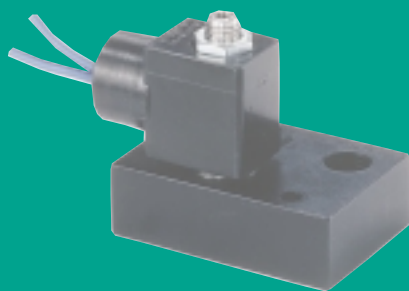
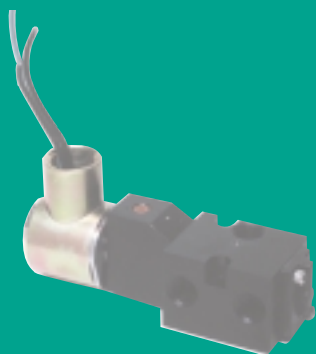


NAMUR DIRECT MOUNT PNEUMATIC ACTUATOR VALVES

VERSA[®]

BULLETIN
NMce-2001

AIR VALVES FOR INDUSTRY SINCE 1949



SOLENOID ACTUATION

1/4 NPT or G1/4

DIRECT MOUNT TO MANY DIFFERENT ACTUATORS

10 YEAR WARRANTY

C5 Series: 3-way or 4-way, 2 or 3 position
Pneumatic Service to 115 psi (8 bar)

E5 Series: 3 way, 2 position
Pneumatic Service to 150 psi (10.3 bar)



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DIRECT MOUNT ACTUATOR VALVES

ALUMINUM CONSTRUCTION

SERIES C5 NAMUR

3-Way/4 Way Field Convertible Solenoid Valves

General Description

The Versa C5 NAMUR mount control valve is a high flow, 5-port, solenoid/pilot valve. It is designed to mount directly to any NAMUR actuator, thus reducing actuator response time and cost of tubing, fittings, brackets, and labor. Many adaptor kits are available for non-NAMUR actuators. Consult factory for kit availability.



The 5-port design allows the C5 NAMUR to be ordered as either 4-way (for double acting actuators) or 3-way (for spring return or fail-safe actuators). The function of 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 leakfree/bubbletight. A complete selection of electrical connections, area classifications, and

Operating Pressures and Weights

Valve Type	Operating Pressure Range ^{††} Pneumatic	Approximate Weights	
		Ordinary Service	Hazardous Service
Single Solenoid/spring return (2-position)	15-115 psi (1-8 bar)	0.8 lbs. (363 g)	1.1 lbs. (500 g)
Double Solenoid/detented (2-position)	10-115 psi (0.7-8 bar)	1.2 lbs. (545 g)	1.8 lbs. (816 g)
Double Solenoid/spring centered (3-position)	15-115 psi (1-8 bar)	1.2 lbs. (545 g)	1.8 lbs. (816 g)

†† Pressure ranges may change based on solenoid option. See page 4.
MPa = $\frac{\text{bar}}{10}$

For higher pressure applications, consult factory.

power requirements makes the most exacting and demanding specifications or applications easy to satisfy. Manual overrides (guarded-push to operate) are standard on all C5 NAMUR valves. Consult factory for other manual overrides available as an option.

Materials

Valve body and plunger: anodized aluminum (for stainless steel direct mount valve, consult factory)

Actuating Caps: solenoid—anodized aluminum
spring cap—synthetic resin

Valve seals: plunger and body—FKM (fluorocarbon)
pilot piston—NBR (nitrile)

Pilot Piston: synthetic resin
Screws: stainless steel (except valve to actuator = carbon steel)

Port plug: brass
Solenoid parts: sleeve, plunger & spring—304 & 430F stainless steel

coils—epoxy encapsulated with 3 spade terminals (std) or 2 or 3 wire lead (opt)

coil cover—(when applicable) option:—C50 = carbon steel, painted;

—LB—XN, —LB—XX, —PC, —PC—XN, —PC—XX, —XN, —XX= carbon steel, zinc chromate plated

Porting Size

Inlet and exhaust — 1/4 NPT or G1/4

Cylinder ports — O ring seal per NAMUR standard (For non-NAMUR actuators, consult factory)

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 5°F (15°C) to 125°F (50°C).

Flow Rates

Cv = 0.75 (Kv = 11) average for all ports (48 SCFM at 100 psi; 82 Nm³/h at 7 bar).

For actuator speed rates see page 4.

Options Suffix

Manual Override: none Standard on basic valves, guarded-push to operate.

All other options see page 4.

C5 NAMUR Valve Product Number Selector

Basic Valve Number*

FUNCTION**	PORT SIZE	Cv (Kv)	Basic Valve Number*			
			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 (11) .75 (11)	CGS-4232-NB1 -†- (coil code)	CGG-4232-NB1 -†- (coil code)	CXX-4233-NB1 -†- (coil code)	CXX-4234-NB1 -†- (coil code)
			CGS-4292-NB1 -†- (coil code)	CGG-4292-NB1 -†- (coil code)	CXX-4293-NB1 -†- (coil code)	CXX-4294-NB1 -†- (coil code)
3-way** 3/2 & 3/3	1/4 NPT G1/4	.75 (11) .75 (11)	CGS-3232-NB1 -†- (coil code)	CGG-3232-NB1 -†- (coil code)	CXX-3233-NB1 -†- (coil code)	CXX-3234-NB1 -†- (coil code)
			CGS-3292-NB1 -†- (coil code)	CGG-3292-NB1 -†- (coil code)	CXX-3293-NB1 -†- (coil code)	CXX-3294-NB1 -†- (coil code)

* All valves include O ring interface seals and #10-24 mounting screws.

For #10-32 screws change NB1 to NB2. For M5 screws change NB1 to NB3.

** 3-way is the same valve as 4-way, but is provided with a relocated cylinder port plug. See note on page 4

For coil code see page 4.

† Add suffix option here, if required.

SERIES E5 NAMUR

3-Way Solenoid Valves

General Description

The Versa 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 NAMUR actuator 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 solenoid, spring return only, and with most of the Versa solenoid options. See page 4.

Materials

Valve body: anodized aluminum
 Valve seals: body/plunger — NBR (nitrile)
 valve/actuator mounting O rings — NBR (nitrile)

Screws: (valve to actuator) = carbon steel

Solenoid parts: sleeve, plunger & spring— 304 & 430F stainless steel
 coils—epoxy encapsulated with 3 spade terminals (std) or 2 or 3 wire lead (opt)
 coil cover— (when applicable) option:—C50 = carbon steel, painted;
 —LB—XN, —LB—XX,—PC,—PC—XN,
 —PC—XX, —XN,—XX= carbon steel, zinc chromate plated

Operating Pressures and Weights

Valve Type	Operating Pressure Range Pneumatic	Approximate Weights	
		Ordinary Service	Hazardous Service
Single Solenoid/spring return (2-position)	0-150 psi (0-10.3 bar)	0.6 lbs. (272 g)	0.9 lbs. (408 g)

Porting Size

Inlet and Vent -1/4 NPT or G1/4
 Exhaust -#10-32 (1/8 NPT or G1/8 available)
 Cylinder ports -O ring seal for NAMUR standard
 (For non-NAMUR actuators, consult factory)

Installation, Filtration and Lubrication

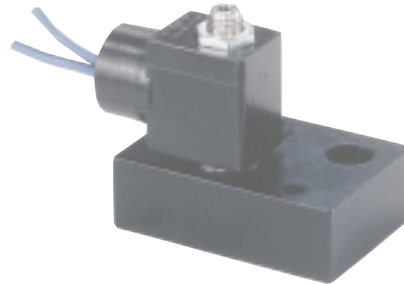
Valves have no limitations on mounting orientation.
 40 to 50 micron filtration and general purpose lubricating oil ISO, ASTM viscosity grade 32 recommended.
 Ambient temperature range 5°F (15°C) to 125°F (50°C).

Flow Rates

Cv = 0.08 (Kv = 1.2) average for all ports
 (5 SCFM at 100 psi; 8.5 Nm³/h at 7 bar).
 For actuator speed rates see page 4.

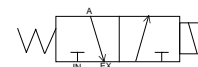
Options

See page 4.



E5 NAMUR Valve Product Number Selector

			Basic Valve Number*	
FUNCTION	PORT SIZE	Cv (Kv)	SINGLE SOLENOID/SPRING RETURN 2-POSITION	
3-way	1/4 NPT	.08 (1.2)	E5SM-3011-34-NB1 -†- (coil code)	
3/2	G1/4	.08 (1.2)	E5SM-3071-34-NB1 -†- (coil code)	



For coil code see page 4.
 †Add suffix option here, if required.

* All valves include O ring interface seals and #10-24 mounting screws.
 For #10-32 screws change NB1 to NB2.
 For M5 screws change NB1 to NB3.

DIRECT MOUNT ACTUATOR VALVES

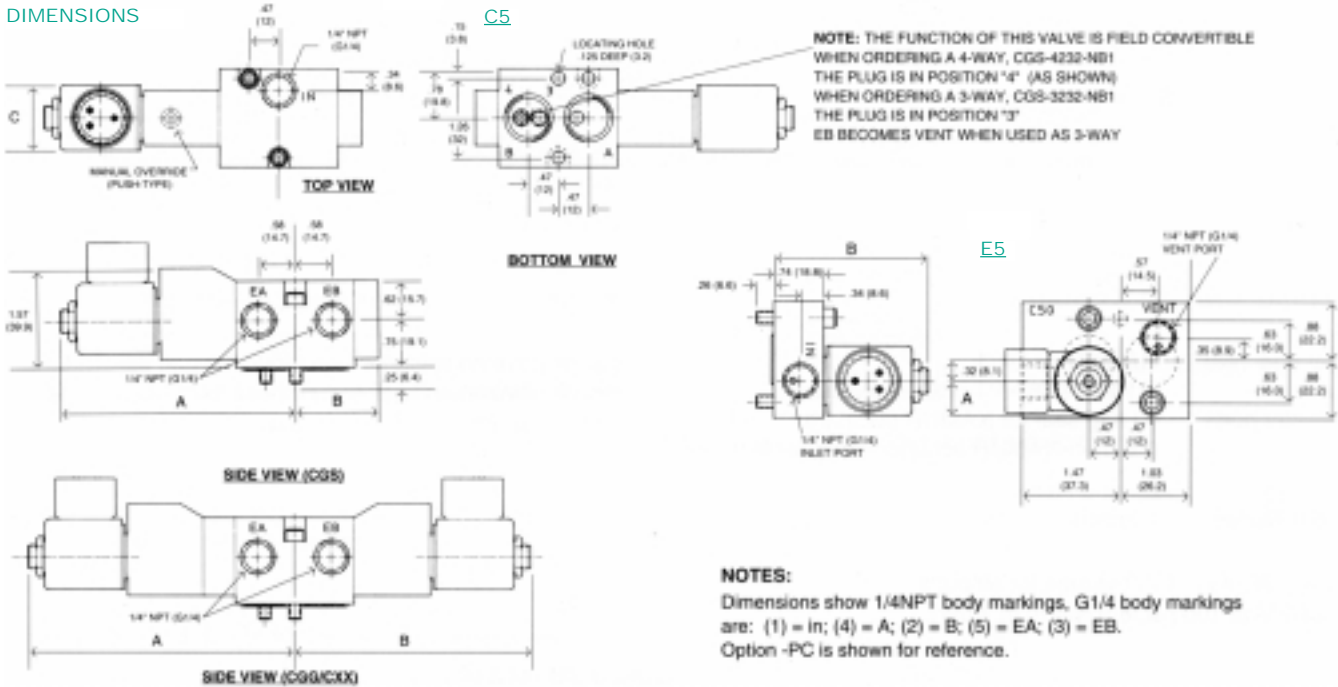
	NAMUR OPTIONS		VOLTAGES & COIL CODES**			
	DESCRIPTION	SUFFIX DETAIL*	VALVE TYPE		NOMINAL COIL POWER	
			C5	E5		
NON-HAZARDOUS SERVICE	Spade Terminals (standard) Strain Relief mini-DIN type connector, cord grip PG9 1/2 NPT conduit mini-DIN type connector 1/2 NPT conduit, watertight, NEMA 4	None -HC -HCC -228L	110V50 (E110) 220V50 (E220) 240V50 (E240)	24V60 (A024) 120V60 (A120) 240V60 (A240)	12VDC (D012) 24VDC (D024) 48VDC (D048)	AC=8.5 W DC=10.5 W
	1/2 NPT conduit, general purpose, NEMA 1,2,3 1/2 NPT conduit, watertight, NEMA 4 & 4X	-C50 -PC				AC=6 W DC=7 W
HAZARDOUS SERVICE	Flameproof, 1/2 NPT conduit, NEMA 7 & 9, UL listed, CSA approved -watertight, dusttight, NEMA 4, 4X, 7 & 9, UL listed, CSA approved Flameproof, M20x1.5 conduit, Zone 1 & 2 INEX approved per CENELEC, IP66	-XX -PC-XX -XN	110V50 (E110) 220V50 (E220) 240V50 (E240)	24V60 (A024) 120V60 (A120) 240V60 (A240)	12VDC (D012) 24VDC (D024) 48VDC (D048)	AC=5.6 W DC=7.2 W
	Flameproof, low power, 1/2 NPT conduit, NEMA 7 & 9, UL listed	-LB-XX	12V60 (A012) 24V60 (A024)	6VDC (D006) 12VDC (D012)		AC or DC =1.8 W
	Flameproof, low power, M20x1.5 conduit, Zone 1 & 2 INEX approved per CENELEC, IP66	-LB-XN	120V60 (A120) 240V60 (A240)	24VDC (D024) 48VDC (D048) 120VDC (D120)		
	Intrinsically safe, strain relief mini-DIN type connector, cord grip PG 9 -Factory Mutual/CSA approved -PTB approved per CENELEC	-XISP		24VDC (D024) system voltage prior to barrier	not available	DC=1.6 W max

* Add option number to basic valve number as suffix.

** Add coil code# to end of valve number.

For other options, voltages, or Versa's Direct Mount NAMUR Subplate for 1/4" brass V Series, please consult factory.

DIMENSIONS



NAMUR DIMENSIONS: INCHES (mm)															
Valve Type	Solenoid Option														
	Standard, -228L			-027, -043			-C50, -PC			-XX, -XN			-XISP		
	A	B	C	A	B	C	A	B	C	A	B	C	A	B	C
CGS	3.71 (94.2)	1.31 (33.3)	.885 (22.5)	3.45 (87.6)	1.31 (33.3)	.875 (22.2)	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)	3.96 (100.6)	3.45 (87.6)	.875 (22.2)	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)

NAMUR DIMENSIONS: INCHES (mm)						
Valve Type	Solenoid Option					
	STANDARD, -228L		-C50, -PC		-XX, -XN	
	A	B	A	B	A	B
E5	.44 (11.2)	2.31 (58.7)	.52 (13.2)	2.31 (58.7)	.73 (18.4)	2.39 (60.7)

ACTUATOR VOLUME in ³ (cm ³)										
Valve Type	5 (82)	10 (164)	25 (410)	50 (820)	100 (1640)	150 (2460)	200 (3280)	400 (6560)	600 (9840)	1000 (16400)
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	--	--	--

For double-acting actuators (open & close), 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.

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.

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