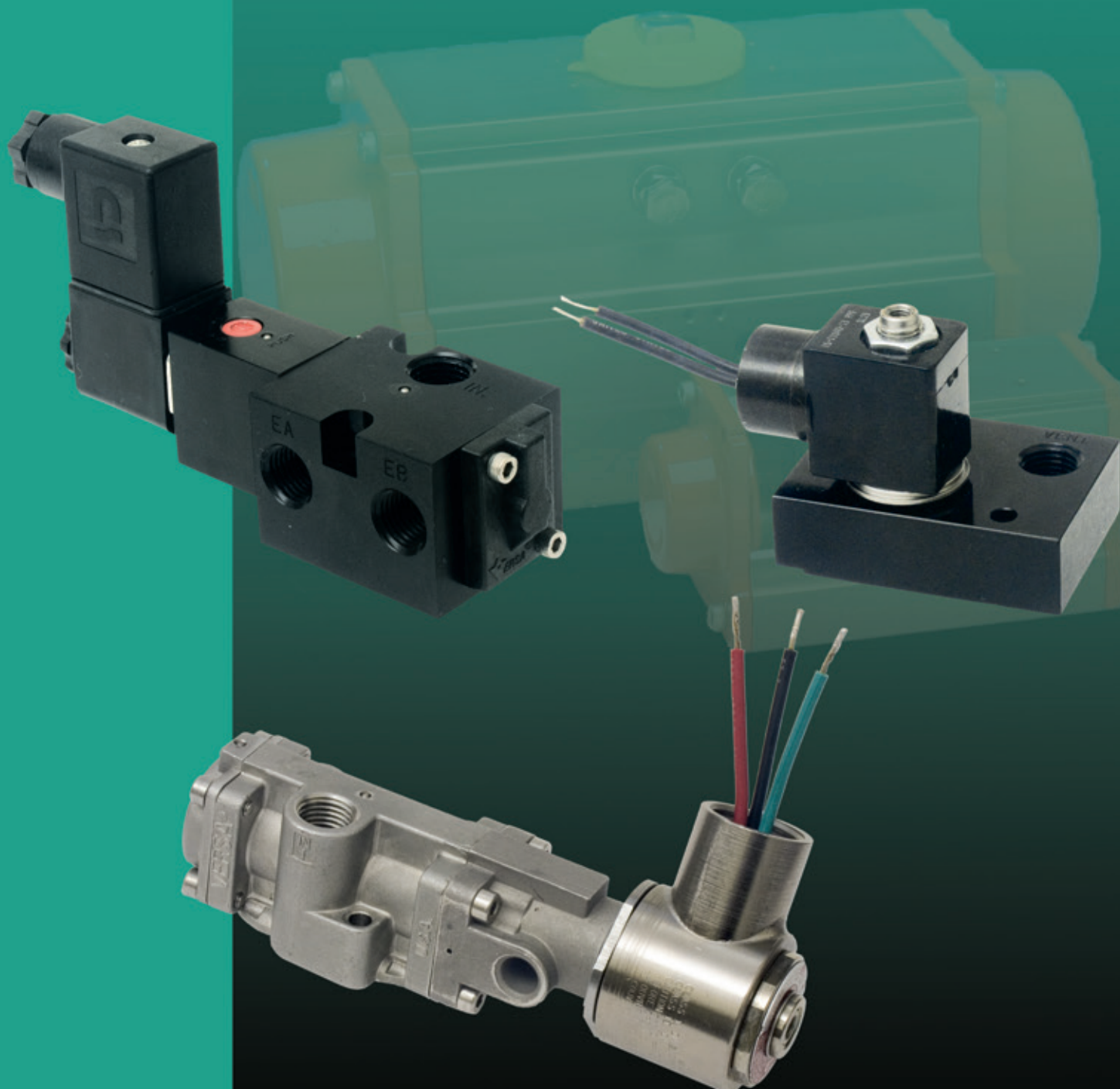




BULLETIN
NMce-2017



NAMUR DIRECT MOUNT PNEUMATIC ACTUATOR VALVES



DIRECT MOUNT ACTUATOR VALVES



GENERAL DESCRIPTION

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 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:	E5, C5 C316	Anodized aluminum 316L Stainless Steel
Plunger:	C5 C316:	Anodized aluminum 316L Stainless Steel
Actuating Caps:	C5 C316	Solenoid – anodized aluminum. Spring cap – synthetic resin. Solenoid and spring cap – 316L Stainless Steel
Pilot Piston:	C5 C316	Synthetic resin 316L Stainless Steel
Valve Seals:	C5 - C316: C5: E5 - C5 C316	Plunger and body – FKM (fluorocarbon) Pilot piston – NBR (nitrile) Mounting O rings valve/actuator – NBR (nitrile) Mounting O rings valve/actuator – FKM (fluorocarbon)
Body and Screws:	C5 - C316 E5 C316 C5	Stainless steel Stainless steel (valve to actuator) Stainless steel (valve to actuator) Carbon steel (valve to actuator)
Solenoid Parts:	E5, C5 & C316 E5, C5 E5, C5 & C316	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

PortSize

Inlet and exhaust	E5	1/4 NPT or G1/4-Series (vent 10-32)
	C5/C316	1/4 NPT or G1/4-Series (C5 only)

Flow Rates

		Cv (average for all ports)
Inlet and exhaust	E5	0.08
	C5	0.75
	C316	1.6

Installation and Filtration

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

Options

See Options pages 4 and 5

Valve Type	Operating Pressure Range* Pneumatic		
	E5	C5	C316
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. For applications above 125 psi (8.6 bar) exhaust flow controls or mufflers are recommended.

DIRECT MOUNT ACTUATOR VALVES



VALVE PRODUCT NUMBER SELECTOR

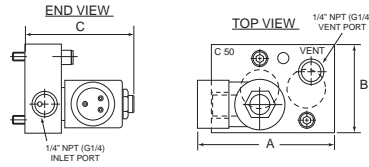
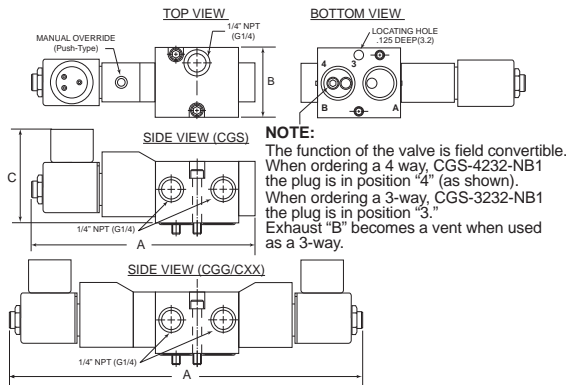
C5, C-316 & E5 NAMUR				Basic Valve Number*			
SERIES	FUNCTION**	PORT SIZE	Cv	SINGLE SOLENOID/SPRING RETURN, 2 POSITION	DOUBLE SOLENOID/DETENT, 2 POSITION	DOUBLE SOLENOID/SPRING CENTERED, 3 POSITION	
						Blocked Center	Exhaust Ports Open
C5	4-way 5/2 & 5/3	1/4 NPT G1/4	.75 .75	CGS-4232-NB1-†-(coil 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)
C316	4-way 5/2 &	1/4 NPT	1.6	CGS-4332-316-NE1-†-(coil code) 	CGG-4332-316-NE1-†-(coil code) 		
	3-way 3/2	1/4 NPT	1.6	CGS-3331-316-NE1-†-(coil code) 	CGG-3331-316-NE1-†-(coil code) 		
E5	3-Way 3/2	1/4 NPT	.08	E5SM-3011-34-NB1-†-(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. C316 NUMAR: For #10-32 screws change NE1 to NE2. For M5 screws change NE1 to NE3.
 **3-way 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 below for description.
 † Add suffix option here if required, For coil code see page 4.

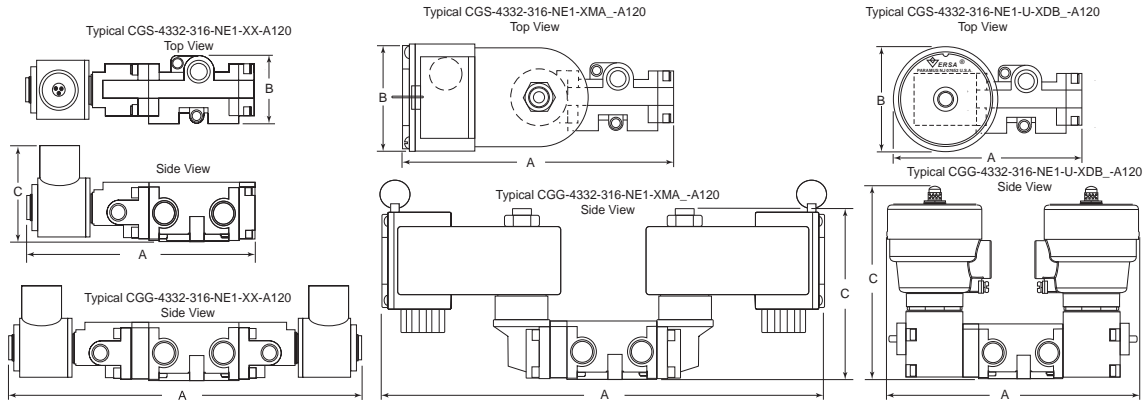
DIMENSIONS

Series C5

Series E5



Series C316



DIMENSIONS

Solenoid Options

VALVE SERIES	Function	General Service																				
		Standard, -228L			-027, 043			C50, -PC			-XX, -XN			-XISC, -XISX6			-XMA, XIF			-XDB		
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C			
E5	Single solenoid, spring return	2.11 (53.6)	1.75 (44)	2.31 (58.7)	—	—	—	2.84 (204.9)	1.75 (44)	2.31 (58.7)	3.01 (76.5)	2.47 (62.7)	2.39 (60.7)	2.8 (71)	1.89 (48.2)	1.75 (44)	—	—	—	—	—	—
C5	Single solenoid, spring return	5.02 (127.5)	1.56 (39.6)	1.29 (32.8)	3.45 (87.6)	1.56 (39.6)	2.34 (59.4)	5.02 (127.5)	1.04 (26.4)	2.09 (53.1)	3.79 (96.3)	1.31 (33.3)	1.45 (36.8)	3.53 (89.7)	1.31 (33.3)	1.15 (29.2)	—	—	—	—	—	—
C316	3-Way or 4-Way	5.56 (141.3)	1.63 (41.3)	2.15 (54.7)	—	—	—	5.56 (141.3)	1.63 (41.3)	2.15 (54.7)	5.56 (141.3)	1.63 (41.3)	2.32 (59)	5.43 (138)	1.63 (41.3)	2.94 (74.6)	6.59 (167.3)	2.56 (65)	4.13 (104.8)	4.63 (117.6)	2.50 (63.5)	4.74 (120.3)
C5	Double solenoid	7.92 (201.1)	1.56 (39.6)	2.04 (51.8)	7.42 (188.4)	1.56 (39.6)	2.34 (59.4)	7.93 (201.4)	1.56 (39.6)	2.09 (53)	8.07 (205)	1.56 (39.6)	2.26 (57.4)	7.55 (191.7)	1.56 (39.6)	6.93 (176)	—	—	—	—	—	—
C316	3-Way or 4-Way	5.56 (141.3)	1.63 (41.3)	2.15 (54.7)	—	—	—	8.57 (217.7)	1.63 (41.3)	2.15 (54.6)	8.78 (223.1)	1.63 (41.3)	2.32 (59)	8.31 (211.1)	1.63 (41.3)	2.94 (74.6)	10.8 (275)	2.56 (65)	4.13 (104.8)	6.32 (160.5)	2.50 (63.5)	4.74 (120.3)

NON HAZARDOUS LOCATION OPERATORS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	None or -HT, PC	General Purpose	Indoor & Outdoor	CSA	NEMA 1,2, 3 & 4
	-HC -HCC (Shown)	General Purpose	Indoor & Outdoor	CSA UL (AC only)	NEMA 4; IP65
	-228L	General Purpose	Indoor & Outdoor	UL	NEMA 4;

HAZARDOUS LOCATION OPERATORS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification-(Conformance)	Ingress Protection
	-XX (see page 6 for additional coil options)	Hazardous Locations	CLASS I, DIV. 1 (C & D) CLASS I, DIV. 2 (A & B) CLASS II, DIV. 1 (E, F & G)	UL - CSA	NEMA 7 & 9
	-LB-XX (see page 6 for additional coil options)				
	-XN (see page 6 for additional coil options)	(d) Flameproof	Ex d IIB+H2 T3 to T6 Gb II 2 G Ex d IIB+H2 T3 to T6	IECEX - INMETRO ATEX	IP65& IP66
	-LB-XN (see page 6 for additional coil options)				
	-U-XDBS*	(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	ATEX - IECEX -INMETRO cCSA _{US}	IP66, IP67, & IP68
	-U-XDBT*				
	-U-XMAA*	(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
	-U-XMAF*				
	-U-XMFA* -U-XMFF*				
	-XISX6*	Intrinsic Safe	II 2 G EEx ia IIC T6 Class I, Groups (A, B, C & D) Class II, Groups (E, F, & G) Class III	ATEX Factory Mutual CSA	IP65
	-XISC*				

*-U (upright) suffix recommended for coil housing clearance. For -XDB_ ordering information see "Miscellaneous" column facing page.

OPTIONS

Solenoid Vent Options

The standard solenoid vent is supplied with 10-32 internal thread, vent to atmosphere. See other options below

- L14: Is a stainless steel screw and filter adapter that provides "Dust Proof" protection for the solenoid sleeve vent.
- D14: Is a stainless steel adapter with a sealing O-ring that provides "Water Tight" protection for the solenoid sleeve vent.
- HE and H2E: Are 1/4"-18 npt and 1/8"-27 npt stainless steel adapters, providing a pipe connection to solenoid vent.



Dust Excluders
 -L14 Dust Proof -D14 Water Tight Hydraulic Adapter
 -H2E 1/8" -HE 1/4"

ELECTRICAL

COIL CODES: Identify the solenoid frequency and voltage consisting of a "Rating Code" and "Voltage" as shown at right. Coil codes complete the part number for a solenoid operated valve.

Rating Code
 A = 60Hz frequency
 D = Direct Current (DC)
 E = 50Hz frequency

Voltage
 Indicated by three digits:
 e.g. 24 volts = 024
 120 volts = 120

A 120 = AC, 120Volts/60Hz

Voltage (Power)	Electrical Characteristics	Miscellaneous
All usual 50 Hz & 60 Hz AC (6W) All usual DC (7W)	Class F epoxy molded coil (155°C). Continuous duty, 2 leads 24" (60 cm).	Steel cover with 1/2 NPT conduit hub.
24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Mini DIN socket with PG9 cable gland (-HC) or 1/2" conduit hub (-HCC).
24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Epoxy encapsulated coil with steel 1/2 NPT conduit hub.

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="2">Stainless steel coil housing with internal Junction Box. Internal and external ground screw.</th> <th colspan="4">Suffix Detail Ordering Code</th> </tr> <tr> <th colspan="2">M 20 Connection</th> <th colspan="2">1/2" Connection</th> </tr> <tr> <th></th> <th>No Diode</th> <th>Diode</th> <th>No Diode</th> <th>Diode</th> </tr> </thead> <tbody> <tr> <td>Standard (vent to atmosphere)</td> <td>XDBS1</td> <td>XDBS5</td> <td>XDBT1</td> <td>XDBT5</td> </tr> <tr> <td>1/8" Adapter (-H2E)</td> <td>XDBS2</td> <td>XDBS6</td> <td>XDBT2</td> <td>XDBT6</td> </tr> <tr> <td>1/4" Adapter (-H2)</td> <td>XDBS3</td> <td>XDBS7</td> <td>XDBT3</td> <td>XDBT7</td> </tr> <tr> <td>Dust Nut (-L14)</td> <td>XDBS4</td> <td>XDBS8</td> <td>XDBT4</td> <td>XDBT8</td> </tr> <tr> <td>Dust Nut (-D14)</td> <td>XDBS9</td> <td>XDBS10</td> <td>XDBT9</td> <td>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
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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																																					
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)																																							

Options

Overrides

C5 Valves*



Standard; momentary contact



-M; Unguarded, momentary contact



-CML; Knurled knob twist to lock



-ME; Unguarded, momentary contact

Solenoid Orientation C316 Valves



In line solenoid standard



Upright solenoid (-U)

Note: -U for C316 valves only

*E5 not available with override

COMBINATION SUFFIX DETAILS

**Hazardous Location Combination Suffix Details
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
-XXJ	-XX, -LB, -PC, -ST
-XXJ4	-XX, -D14, -LB, -PC, -ST
-XXK	-XX, -HT, -LB, -PC, -ST

North American (-XX) (Cont.)	
Combination Suffix	Included Suffix
-XXX4	-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
-XNE4	-XN, -D14, -PC, -ST
-XNF	-XN, -HT, -ST
-XNG	-XN, -LB, -ST
-XNH	-XN, -HT, -PC, -ST
-XNJ	-XN, -LB, -PC, -ST
-XNJ4	-XN, -D14, -LB, -PC, -ST
-XNK	-XN, -HT, -LB, -PC, -ST
-XXK4	-XN, -D14, -HT, -LB, -PC, -ST
-XNL	-XN, -PC
-XNL4	-XN, -D14, -PC

ATEX (XN) (Cont.)	
Combination Suffix	Included Suffix
-XNM	-XN, -HT, -PC
-XNN	-XN, -LB, -PC
-XNN4	-XN, -D14, -LB, -PC
-XNP	-XN, -HT, -LB, -PC
-XNQ	-XN, -HT, -LB
-XNR	-XN, -LB
-XNS	-XN, -LA, -ST
-XNS4	-XN, -D14, -LA, -ST
-XNU	-XN, -HT, -LB, -ST
-XNV	-XN, -LA
-XNV4	-XN, -D14, -LA
-XNX	-XN, -LB, -PS
-XNWS	-XN, -VJBT, -LB, -PS

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

Recommended Hazardous Location Solenoid Option Packages

Enclosure/Wire	Certification/Power			
	North American - CSA		ATEX - IECEx - INMETRO	
	Standard Power	Low Watt*	Standard Power	Low Watt*
Steel, Electroless Nickel Plated, 24 Inch Leads	-XXL4	-XXN4	-XNL4	-XNN4
Stainless Steel, High Performance 430 type, 24 Inch leads	-XXE4	-XXJ4	-XNE4	-XNJ4
Stainless Steel, 316L type, Junction Box with Terminal Strip	n/a	-U-XDBT9**	n/a	-U-XDBS9

* 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

Miscellaneous: Actuator Speed

Actuator Speed	Valve Type	ACTUATOR VOLUME in ³ (cm ³)									
		5 (82)	10 (162)	25 (410)	50 (820)	100 (1641)	150 (2460)	200 (3280)	400 (6560)	600 (9840)	1000 (16400)
Actuator Cycle time in seconds	C5/C316	.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	—	—	—

The above 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.

For double-acting actuators (open & closed), use volumes from selected actuator specifications and the chart for estimated speed. The times indicated are per shift. For spring return actuators, use open volume to obtain time from chart. Actuator spring loading may affect shift time.

Slower speeds (adjustable) can always be accomplished by using Versa's Bleed Control Valves in the control valve exhaust port.

DIRECT MOUNT ACTUATOR VALVES

Accessories

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 from the exhaust cycle of the piston side of actuator. No additional air is required to complete the cycle and keep the actuator clean, hence the reason this accessory is called a "ReBreather" reusing clean exhaust air to keep the 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 contaminants.

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). This add-on accessory includes 2 of Versa's proven "Bleed Controls" to allow independent adjusting of open and close speeds.



ORDERING INFORMATION

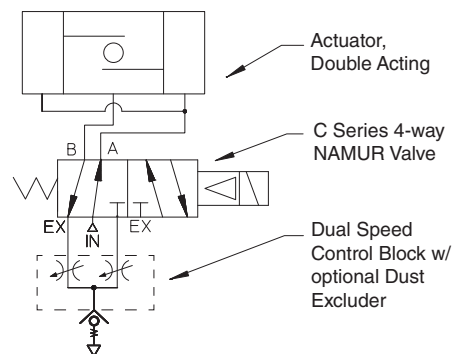
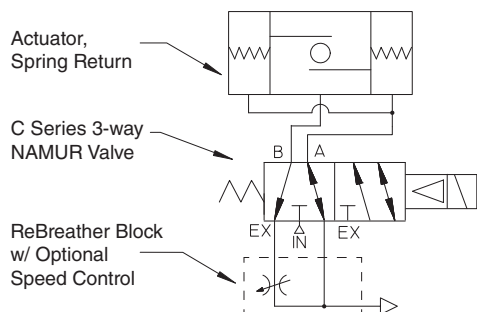
As a Kit		
C Series	C 316 Series	Description
C-33RB-NB	C-33RB-NE	Plate, 1/4" npt vent port open
C-33RB-NB-BC	C-33RB-NE-BC	Plate, and speed control, with 1/4" npt vent port open
C-33RB-NB-DE3	C-33RB-NE-DE3	Plate, with DE-3 in vent port**
C-33RB-NB-BC-DE3	C-33RB-NE-BC-DE3	Plate, and speed control, with 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-DB3	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/C316 series valve part number.
 **Aluminum DE on C Series and Stainless on C-316 Series
 † Customer supplied excluder





Versa has been supplying the oil and gas industry with pneumatic and hydraulic components for over 50 years. We have built a reputation for quality that is unsurpassed in the market for high performance solenoids, pneumatic relays, resets and pilot valves

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

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

DESIGN APPLICATION WARNINGS

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

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

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

INSTALLATION, OPERATION AND SERVICE WARNINGS

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

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

LIMITED WARRANTY DISCLAIMER AND LIMITATION OF REMEDIES

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

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