td style="background-color: #e0e0e0;">XDBS5</td> <td style="background-color: #e0e0e0;">XDBT1</td> <td style="background-color: #e0e0e0;">XDBT5</td> </tr> <tr> <td style="background-color: #e0e0e0;">1/8” Adapter (-H2E)</td> <td style="background-color: #e0e0e0;">XDBS2</td> <td style="background-color: #e0e0e0;">XDBS6</td> <td style="background-color: #e0e0e0;">XDBT2</td> <td style="background-color: #e0e0e0;">XDBT6</td> </tr> <tr> <td style="background-color: #e0e0e0;">1/4” Adapter (-H2)</td> <td style="background-color: #e0e0e0;">XDBS3</td> <td style="background-color: #e0e0e0;">XDBS7</td> <td style="background-color: #e0e0e0;">XDBT3</td> <td style="background-color: #e0e0e0;">XDBT7</td> </tr> <tr> <td style="background-color: #e0e0e0;">Dust Nut (-L14)</td> <td style="background-color: #e0e0e0;">XDBS4</td> <td style="background-color: #e0e0e0;">XDBS8</td> <td style="background-color: #e0e0e0;">XDBT4</td> <td style="background-color: #e0e0e0;">XDBT8</td> </tr> <tr> <td style="background-color: #e0e0e0;">Dust Nut (-D14)</td> <td style="background-color: #e0e0e0;">XDBS9</td> <td style="background-color: #e0e0e0;">XDBS10</td> <td style="background-color: #e0e0e0;">XDBT9</td> <td style="background-color: #e0e0e0;">XDBT10</td> </tr> </tbody> </table>	Stainless steel coil housing with internal Junction Box. Internal and external ground screw.	Suffix Detail Ordering Code				M 20 Connection		1/2” Connection		No Diode	Diode	No Diode	Diode	Standard (vent to atmosphere)	XDBS1	XDBS5	XDBT1	XDBT5	1/8” Adapter (-H2E)	XDBS2	XDBS6	XDBT2	XDBT6	1/4” Adapter (-H2)	XDBS3	XDBS7	XDBT3	XDBT7	Dust Nut (-L14)	XDBS4	XDBS8	XDBT4	XDBT8	Dust Nut (-D14)	XDBS9	XDBS10	XDBT9	XDBT10
Stainless steel coil housing with internal Junction Box. Internal and external ground screw.	Suffix Detail Ordering Code																																							
	M 20 Connection			1/2” Connection																																				
	No Diode	Diode	No Diode	Diode																																				
Standard (vent to atmosphere)	XDBS1	XDBS5	XDBT1	XDBT5																																				
1/8” Adapter (-H2E)	XDBS2	XDBS6	XDBT2	XDBT6																																				
1/4” Adapter (-H2)	XDBS3	XDBS7	XDBT3	XDBT7																																				
Dust Nut (-L14)	XDBS4	XDBS8	XDBT4	XDBT8																																				
Dust Nut (-D14)	XDBS9	XDBS10	XDBT9	XDBT10																																				
125VDC (D125), 24VDC (D024), 12VDC (D012) 240V60 (A240), 120V60 (A120) 230V50 (E230), 110V50 (E110) (2.6 w)	Epoxy molded coils rated for continuous duty, Class H – 180°C.	316L stainless steel coil housing with internal Junction Box. Internal and external ground screw.  M20 conduit hub  316L stainless steel coil housing with internal Junction Box. Internal and external ground screw.  1/2” NPT conduit hub																																						
24VDC (4W) (Consult factory for other voltage)	Continuous duty coil & rectifier, including surge suppression, potted within housing.	Thick wall epoxy coil housing with integral junction box. Internal ground terminal. M20 x 1.5 conduit entry: (-XMAA), (-XMFA), Cable gland for 6-12 mm ø cable: (-XMAE), 1/2 NPT conduit entry with adapter: (-XMAF), (-XMFF)																																						
24VDC (10W inrush, 2.6W holding) (Consult factory for other voltages)	Continuous duty coil & power controller potted within housing.																																							
24VDC (0.8W) (Consult factory for other voltages)	Continuous duty Coil and power controller potted within housing.	Requires the use of an approved safety barrier or isolator. Thick wall epoxy coil housing and integral junction box. Internal ground terminal. M20 x 1.5 conduit entry: (-XIFA), Cable gland for 6-12 mm ø cable: & 1/2 NPT conduit entry with adapter: (-XIFF)																																						
24VDC system voltage prior to barrier (1.6 watt max.)	Class F epoxy molded coil (155°C). Continuous duty.	Requires the use of an approved barrier or isolator. Maximum operating system voltage before barrier 28VDC. Maximum pilot pressure 115 psi (8 bar). 3 spade terminals & DIN connector with PG9 cable gland: (-HC) 1/2 NPT conduit entry: (-HCC)																																						

# ELECTRICAL OPERATOR SPECIFICATIONS

## Solenoid Options Availability Chart


### Nonhazardous Location

### VALVE SERIES

	NAMUR		NAMUR C-316	C5/C7 C9	E4	E5	D	V	C-316	V-316
	C5	E5								
 1/2" NPT Conduit entry, NEMA 1,2,3	-C50	-C50	std	-C50	std	std	—	std	std	std
 1/2" NPT Conduit entry, Potted coil NEMA 4 & 4X, 11, 12, 13.	-PC	-PC	-PC	-PC	-PC	-PC	—	-PC	-PC	-PC
 1/2" NPT Conduit Integrally Molded Coil & Conduit Entry, NEMA 4/IP65.	-228L	-228L	—	-228L	n/a	n/a	—	—	—	—
 3 Spade Terminals, for use with mini DIN connector	std	std	—	std	n/a	n/a	—	—	—	—
 Mini DIN Connector with PG9 cord grip, NEMA 4.	-HC	-HC	-HC	-HC	-HC	-HC	—	-HC	-HC	-HC
 Mini DIN Connector with 1/2" NPT conduit entry, NEMA 4.	-HCC	-HCC	-HCC	-HCC	-HCC	-HCC	—	-HCC	-HCC	-HCC

### Hazardous Location

### VALVES SERIES

	NAMUR		NAMUR C-316†	C5/C7 C9	E4**	E5	D	V	C-316†	V-316
	C5	E5								
 <b>CSA UL</b> CLASS I, DIV. 1 (C & D) CLASS I, DIV. 2 (A & B) CLASS II, DIV. 1 (E, F & G) <b>ATEX, IECEx</b> Ex d IIB+H2 T3 to T6 Gb II 2 G Ex d IIB+H2 T3 to T6					—	Available. See page 29.	—			
 <b>ATEX, IECEx, CSA:</b> EX II 2 G D Ex de IIC T* Gb EX tb IIIC T* °C Db EX de IIC DIP A21 T6 T4 CI I, Zone 1 Ex de IIC T* CI II, Zone 21 AEx tD, DIP 21			Available. (see page 29 for recommended options).			—	—	Available. (see page 29 for recommended options).		
 <b>ATEX, IECEx, CSA:</b> EX II 2 G D Ex d e IIC T* Gb EX tb IIIC T* °C Db EXd IIC DIP A21 T6 T4 CI Grp B, C & D; CI I Grp E, F & G, CI II CI I, Zone 1 Ex de IIC T* CI II, Zone 21 AEx tD, DIP A21						—	—			
 <b>ATEX IECEx CSA:</b> Ex II 2 G D Ex de IIC T4 Gb Ex tb IIIC IP66 T* °C Db CI, I Zn 1, A/Ex de IIC CI, II, Zn 21, AEx tD A21, T* °C	—	—	—	—	—	—	-XDDS*	—	—	—
 <b>ATEX IECEx, CSA:</b> Ex II 2 G D Ex d IIC T4 Gb Ex tb IIIC IP66 T4 °C Db Ex d IIC T4, CI I, Zn 1, AEx d IIC T4 Zone 21, AEx tb IIIC T4 Db CI I Div 1, Grps B, C & D CI II Div 1 Grps E, F & G, CI III T4 CI I Div 2, Grps A, B, C & D T4	—	—	—	—	—	—	-XDDT**	—	—	—
 <b>(e) Increased Safety (m) Encapsulated (tD) Dust Tight</b> <b>IECEx:</b> Ex e Ex mb, Ex tD Ex e mb II T5, T6 Gb Ex tD A21 T100°C, 85°C <b>EEx</b> <b>ATEX:</b> II 2 G Ex e mb II T5, T6 Ex tD A21 T100°C, 85°C	—	—	-XMAA -XMAF	—	-XMAA -XMAF	—	—	-XMAE -XMA-	-XMAA -XMAF	-XMAA -XMAF
<b>(ia) Intrinsic Safe</b> <b>ATEX:</b> EEx II 2 G EEx ia IIC T4, T5	—	—	-XIFA -XIFF	—	-XIFA -XIFF	—	—	-XIFA -XIFF	-XIFA -XIFF	-XIFA -XIFF
<b>Factory Mutual &amp; CSA</b> Class I, Groups (A, B, C, D) Class II, Groups (E, F & G) Class III, Division 1	-HC-XISC -HCC-XISC	—	-HC-XISC -HCC-XISC	-HC-XISC -HCC-XISC	—	-HC-XISC -HCC-XISC	—	-HC-XISC -HCC-XISC	-HC-XISC -HCC-XISC	-HC-XISC -HCC-XISC
<b>(ia) Intrinsic Safe</b> <b>ATEX:</b> EEx II 2 G EEx ia IIC T4, T5	—	—	-HC-XISX6 -HCC-XISX6	-HC-XISX6 -HCC-XISX6	—	-HC-XISX6 -HCC-XISX6	—	-HC-XISX6 -HCC-XISX6	-HC-XISX6 -HCC-XISX6	-HC-XISX6 -HCC-XISX6

\* Coil temperature, "T" ratings, based on seal type \*\* For more information on E4SM see E Series catalog. † Upright solenoid cap (-U suffix) recommended.

# ELECTRICAL OPERATOR

## Recommended Solenoid Options - hazardous Location



### VALVE SERIES

	Power* (nominal)	NAMUR C5	NAMUR E5	NAMUR 316	C5/C7 C9	E4	E5	D	V	C-316	V-316
<b>North America CSA</b>											
	<b>Watts</b>										
Steel coil cover, 1/2" NPT Conduit entry, NEMA 7 & 9, UL & CSA. Steel. Electroless Nickel Plated, 24" Inch Leads	7.3		-XXL4			—	-XXL4	—		-XXL4†	
	1.8		-XXN4			—	-XXN4	—		-XXN4	
Stainless steel coil cover, 430 type for Hazardous Location. 1/2" NPT Conduit entry, with 24" wire leads. NEMA 7 & 9, UL & CSA.	7.3		-XXE4			—	-XXE4	—		-XXE4	
	1.8		-XXJ4			—	-XXJ4	—		-XXJ4	
316L stainless steel coil housing with internal Junction Box.	1.8		-XDBT9**			-XDBT9**	—	—		-XDBT9**	
	3		—			—	—	XDDT**			
<b>ATEX - IECEx - INMETRO</b>											
Steel coil cover, M20 x 1.5 Conduit entry, (d) Flameproof, IP66, T4, ATEX	7.3		-XNL4			—	-XNL4	—		-XNL4	
	1.8		-XNN4			—	-XNN4	—		-XNN4	
Stainless steel coil cover, 430 type, M20 x 1.5 Conduit entry, with 24" wire leads. (d) Flameproof, IP66, T4, ATEX	7.3		-XNE4			—	-XNE4	—		-XNE4	
	1.8		-XNJ4			—	-XNJ4	—		-XNJ4	
316L stainless steel coil housing with internal Junction Box.	1.8		-XDBS9**			-XDBS9**	—	—		XDBS9**	
	3		—			—	—	XDDS**		—	





\* For 0.85 and 0.50 watt, consult factory.

\*\* All the -XDBT\_ and XDD\_ type solenoids are "World Solenoids." Certified for North America, ATEX, IECEx and INMETRO

† For V Series brass add -TR50 option to -XXL4.

### VALVE SERIES

#### Miscellaneous Options

	NAMUR C5	NAMUR E5	NAMUR C-316	C5/C7 C9	E4	E5	D	V	C-316	V-316
<b>Manual Override</b> (manually pressurizes pilot or solenoid/pilot actuator).  <ul style="list-style-type: none"> <li>-CML: Unguarded locking type; push to operate and turn to lock.</li> <li>-G: Guarded manual override.</li> <li>-M: Unguarded type; push &amp; hold to operate.</li> <li>-MAE: Unguarded, manual override.</li> <li>-ME: Unguarded type; push &amp; hold to operate</li> <li>-M5R: Unguarded locking manual override with a knurled knob, push to actuate and turn to lock.</li> </ul> -ME shown	-CML -G (std)	—	-ME	-CML -G	-M -MAE	—	-M -M5R	-G -M -M5R		-ME
<b>Low Temperature Service</b> <ul style="list-style-type: none"> <li>-EP: Ethylene-Propylene Seals</li> <li>-44: Low Temperature Buna</li> <li>-T40 Fluorosilicone Elastomer</li> </ul>	— -44 —	-EP -44 —	— -44 —	— -44 —	-EP -44 —	-EP -44 —	— — -T40	-EP -44 -T40	— -44 —	-EP -44 -T40
<b>Dust Excluders</b> Dust excluders for solenoid exhaust:  <ul style="list-style-type: none"> <li>-L14 Dust Proof: (Suffix -L14, -E14)</li> <li>-D14 Water Tight: (Suffix -D14)</li> </ul>  Hydraulic Adapter Threaded Solenoid Hydraulic Adapter: (Suffix -H = 3/4" NPT -H2 = 1/2" NPT)			-L14 -D14					-E14 -D14	-L14 -D14	
<b>Natural Gas Service</b> <ul style="list-style-type: none"> <li>-NGS: The standard V-316 Series product is rated for air and gas service including natural gas. Versa recommends suffix detail -NGS for enhanced performance</li> <li>-NGST: For low temperature applications.</li> </ul>	—		std -NGST	-NGS -NGST		std		-NGS -NGST	std -NGST	-NGS -NGST
<b>Stainless Steel Tag</b>  P- 2002-16-NV28A: Stainless Steel Tag part number Two configurations: 1) Two lines of text, up to 20 characters. 2) Two lines, one line is text, the second is sequential numbering. 20 characters per line. Consult factory for ordering details.			Yes			—			Yes	

# Modular Air Package

## VMAP Modular Air Package Based on the V-316 Series

### General Description

The Versa Modular Air Package is a compact air management system, based on V-316 Series components, that will provide a full range of pneumatic accessories and functions to meet the needs of most control systems in the actuator control industry. Major components are shutoff and check valves, filter/regulators, speed controls and directional control valves.

### Design Benefits

Versa's VMAP simplifies the design process by combining all the components of a common circuit into one integrated assembly. Whether a standard shutoff circuit or an intricate control system, VMAP has the features to meet the requirements of any control project. VMAP will reduce engineering, components, vendors, costs, weight and save time.

**TROUBLE FREE.** Designed with integral assembly flanges combined with all O-ring interface sealing and standard fasteners. Long leak free service life is accomplished. No custom or flat gaskets to leak or brackets to fail.

**TECHNOLOGY.** Utilizing the latest in computer aided design and finite element software flow is maximized yielding the highest flow in the smallest of packages.

**CUSTOM CIRCUITRY** is achieved through modular design by simply combining various components to create the desired circuit

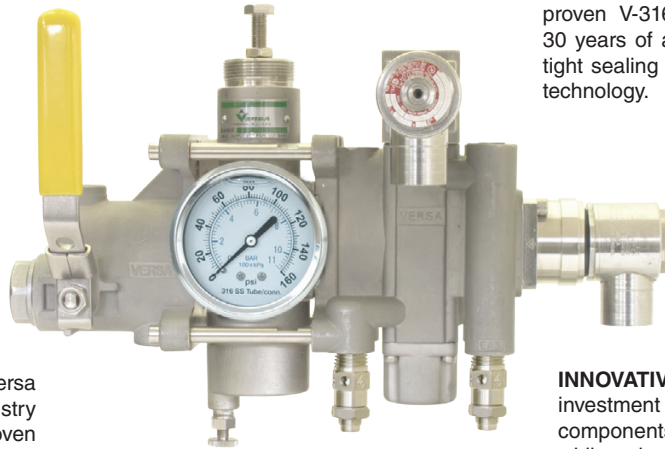
**RELIABILITY.** The reliability of the Versa V-316 Series combined with industry approved materials yields a proven product. SIL (Safety Integral Levels) exceeding most application requirements.

**EFFICIENCY.** VMAP's modular design effectively groups common automation and controls components together in user approved groupings to combine features and reduce size and weight.

**PROVEN.** VMAP is based on Versa's field proven V-316 Series product having over 30 years of acceptance in providing bubble tight sealing through Versa's packed plunger technology.

**FLEXIBILITY.** Many standard and custom circuits are easily created using the VMAP modular concept.

**INNOVATIVE.** Through the use of investment casting technology main components are integrated saving space while reducing potential leakage points.



### ENGINEERING BENEFITS

- Standard or custom circuits available utilizing VMAP's modular components.
- Convenience of one purchase order and one vendor.
- No need for developing Bill of Materials for fittings, tubing and bracketing.
- No need for designing complete layout of many different system components.
- No need for designing brackets for many individual components.

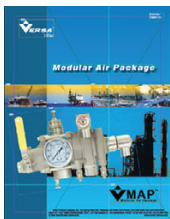
### FIELD BENEFITS

- Ease of repair: By removing a few screws the various modules can be disassembled and inspected, no tubing or fittings to remove
- Field configurability of function after installation: Add more valves as the requirements of the process change
- 10 year warranty

### INSTALLATION BENEFITS

- Reducing fittings, tubing and related labor costs
- Reduction in size and weight
- One component to mount

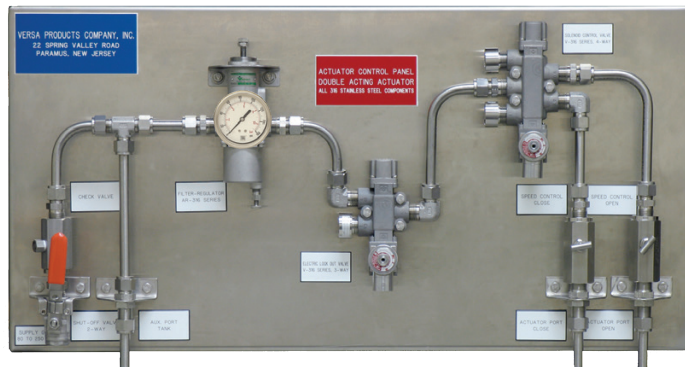
## Current Technology



### NEW



VMAP and Panel shown at scale



# Modular Air Package



## CMAP Modular Air Package Based on C-316 Series

### General Description

The Versa Modular Air Package is a compact air management system, based on C-316 Series components. The basic CMAP system is made of two configurable modules. Module one is the air preparation module consisting of filter/regulators, gauges and drains. Module two is the control valve module consisting of many different variations of 3-Way control valves.

#### C-316 Series Modular Air Package

Versa Products C-316 Series Modular Air Package (CMAP) consists of the most common pneumatic components and accessories utilized in the valve automation industry. A CMAP system is composed of a filter/regulator, gauge and directional control valve all in one. CMAP is a simplified version of the successful VMAP system offering a cost effective complete package for basic valve control systems.

CMAP is all stainless steel construction available in 1/4 inch basic size with Viton seals. An all investment cast 316 design is utilized to maximize flow while reducing overall size and weight. CMAP is the smallest 1.5 Cv package available on the market today!

One of CMAP's key advantages is cost reduction. CMAP systems are easily specified. All systems include integral mounting means for ease of installation. These features reduce engineering design and specifying costs. Cost reduction benefits include reduction of fittings and tubing further reducing engineering, fitting and installation costs.

CMAP is based on Versa's field proven C-316 and AR Series. All inter-component connections utilize O-ring interface sealing to reduce potential leakage points. The combination of C-316 and AR reliability, O-ring sealing and a simple design principal all provide a reliable and easily maintained product. CMAP is the sensible choice.

**The Air Prep Module** consists of filter/regulators, gauges and drains. Based on Versa's AR-316 Series, this proven design is small, high flow, simple and configurable. Regulators are equipped with tamper proof adjustment locknut preventing unwanted changes in pressure. A manual drain is standard, however an auto drain can be easily specified as an option.

**The Control Valve Module** is based on Versa's C-316 Series directional control valves introduced over a decade ago. This proven design is small, yet yields high flow. C-316 valves are also simple and configurable in design. The C-316 Series has become a leader in the 1/4" size control package market. Furthermore, the C-316 Series is available as a solenoid, in almost every classification, as well as pilot, manual or latching configurations.

#### Options

- Mount in any orientation. Threaded mounting holes are supplied as standard or utilize optional bracket.
- Optional auxiliary port for monitoring and pressure take off.
- Optional speed controls.
- Optional low temperature sealing.
- Optional pressure relief valves, preset in 5 psi increments from 60 to 150 psi.

### Basic Air Prep/Valve Selector

Air Prep Selection		Part Number		Weights	
Regulator, Filter and manual drain*	Description	0-100 psi	0-150 psi	lbs	kg
	No gauge	ARFA-3112-316-CA3	ARFA-3111-316-CA3	2.7	1.22
	2" gauge liquid filled	ARFA-3112-316-CA3-GBG	ARFA-3111-316-CA3-GBG	2.9	1.32
	2 1/2" gauge liquid filled	ARFA-3112-316-CA3-GAG	ARFA-3111-316-CA3-GAG	2.9	1.32

Valve Selection	Description	Part Number		Weights ††	
		3-Way, normally closed †	3-Way, normally open †	lbs	Kg
	3/2 Pilot, Spring Return	CSG-3321-316-CA3-**	CGS-3322-316-CA3-**	1.9	0.86
	3/2 Double Pilot, detented	CGG-3321-316-CA3-**	CGG-3322-316-CA3-**	2.5	1.13
	3/2 Pilot, spring return w/ latch	CAG-3321-316-CA3-356BN-**	CGA-3322-316-CA3-356BN-**	2.2	0.99
	3/2 Pilot, spring return w/ latch and button	CAG-3321-316-CA3-356B-**	CGA-3322-316-CA3-356B-**	2.3	1.04
	3/2 Pilot, spring return	CSP-3301-316-CA3	CPS-3302-316-CA3	1.3	0.59



See CMAP in Bulletin C-316 online at Versa Website



Notes:  
 \* For auto drain, consult factory  
 \*\* Add voltage and solenoid options. See C-316 catalog;  
 † For expilot change 3321 to 3301  
 †† Weight are for -XX type solenoids

ARFA-3111-316-CA3-GAG      ARFA-3111-316-CA3-GAG RV-3-316-080  
 CAG-3321-316-CA3-356BN-XXJ-D024      CSG-3321-316-CA3-XDBT-D024

The Versa Modular Air Package design is protected under European Community Design Registration and US patent is pending.

## 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

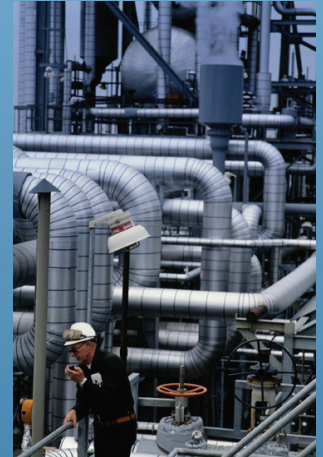
electrical, mechanical, and safety codes, as well as applicable governmental regulations and laws must be complied with when installing or servicing a Versa product.

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

Products sold by Versa are warranted to be free from defective material and workmanship for a period of ten years from the date of manufacture, provided said items 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 the only and exclusive remedy and in no event shall Versa be responsible or liable for incidental or consequential damages.



[www.versa-valves.com](http://www.versa-valves.com)

e-mail: [sales@versa-valves.com](mailto:sales@versa-valves.com)