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Bulletin E
2015

VERSA® Valves

E FAMILY












Versa Products Company, Inc., 22 Spring Valley Rd., Paramus, NJ 07652 USA Phone: (201)-843-2400 Fax: (201)-843-2931
Versa BV, Prins Willem Alexanderlaan 1427, 7312 GB Apeldoorn, The Netherlands Phone: +31-55-368-1900 Fax: +31-55-368-1909
E-mail: sales@versa-valves.com www.versa-valves.com

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Valve Types — Series ..... See Chart Below








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Series	**EZ**	**E5**	**E4**	**E**	**E3**	**E* QE**
Description	Compact Direct Acting	Compact Direct Acting	Compact Direct Acting	Medium Flow Direct Acting	High Flow Direct Lift	High Flow
Pressure Range	vacuum to 250 psi (17 bar)	vacuum to 500 psi (34 bar)	vacuum to 500 psi (34 bar)	vacuum to 500 psi (34 bar)	0-150 psi (10.3 bar)	5-150 psi (0.3-10.3 bar)
Flow Range	.06 to 79	.022 to 23	.022 to 23	0.026 to 0.106	0.11 to 0.16	0.06- 0.106 Inlet 3.3-8.8 Exhaust
Port Size NPT	1/8" NPT	1/8" - 1/4" NPT	1/8" - 1/4" NPT	1/8" - 1/4" NPT	1/4" NPT	1/4"-1/2" NPT Inlet 3/8"- 3/4" NPT Exhaust
Nominal Power	10 AC watt 10.5 DC watt	6 - 8.5 AC watt 7-10 DC watt	0.85 - 1.8 watt	6 - 8.5 AC watt 7-10 DC watt	0.85 - 1.8 watt	0.85 - 7.2 Watt
Seals	NBR-Nitrile (Buna N) FKM (fluorocarbon) Optional		FKM (fluorocarbon)	NBR-Nitrile (Buna N)	FKM (fluorocarbon)	

Materials, General Purpose

Side Port	Aluminum	Page 10	—	—	—	—	—
	Stainless Steel	—	Page 13	—	Page 18	—	Page 23
Manifold Mount	Aluminum	Page 12	—	—	Page 20	—	—
	Stainless Steel	Consult Factory	—	—	Consult Factory	—	—

Materials, Hazardous Location

Side Port	Aluminum	—	—	—	—	—	—
	Stainless Steel	—	Page 14	Page 16	Page 18	Page 22	Page 23
Manifold Mount	Aluminum	—	—	—	Page 20	—	—
	—	—	—	—	—	—	—

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The E Family

Versa's E-Series valves are 2 port, 2 position and 3 port, 2 position direct acting pneumatic and hydraulic valves consisting of two body types, side ported and manifold mounted.

E Series Side-Ported valves are individually mounted with body port sizes 1/8" NPT to 1/4" NPT.

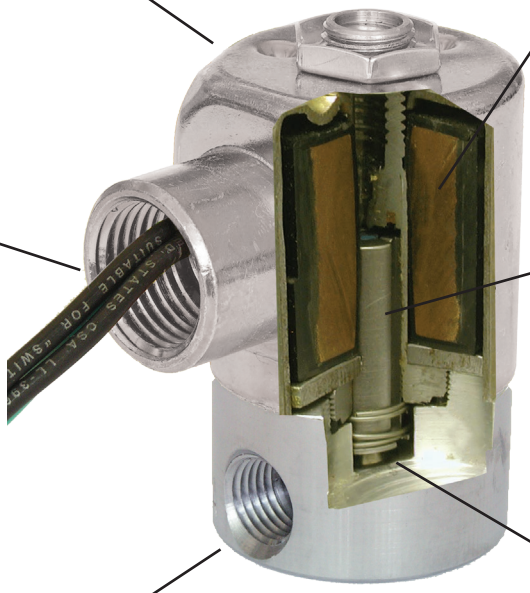
Manifold Mounting valve is direct solenoid actuated and is mounted on a manifold which can have 1 to 10 valve stations. The manifolds are provided with the threaded ports for pipe connections, which allows the valves to be easily and swiftly installed or removed without breaking any pipe connections. The manifolds also provide common ports, such as the inlet and exhaust, making only one such connection necessary per manifold.

Design for Reliability, Flexibility and Availability

Vent Options
The standard E Family valve is offered with a threaded vent port. This supports piped exhaust for gases and hydraulic applications. Other vent options are offered to keep contaminates out of the valve for long trouble, free service.

Direct Acting Solenoid Design
The E Family of solenoid valves utilize a high performance solenoid direct acting for the perfect balance of flow vs. power. Valves designed for complete pressure range including vacuum.

High Heat Epoxy Molded Coils
The E Family solenoid's are high heat rated and are all epoxy molded. A Versa standard! The epoxy molded coil yield a moisture resistance design which also dissipates heat for elevated temperature applications.



Electrical Connections
The E Family of solenoid valves offer the widest range of electrical hook connections, from ½" conduit to spade terminals and everything in between. All designed to simplify installation and serviceability. Select E Family valves are offered for hazardous location service, should application require such.

High Performance Solenoid
Near frictionless direct acting poppet deign yields positive shifting, the lowest wattage ratings and unsurpassed reliability. Life cycle ratings to 20 million cycles.

Porting Options
E Family valves are available with ⅛" or ¼" ports for ease of installation. Select Families are available in manifolded configurations for ease of installation, space savings and trouble free maintenance.

Bubble Tight Sealing
The E Family of products utilizes an elastomer sealed poppet. This design offers a bubble tight seal. Many seal materials are available to offer the greatest flexibility is application/media solutions.

Durable Materials of Construction
E Family materials are available in stainless steel or aluminum to offer the greatest flexibility in application/media solutions.

BASIC PART NUMBERING — OPTIONS

Every letter and digit in the product number of a valve has significant meaning. The product number shown below (E5SM-3201-34-A120) indicates the following:

E5SM	3	2	0	1	3	4	H2	A120
E5SM Series Solenoid, Spring Return	Three-Way	1/8" NPT	Side Ports	NC	Bottom Orifice Size	Top	Solenoid exhaust adapter	120V60 COIL

BASIC PRODUCT NUMBER

E5SM	–	3	2	0	1

	VALVE SERIES & ACTUATION	FUNCTION: Body Style	PORT SIZE	BODY DETAILS	FLOW
E5SM	E5 Series	2 Two-Way	2 1/8"NPT	0 Side Ported	1 NC (Normally Closed)
E4SM	E4 Series	3 Three-Way	3 ¼" NPT	1 Manifold Mounted	2 NO (Normally Open)
ESM	E Series	7 Two-Outlet (3-Way-Diverter)			
E3SM	E3 Series	8 Two-Inlet (3-Way-Selector)			
EZ	EZ Series, for part number selection see page 10				
EQE	EQE Series, for part number selection see page 23				
E4QE	EQE Series, for part number selection see page 23				
E5QE	EQE Series, for part number selection see page 23				

Options

Solenoid Options	
General Purpose (see page 4)	
-243	Grommeted housing (flying leads)
-228L	Epoxy formed coil with 1/2" conduit hub, NEMA 4
-HC	DIN connecter with strain relief
-HCC	DIN connecter with 1/2" conduit hub
-HCL	DIN connecter with light
-HCCL	DIN connecter with 1/2" lighted conduit hub.
-HT	High temperature coil Class H insulation.
-P	Plug-in - A connection on manifold mounted valves that provides a plug in electrical connection
-44	Low temperature seals
-PC	Potted Coil - Ingress protection, provides NEMA 4 rating.
-Z	Exhaust vent for manifolded valves
Hazardous Service (see page 6)	
-XX	Hazardous Location solenoid, North American
-XN	Hazardous Location, coil ATEX Approvals
-LB (-XX or -XN required)	Low Watt 1.8 coil (-LX for E4SM See page 16 For E3 see page 22)
-LA (-XX or -XN required)	Low Watt 0.85 coil (-LC for E4SM See page 16 For E3 see page 22)
-HT	High temperature coil Class H insulation.
-PC	Potted Coil - Ingress protection, provides NEMA 4 rating.
-44	Low temperature seals
-ST (-XX or -XN required)	Stainless steel coil housing.
-XISC (-HC or HCC required)	Intrinsic Safe electrical operator, CSA
-XISX6 (-HC or HCC required)	Intrinsic Safe electrical operator, ATEX
-XDBS*/-XDBT*	Coil enclosure, 316 stainless steel, internal junction box with multi agency approvals (see page 16).
-XIF*	Intrinsic Safe ATEX Coil with internal junction box
-XMA*	Explosion Proof solenoid coil with integral junction box and internal bridge rectifier (see page 6)
Miscellaneous	
-14 (General purpose only)	Dust Excluder – Dust Tight; protection from contamination entering the solenoid sleeve (exhaust)
-E14	Dust Excluder – Dust Tight; protection from contamination entering the solenoid sleeve (exhaust)
-L14	Dust Excluder – Dust Tight; protection from contamination entering the solenoid sleeve (exhaust)
-D14	Dust Excluder – Water Tight; protection from "dirt or water" entering the solenoid sleeve (exhaust)
-H	1/4" npt, solenoid vent adapter (for stainless steel use -HE)
-H2	1/8" npt, solenoid vent adapter (for stainless steel use -H2E)
-WE	Mounting bracket, wall mount, attached to coil housing
-WMA	Mounting bracket, bottom mount, stainless steel,
-M	Manual override, a non-locking manual override, unguarded for solenoid actuators
-MAE	Manual override, with manual override pin that extends past the guard plate
-M5R	Manual override, an unguarded, locking, with a knurled knob, push to actuate and turn to lock.

SUFFIX DETAILS

Suffix details indicate modifications or variations to the basic valve. When specifying simply add those suffix details required in alphanumeric order.

Listed below are the suffix detail modifications found in this catalog and the page on which they are noted.

	3	4	H2	A120
	BOTTOM ORIFICE	TOP ORIFICE	SUFFIX DETAILS	VOLTAGE CODE
	0 None (2-way NO) 2 1/32” 3 3/64” 4 1/16” 6 3/32” 8 1/8” 12 3/16” 16 1/4”	0 None (2-way NC) 2 1/32” 3 3/64” 4 1/16” 6 3/32”	See Options below (Partial list)	Solenoid actuated valves require a Coil Code that indicates the specific coil current frequency and voltage. The Coil Code consists of a letter to indicate the current frequency Rating Code: A= 60Hz frequency (AC) D= Direct Current (DC) E= 50Hz frequency (AC) Examples: Voltage Code 24V60 = A024 120V60 =A120 24VDC = D024 110V50 = E110

	EZ		E5SM	E4SM	ESM		E3SM	EQE		
	Side Ported	Manifold Mounted	Side Ported	Side Ported	Side Ported	Manifold Mounted	Side Ported	E4QE	E5QE	EQE
	X	X	X		X	X			X	X
	X	X	X						X	
	X	X	X		X	X			X	X
	X	X	X		X	X			X	X
	X	X	X		X	X			X	X
	X	X	X		X	X			X	X
			X		X	X			X	X
						X				
			X		X	X				
			X		X	X			X	X
		X				X				
			X		X	X			X	X
			X						X	
			X						X	
			X						X	
			X		X	X	X		X	X
			X		X	X			X	X
			X	X	X	X				
			X						X	
			X						X	
			X						X	
				X				X		
					X	X				X
					X	X				X
					X	X				X
					X	X				X
	X	X	X	X				X	X	
	X	X	X	X	X	X		X	X	X
			X	X	X	X		X	X	X
	X	X	X	X	X	X		X	X	X
					X					
			X	X	X					
					X	X				
					X	X				
					X	X				

SOLENOID SELECTOR Hazardous Location

HAZARDOUS LOCATION SOLENOIDS

	Suffix Identification	Protection Classification	Area Classification and (Gas Grouping)	Certification- (Conformance)	Ingress Protection	Series	
	-XX	Hazardous Location NEMA 7 - 9	CLASS I, DIV. 1 (C & D) CLASS I, DIV. 2 (A & B) CLASS II, DIV. 1 (E, F & G)	CSA - UL	NEMA 4, 4X (with -PC)	ESM	
	-XX		CLASS I, DIV. 1 (C & D) CLASS I, DIV. 2 (A & B) CLASS II, DIV. 1 (E, F & G)	CSA - UL	NEMA 4, 4X (with -PC)	E5	
	-LB-XX						
	XN	(d) Flameproof	Ex d IIB+H2 T3 to T6 Gb II 2 G Ex d IIB+H2 T3 to T6	IECEx ATEX	IP65 IP66 (with -PC)		
	-LB-XN						
	-XDBS* -XDBT*	(d) Flameproof (e) Increased Safety	EX II 2 G D Ex d e IIC T* Gb EX tb IIIC T* °C Db Class I Div I Grp B, C & D Class I Div II Grp E, F & G EX d IIC DIP A21 T6 T4	ATEX ATEX - IECEx -INMETRO CSA	IP66 IP67 IP68 NEMA 4, 4X 6P	E4	
	-XMAA -XMAE -XMAF	(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	ESM	
	-XMFA -XMFE -XMFF						
	-XIFA -XIFE -XIFF	(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	IECEx ATEX	IP66 IP67	ESM	
	-XISX6		II 2 G Ex ia IIC T6	ATEX	IP65		
	-XISC	Intrinsic Safe	Class I, Groups (A, B, C & D) Class II, Groups (E, F, &G) Class III	Factory Mutual CSA		E5SM	
	XPN LC-XPS	Factory Sealed	II 2 G Ex d IIB T4…T6 Gb	ATEX	IP66 IP67	E3SM	
	-XPS LC-XPS		Class I, Div 1, Group C and D Class II, Div 1, Group E, F and G, T6 Class I, Div 2, Group C and D Class II, Div 2, Group E, F and G	CSA	NEMA 4X & 6P		

*For ordering information see "Miscellaneous" column page 7

	Voltage (Power)	Electrical Characteristics	Miscellaneous
	All usual 50 Hz & 60 Hz AC (7.3W), DC (9.5W) 12V60, 24V60, 48V60, 120V60, 240V60 6VDC, 12VDC, 24VDC, 48VDC	Class F epoxy molded coil (155°C). continuous duty. 3 leads 24" (60 cm).	Plated steel coil housing with 1/2 NPT conduit entry.
	All usual 50 Hz & 60 Hz AC (6W), DC (7.2W) 12V60, 24V60, 48V60, 120V60, 240V60 6VDC, 12VDC, 24VDC, 48VDC		Plated steel coil housing with 1/2 NPT conduit entry. For stainless steel (430 type) coil housing add: (-ST)
	All usual 50 Hz & 60 Hz AC, DC (1.8W) 12V60, 24V60, 48V60, 120V60, 240V60 6VDC, 12VDC, 24VDC, 48VDC		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 (6W), DC (7.2W) 12V60, 24V60, 48V60, 120V60, 240V60 6VDC, 12VDC, 24VDC, 48VDC		Plated steel coil housing with M20 x 1.5 conduit entry. Ground terminal on cover. For stainless steel (430 type) coil housing add: (-ST)
	All usual 50 Hz & 60 Hz AC, DC (1.8W) 12V60, 24V60, 48V60, 120V60, 240V60 6VDC, 12VDC, 24VDC, 48VDC		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.	Stainless steel coil housing with internal Junction Box. Internal and external ground screw. — Suffix Detail Ordering Code M 20 Connection: No Diode / Diode; ½" Connection: No Diode / Diode Standard (vent to atmosphere): XDBS1 / XDBS5 / XDBT1 / XDBT5 1/8" Adapter (-H2E): XDBS2 / XDBS6 / XDBT2 / XDBT6 1/4" Adapter (-HE): XDBS3 / XDBS7 / XDBT3 / XDBT7 Dust Nut (-L14): XDBS4 / XDBS8 / XDBT4 / XDBT8
	24VDC (4W) (Consult factory for other voltage options)	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), (-XMFE) 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: (-XIFE) 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)
	1.8 watts 0.85 watt 12 or 24 DC	Class F, Continuous duty	Coil: ½" NPT, male hub with 72 inch wire leads, 3 wire. Not polarity dependent Epoxy molded/encapsulated (Factory Sealed), Inline off conduit hub. Not orientation sensitive, coil housing and body 316 stainless steel with FKM seal
	1.8 watts 0.85 watt 12 or 24 DC		

SOLENOID SELECTOR General Purpose

NONHAZARDOUS LOCATION SOLENOIDS

	Series	Suffix Detail	Certification-(Conformance) AC	Certification-(Conformance) DC	Ingress Protection	Voltage (Power)	Electrical Characteristics	Miscellaneous
	E5SM	Standard -PC	CSA		NEMA 1, 2, 3 & 4	24V60, 120V60, 240V60 (8W) 24V50, 110V50, 220V50 (8W) 12VDC, 24VDC, 48VDC (7W)	Class F epoxy molded coil (155°C). Continuous duty.	Steel cover with 1/2 NPT conduit entry.
	ESM	Standard -PC	CSA UL		NEMA 4; IP65	24V60, 120V60, 240V60 (7.3W) 24V50, 110V50, 220V50 (7.3W) 12VDC, 24VDC, 48VDC (9.5W)		
	EZ E5SM	-228L			NEMA 4	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W		Epoxy molded coil with integral 1/2" npt conduit hub
	E5SM	-243	CSA UL		NEMA 1, 2 & 3	24V60, 120V60, 240V60 (8W) 24V50, 110V50, 220V50 (8W) 12VDC, 24VDC, 48VDC (7W)		Steel cover with grommited (flying) leads. 2 leads 24" (60 cm)
	ESM		CSA UL		NEMA 1, 2 & 3	24V60, 120V60, 240V60 (7.3W) 24V50, 110V50, 220V50 (7.3W) 12VDC, 24VDC, 48VDC (9.5W)		Steel cover with grommited (flying) leads 2 leads 24" (60 cm)
	EZ		—	—	NEMA 1, 2 & 3	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		flying leads. 2 leads 24" (60 cm)
	EZ E5SM	-HC	CSA UL	—	NEMA 4	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Spade terminals (3). Connector: mini DIN socket with PG9 cable gland.
	ESM		—	—	IP 65	24V60, 120V60, 240V60 (12W) 24V50, 110V50, 220V50 (12W) 12VDC, 24VDC, 48VDC (10W)		Spade terminals (3) Connector pins according to Din 43650 & ISO 4400
	EZ E5SM	-HCL	CSA UL	—	NEMA 4	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Spade terminals (3). Connector: mini DIN socket with PG9 cable gland.
	ESM		—	—	IP 65	24V60, 120V60, 240V60 (12W) 24V50, 110V50, 220V50 (12W) 12VDC, 24VDC, 48VDC (10W)		Spade terminals (3) Connector pins according to Din 43650 & ISO 4400
	EZ E5SM	-HCC	CSA UL	—	NEMA 4	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Spade terminals (3). Connector: mini DIN socket with PG9 cable gland.
	ESM		—	—	IP 65	24V60, 120V60, 240V60 (12W) 24V50, 110V50, 220V50 (12W) 12VDC, 24VDC, 48VDC (10W)		Spade terminals (3) Connector pins according to Din 43650 & ISO 4400
	EZ E5SM	-HCCL	CSA UL	—	NEMA 4	24V60, 120V60, 240V60 (8.5W) 24V50, 110V50, 220V50 (8.5W) 12VDC, 24VDC, 48VDC (10.5W)		Spade terminals (3). Connector: mini DIN socket with PG9 cable gland.
	ESM		—	—	IP65	24V60, 120V60, 240V60 (12W) 24V50, 110V50, 220V50 (12W) 12VDC, 24VDC, 48VDC (10W)		Spade terminals (3) Connector pins according to Din 43650 & ISO 4400
	ESM	-P	—	—	NEMA 4; IP65			Steel cover with electrical plug-in. A Solenoid which can be removed from subplate or manifold, without disturbing the wiring

Combination Suffix Details Cross Reference Chart (E, E4 & E5)

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 (XDB_)
-LV	0.85 watt solenoid (XDB_)
-H2E	1/8" npt solenoid vent
-HE	¼" 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
-XXK4	-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

Recommended Hazardous Location Solenoid Option Packages

(For complete specifications please see above and page 6-8)

		Certification/Power			
		North American - CSA		ATEX - IECEx - INMETRO	
Series	Enclosure/Wire	Standard Power	Low Watt*	Standard Power	Low Watt*
E/E5	Steel, Electroless Nickel Plated, 24 Inch Leads	-XXL4	-XXN4	-XNL4	-XNN4
E5	Stainless Steel, High Performance 430 type, 24" wire leads	-XXE4	-XXJ4	-XNE4	-XNJ4
E4	Stainless Steel, 316L type, Junction Box with Terminal Strip	n/a	-XDBT9**	n/a	-XDBS9

*1.8 watt solenoid. Also available is 0.85 watt, see cross reference chart above, 1.8 & 0.85 not available on E. For 0.50 watt, consult factory.
**All the –XDBT type solenoids are "World Solenoids." Certified for North America, ATEX, IECEx and INMETRO and more

SERIES EZ

Side Ported Types

Series EZ valves are direct solenoid actuated valves and, physically, are the smallest of the Series E type valves. Ports are 1/8" NPT in the valve body and are individually mounted. See below for technical data.

Series EZ Bantam Multiple Manifold valves are direct solenoid actuated and have 2 to 10 valve cavities within a single body. Each valve within the manifold must be the same and perform the same function. See page 12 for part number example.

Functional Types Available	Ports Provided
2-way, NC or NO	Common inlet, individual outlets
3-way, NC	Common inlet, individual outlets, exhaust to atmosphere. Common exhaust is available.
3-way, NO	Common inlet & exhaust, individual outlets
Multipurpose	Individual "NC," "COM," & "NO" ports

Function	2-Way NC, 2-way NO, 3-way NC, 3-Way NO, Directional & Multi-Purpose
Media	Air
Pressure:	Vacuum - 500
Flow:	to 0.21 Cv
Temperature:	0°F (-18°C) to 180°F (82°C)
Ports, Inlet & Outlet:	⅛" NPT
Exhaust/vent:	Vent to atmosphere, #10-32 thread (NPT port or dust protectors available)
Voltages:	AC or DC (see selector table)
Coil rating:	Class F, continuous duty
Power:	8.5 - 10 .5 Watts
Connections:	DIN standard (-HC), Flying Leads (-243)or 1/2" NPT conduit Hub (-228L) optional
Ingress protection:	IP65 (-HC), NEMA 1 - 3 (-243), NEMA 4 (-228L)
Materials of construction:	
Seals:	FKM (fluorocarbon)
Body:	Aluminum
Manifold:	Aluminum
Coil:	Epoxy molded, Class F, continuous duty
Mounting:	(2) threaded holes

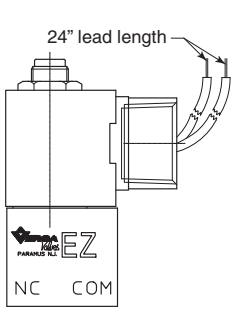


Shown with -HC, -H2

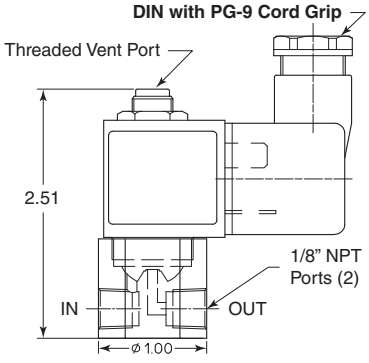


Shown with -243

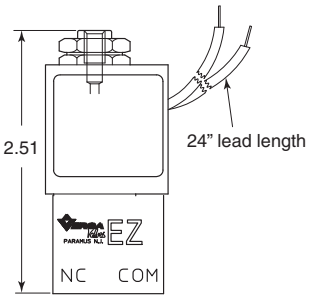
1/2" NPT Conduit Hub

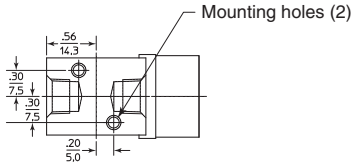


DIN with PG-9 Cord Grip



Flying Leads

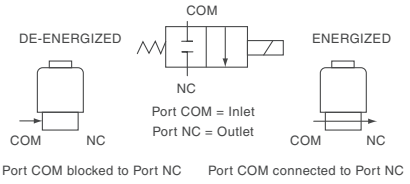
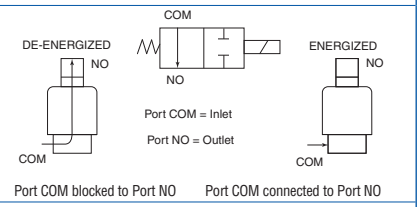
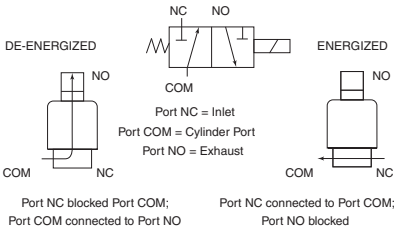
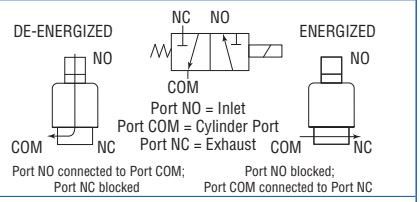
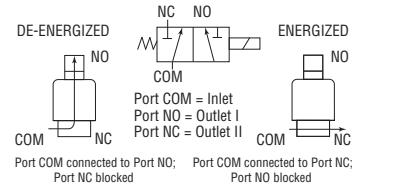
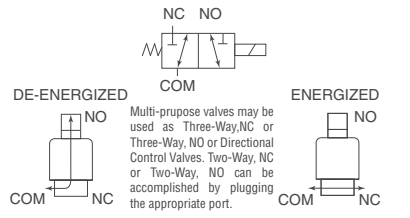




Orifice & Cv Data			
Orifice	Cv	Orifice	Cv
1/32"	0.022	1/8"	0.26
3/64"	0.06	5/32"	0.45
1/16"	0.106	3/16"	0.56
3/32"	0.21	1/4"	0.79

(STANDARD DIN STYLE COIL & CONNECTOR)

SIDE PORTED VALVES

Type	Maximum Operating Pressure Differential[1] psi (bar)	Product Number with Micromini DIN Style Connector (8 mm gap). For other housing options see page 8.	Minimum Orifice between Ports		Piping Arrangement and Flow Pattern
			"NC"- "COM"	"COM" - "NO"	
TWO-WAY 2/2 NORMALLY CLOSED Air. Oil or Water	500 (34) 400 (27) 200 (14) 150-100 (10-6.8) 65-45 (4.4-3.1)	EZ-2220-0-HC-(*) EZ-2230-0-HC-(*) EZ-2240-0-HC-(*) EZ-2260-0-HC-(*) EZ-2280-0-HC-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)		
TWO-WAY 2/2 NORMALLY OPEN Air, Oil or Water	400 (27) 200 (14) 125 (8.6) 40 (2.7)	EZ-2102-H2-HC-(*) EZ-2103-H2-HC-(*) EZ-2104-H2-HC-(*) EZ-2106-H2-HC-(*)		1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 NORMALLY CLOSED (EXHAUST TO ATMOSPHERE) Air Only	200 (14) 150 (10) 100 (6.9) 50 (3.4) 30 (2.1)	EZ-3122-1-HC-(*) EZ-3133-1-HC-(*) EZ-3144-1-HC-(*) EZ-3166-1-HC-(*) EZ-3186-1-HC-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 NORMALLY CLOSED (PIPED EXHAUST) Air, Oil or Water	200 (14) 150 (10) 100 (6.9) 50 (3.4) 30 (2.1)	EZ-3122-H2-HC-(*) EZ-3133-H2-HC-(*) EZ-3144-H2-HC-(*) EZ-3166-H2-HC-(*) EZ-3186-H2-HC-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 NORMALLY OPEN Air, Oil or Water	150 (10) 125 (8.6) 100 (6.9) 50 (3.4)	EZ-3222-H2-(*) EZ-3233-H2-(*) EZ-3244-H2-(*) EZ-3266-H2-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	
DIRECTIONAL CONTROL 3/2 Air, Oil or Water	300-200 (20-14) 200-150 (14-10) 100-75 (6.9-5.2) 75-40 (5.2-2.7)	EZ-7222-H2-HC-(*) EZ-7233-H2-HC-(*) EZ-7244-H2-HC-(*) EZ-7266-H2-HC-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	
MULTI-PURPOSE 3/2 Air, Oil or Water	125 (8.6) 100 (6.9) 65-50 (4.4-3.4) 25 (1.7)	EZ-8222-H2-HC-(*) EZ-8233-H2-HC-(*) EZ-8244-H2-HC-(*) EZ-8266-H2-HC-(*)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	

NOTES:

1.Pressures are for both AC or DC coil unless two pressures are shown. In that case, the pressure in color is for DC. Vacuum is AC only.

*Specify Voltage Code # from page 5.

SERIES EZ

Manifold-Mounting

MULTIPLE MANIFOLD TYPE VALVES (2-10 VALVES)					
Type	**Maximum Operating Pressure Differential[1] psi (bar)**	**Product Number with Micromini DIN Style Connector (8 mm gap). For Other Options See Page 8.**	**Minimum Oritice Between Ports**		**Piping Arrangement**
			"NC"-"COM"	**"COM"-"NO"**	
TWO-WAY, 2/2 Normally Closed with Common Inlet Air, Oil or Water	150 (10) 100 (6.8) 60 (4.1) 30 (2.1)	EZM-2130-**-0-HC-(*) EZM-2140-**-0-HC-(*) EZM-2160-**-0-HC-(*) EZM-2180-**-0-HC-(*)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)		"NC' port" Common Inlet for a)) valves "COM" port = Individual Outlet for each valve
TWO-WAY. 2/2 Normally Open with Common Inlet Air, Oil or Water	200 (14) 125 (8.6) 40 (2.7)	EZM-2203-**-Z-HC-(*) EZM-2204-**-Z-HC-(*) EZM-2206-**-Z-HC-(*)		3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	"NO" port = Common Inlet for all valves "COM" port = Individual outlet for each valve
THREE-WAY. 3/2 Normally Closed (Exhaust to atmosphere) with Common Inlet Air Only	150 (10) 100 (6.8) 50 (3.4) 30 (2.1)	EZM-3133-**-1-HC-(*) EZM-3144-**-1-HC-(*) EZM-3166-**-1-HC-(*) EZM_3186-**-1-HC.(*)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	"NC" port = Common Inlet for all valves "COM" port" Individual outlet for each valve "NO" port" Individual exhaust for each valve
THREE-WAY, 3/2 Normally Closed (Piped exhaust) with Common Inlet & Common Exhaust Air, Oil or Water	150 (10) 100 (6.8) 50 (3.4) 30 (2.1)	EZM-3133-**-Z-HC-(*) EZM-3144-**-Z-HC-(*) EZM-3166-**-Z-HC-(*) EZM-3186-**-Z-HC-(*)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	3/64" (1.2 mm) 1116" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	"NC" port = Common Inlet for a)) valves "COM" port" Individual Outlet for each valve "NO" port "Common Exhaust for all valves
THREE-WAY, 3/2 Normally Open with Common Inlet & Common Exhaust Air, Oil or Water	125 (8.6) 100 (6.8) 50 (3.4)	EZM-3233-**-Z-HC-(*) EZM-3244-**-Z-HC-(*) EZM-3266-**-Z-HC-(*)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	"NO" port = Common Inlet for all valves COM" port" Individual Outlet for each valve "NO" port" Common Exhaust for all valves
MULTIPURPOSE. 3/2 with Common "NC" Port (See Also Note @) Air, Oil or Water	100 (6.8) 65-50 (4.4-3.4) 25 (1.7)	EZM-8233-**-†-HC-(*) EZM-8244-**-†-HC-(*) EZM-8266-**-†-HC-(*)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	The Function Table below lists all the possible valve functions which can be obtained by just changing the connections

NOTES:

1. Pressures are for both AC or DC coil unless two pressures are shown. In that case, the pressure shown in color is for DC.

*Specify Voltage Code # from page 5.

**Specify number of valve stations required, 2 thru 10.

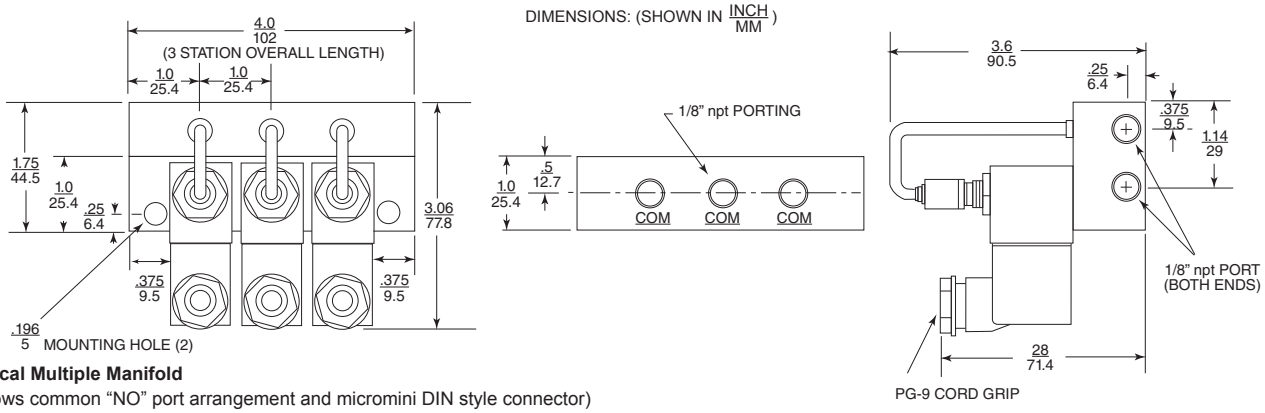
† "NO" Port variations available

Function Table						
Port	2-Way NO	2-Way NC	3-Way NO	3-Way NC	Selector	Diverter
NC	Plug	Inlet	Exhaust	Inlet	Inlet	Outlet
NO	Inlet	Plug	Inlet	Exhaust	Inlet	Outlet
COM	Outlet	Outlet	Outlet	Outlet	Outlet	Inlet

—1—	"NO" valve ports are un-piped and exchange to atmosphere.
—H2—	Each "NO" valve port is provided with a 1/8" NPT adapter for piping each "NO" port individually.
—Z—	"NO" ports of all valves are connected to a common "NO" port in the manifold.



Orifice & Cv Data			
Orifice	Cv	Orifice	Cv
1/32"	0.022	1/8"	0.26
3/64"	0.06	5/32"	0.45
1/16"	0.106	3/16"	0.56
3/32"	0.21	1/4"	0.79



Typical Multiple Manifold

(Shows common "NO" port arrangement and micromini DIN style connector)

SERIES E5 *compact*

Side Ported Types

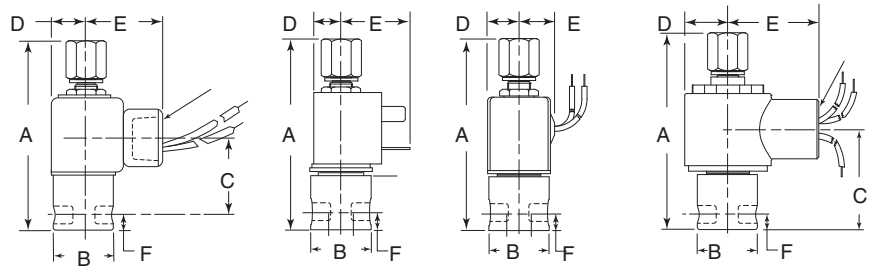
Series E5 *compact* valves are direct solenoid actuated Valves. They are physically smaller than the Series E *full-size* valves described on pages 18 through 21, but offer most of the same orifice sizes and operating pressure ranges as the larger valves. Ports are 1/8 NPT in the valve body and the valves are individually mounted.

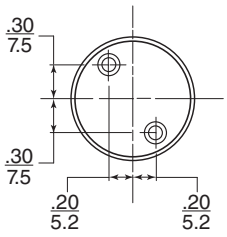
Function	2-Way NC, 2-way NO, 3-way NC, 3-Way NO, & Directional.
Media	Air / Gas / Hydraulic
Pressure:	to 500 psi (see table page 14)
Flow:	to 0.26 Cv
Temperature:	0°F to 180°F (-18°C to 82°C)
Ports, Inlet & Outlet:	⅛" or ¼" NPT
Exhaust/vent:	Vent to atmosphere, #10-32 thread (NPT port or dust protectors available)
Voltages:	AC or DC
Coil rating:	Class F, continuous duty
Power:	8.5 - 10.5 watt
Connections:	½" NPT
Ingress protection:	NEMA 1, 2,3 & 4/4X,
Ordinary Location	NEMA 1, 2,3 & 4/4X,
Hazardous Location	NEMA 7, 9, 4/4X, FM & ATEX
Materials of construction:	
Body:	430 Stainless (316 Stainless Steel optional)
Seals	NBR (Nitrile)
Coil:	Epoxy molded
Mounting:	(2) threaded holes (optional bracket -WMA)

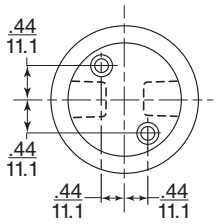
ORDINARY LOCATION COILS (NEMA 1, 2, 3)

1/8" NPT Ports **1/4" NPT Ports**









1/8" Body Mounting Hole Dimension 1/4" Body

HAZARDOUS LOCATION COILS (NEMA 7 & 9)



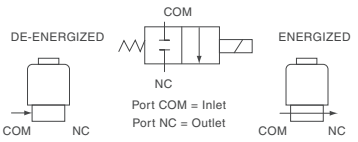
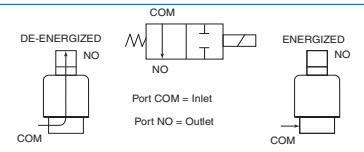
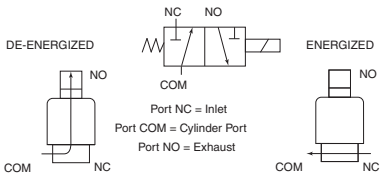
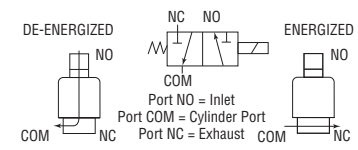
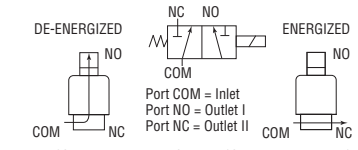
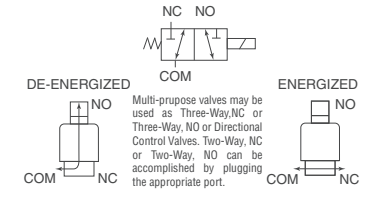
1/8" NPT Ports



1/4" NPT Ports

		A		B		C		D		E		F	
		IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
1/8" Ports	-HC	3	76.2	1	25.4	1.6	40.6	2.9	73.7	0.67	17	0.3	7.6
	-243	3	76.2	1	25.4	—	—	0.52	13.2	0.69	17.5	0.3	7.6
	STD	3	76.2	1	25.4	1.26	32	0.52	13.2	1.34	34	0.3	7.6
	-XX -XN	3.28	83	1	25.4	1.35	34.3	0.72	18.2	1.5	38.5	0.3	7.6
1/4" Ports	-HC	3.07	78	1.34	.34	1.4	35.6	.75	19	0.67	17	0.34	8.6
	-243	3.2	81.2	1.34	.34	—	—	0.52	13.2	0.69	17.5	0.34	8.6
	STD	3.2	81.2	1.34	.34	1.09	27.7	0.52	13.2	1.34	34.1	0.34	8.6
	XX -XN	3.3	83	1.34	.34	1.48	37.6	0.72	18.3	1.5	38.5	0.34	8.6

Side Ported Types

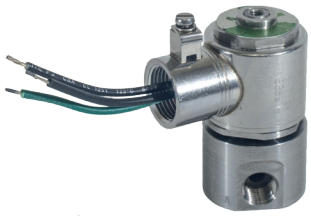
Type	Maximum Operating Pressure Differential psi (bar)†† AC	Maximum Operating Pressure Differential psi (bar)†† DC	ORDINARY LOCATIONS (For Coil Voltages See Page 4) Product Number 1/8" BODY PORTS	Product Number 1/4" BODY PORTS	Min. Orifice between Ports "NC"-"COM"	Min. Orifice between Ports "COM"-"NO"	Piping Arrangement and Flow Pattern
TWO-WAY 2/2 NORMALLY CLOSED Air, Oil or Water	500 (34) 400 (27) 200 (14) 100 (6.9) 75 (5.2)	250 (17) 150 (10) 100 (6.9) 45 (3.1) 25 (1.7)	**E5SM-2201-20-(*)** **E5SM-2201-30-(*)** **E5SM-2201-40-(*)** **E5SM-2201-60-(*)** **E5SM-2201-80-(*)**	**E5SM-2301-20-(*)** **E5SM-2301-30-(*)** **E5SM-2301-40-(*)** **E5SM-2301-60-(*)** **E5SM-2301-80-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)		 Port COM blocked to Port NC Port COM connected to Port NC
TWO-WAY 2/2 NORMALLY OPEN Air, Oil or Water	400 (27) 200 (14) 125 (8.6)	200 (14) 100 (6.9) 60 (4.1)	**E5SM-2202-03-H2.(*)** **E5SM-2202-04-H2-(*)** **E5SM-2202-06-H2-(*)**	**E5SM-2302-03-H2.(*)** **E5SM-2302-04-H2-(*)** **E5SM-2202-06-H2-(*)**		1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	 Port COM blocked to Port NO Port COM connected to Port NO
THREE-WAY 3/2 NORMALLY CLOSED (EXHAUST TO ATMOSPHERE) Air Only	200 (14) 150 (10) 150 (10) 100 (6.9) 60 (4.1) 30 (2.1)	200 (14) 150 (10) 150 (10) 100 (6.9) 60 (4.1) 30 (2.1)	**E5SM-3201-22-(*)** **E5SM-3201-33-(*)** **E5SM-3201-34-(*)** **E5SM-3201-44-(*)** **E5SM-3201-64-(*)** **E5SM-3201-84-(*)**	**E5SM-3301-22-(*)** **E5SM-3301-33-(*)** **E5SM-3301-34-(*)** **E5SM-3301-44-(*)** **E5SM-3301-64-(*)** **E5SM-3301-84-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	 Port NC blocked Port COM; Port COM connected to Port NO Port NC connected to Port COM; Port NO blocked
THREE-WAY 3/2 NORMALLY CLOSED (PIPED EXHAUST) Air, Oil or Water	200 (14) 150 (10) 150 (10) 100 (6.9) 60 (4.1) 30 (2.1)	200 (14) 150 (10) 150 (10) 100 (6.9) 60 (4.1) 30 (2.1)	**E5SM-3201-22-H2-(*)** **E5SM-3201-33-H2-(*)** **E5SM-3201-34-H2-(*)** **E5SM-3201-44-H2-(*)** **E5SM-3201-64-H2-(*)** **E5SM-3201-84-H2-(*)**	**E5SM-3301-22-H2-(*)** **E5SM-3301-33-H2-(*)** **E5SM-3301-34-H2-(*)** **E5SM-3301-44-H2-(*)** **E5SM-3301-64-H2-(*)** **E5SM-3301-84-H2-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	
THREE-WAY 3/2 NORMALLY OPEN Air, Oil or Water	150 (10) 125 (8.6) 100 (6.9) 75 (5.2)	150 (10) 125 (8.6) 75(5.2) 45 (3.1)	**E5SM-3202-22-H2-(*)** **E5SM-3202-33-H2-(*)** **E5SM-3202-44-H2-(*)** **E5SM-3202-64-H2-(*)**	**E5SM-3302-22-H2-(*)** **E5SM-3302-33-H2-(*)** **E5SM-3302-44-H2-(*)** **E5SM-3302-64-H2-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	 Port NO connected to Port COM; Port NC blocked Port NO blocked; Port COM connected to Port NC
THREE-WAY 3/2 DIRECTIONAL CONTROL Air, Oil or Water	300 (21) 200 (14) 100 (6.9) 75 (5.2)	200 (14) 100 (6.9) 50 (3.4) 25 (1.7)	**E5SM-7202-22-H2-(*)** **E5SM-7202-33-H2-(*)** **E5SM-7202-44-H2-(*)** **E5SM-7202-64-H2-(*)**	**E5SM-7302-22-H2-(*)** **E5SM-7302-33-H2-(*)** **E5SM-7302-44-H2-(*)** **E5SM-7302-64-H2-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	 Port COM connected to Port NO; Port NC blocked Port COM connected to Port NC; Port NO blocked
THREE-WAY 3/2 MULTI-PURPOSE Air, Oil or Water	125 (8.6) 100 (6.9) 65 (4.5)	125 (8.6) 100 (6.9) 50 (3.4)	**E5SM-8202-22-H2-(*)** **E5SM-8202-33-H2-(*)** **E5SM-8202-44-H2-(*)**	**E5SM-8302-22-H2-(*)** **E5SM-8302-33-H2-(*)** **E5SM-8302-44-H2-(*)**	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	

NOTES:
*Specify Voltage Code # from page 5.
†For air only.
†† MPa = $\frac{\text{bar}}{10}$

Standard Wattage	Maximum Operating Pressure Differential psi (bar)††	HAZARDOUS LOCATION VALVES			
Product Number (For Coil Voltages See Page 5)		Product Number			
		1/8" BODY PORTS		1/4" BODY PORTS	
	AC or DC	1.8 Watt	0.85 Watt	1.8 Watt	0.85 Watt
E5SM-2201-20-XX-(*) E5SM-2201-30-XX-(*) E5SM-2201-40-XX-(*) E5SM-2201-60-XX-(*) E5SM-2201-80-XX-(*)	120 (8.3) 80 (5.5) 50 (3.4)	E5SM-2201-20-LB-XX-(*) E5SM-2201-30-LB-XX-(*) E5SM-2201-40-LB-XX-(*)	E5SM-2201-20-LA-XX-(*)	E5SM-2301-20-LB-XX-(*) E5SM-2301-30-LB-XX-(*) E5SM-2301-40-LB-XX-(*)	E5SM-2301-20-LA-XX-(*)
E5SM-2202-02-H2-XX-(*) E5SM-2202-03-H2-XX-(*) E5SM-2202-04-H2-XX-(*)	120 (8.3) 80 (5.5) 50 (3.4)	E5SM-2202-02-H2-LB-XX-(*) E5SM-2202-03-H2-LB-XX-(*) E5SM-2202-04-H2-LB-XX-(*)	E5SM-2202-02-H2-LA-XX-(*)	E5SM-2302-02-H2-LB-XX-(*) E5SM-2302-03-H2-LB-XX-(*) E5SM-2302-04-H2-LB-XX-(*)	E5SM-2302-02-H2-LA-XX-(*)
E5SM-3201-22-XX-(*) E5SM-3201-33-XX-(*) E5SM-3201-34-XX-(*) E5SM-3201-44-XX-(*) E5SM-3201-64-XX-(*) E5SM-3201-84-XX-(*)	120 (8.3) 60 (4.1) 30 (2.1)	E5SM-3201-23-LB-XX-(*) E5SM-3201-33-LB-XX-(*) E5SM-3201-44-LB-XX-(*)	E5SM-3201-22-LA-XX-(*)	E5SM-3301-23-LB-XX-(*) E5SM-3301-33-LB-XX-(*) E5SM-3301-44-LB-XX-(*)	E5SM-3301-22-LA-XX-(*)
E5SM-3201-22-H2-XX-(*) E5SM-3201-33-H2-XX-(*) E5SM-3201-34-H2-XX-(*) E5SM-3201-44-H2-XX-(*) E5SM-3201-64-H2-XX-(*) E5SM-3201-84-H2-XX-(*)	120 (8.3) 60 (4.1) 30 (2.1)	E5SM-3201-23-H2-LB-XX-(*) E5SM-3201-33-H2-LB-XX-(*) E5SM-3201-44-H2-LB-XX-(*)	E5SM-3201-22-H2-LA-XX-(*)	E5SM-3301-23-H2-LB-XX-(*) E5SM-3301-33-H2-LB-XX-(*) E5SM-3301-44-H2-LB-XX-(*)	E5SM-3301-22-H2-LA-XX-(*)
E5SM-3202-22-H2-XX-(*) E5SM-3202-33-H2-XX-(*) E5SM-3202-44-H2-XX-(*) E5SM-3202-64-H2-XX-(*)					
E5SM-7202-22-H2-XX-(*) E5SM-7202-33-H2-XX-(*) E5SM-7202-44-H2-XX-(*) E5SM-7202-64-H2-XX-(*)					
E5SM-8202-22-H2-XX-(*) E5SM-8202-33-H2-XX-(*) E5SM-8202-44-H2-XX-(*)					



1/8" Body
1/2" NPT Conduit
Connector
(-XX Type)



1/4" Body
1/2" NPT Conduit
Connector
(-XN Type)

Orifice & Cv Data			
Orifice	Cv	Orifice	Cv
1/32"	0.022	1/8"	0.26
3/64"	0.06	5/32"	0.45
1/16"	0.106	3/16"	0.56
3/32"	0.21	1/4"	0.79

SERIES E4 *COMPACT*

XDB World Solenoid Valve

A compact, heavy duty solenoid valve with integral junction box for hazardous location service. Valve and junction box are stainless steel for superior corrosion resistance. Worldwide certifications available. Valves available in 2-Way, 3-Way, selectors or diverters functions. All products are rated for air, gas, oil or water. Porting available in 1/8" or 1/4" NPT for tubing convenience.

Pressure:	to 400 psi (see selector table)
Flow:	to 0.26 Cv (see selector table)
Temperature:	+5°F to 194°F (-15°C to 90°C) -40°F to 194°F (-40°C to 90°C)(low temp option -44)
Ports, Inlet & Outlet:	⅛" or ¼" NPT
Exhaust/vent:	Vent to atmosphere, #10-32 thread (NPT port or dust protectors available)
Voltages:	AC or DC (see selector table)
Coil rating:	Class H, continuous duty
Power:	1.8 or 0.85 watt
Connections:	½" NPT or M20 conduit hub
Ingress protection:	IP 66/67/68 NEMA 4X, 6P
Materials of construction:	
Body:	430 Stainless (316 Stainless Steel optional)
Housing:	FKM-fluorocarbon (Low Temp Nitrile optional)
Coil:	Epoxy molded
Mounting:	(2) threaded holes (optional bracket -WMA)



Shown with Dust Nut and Mounting Bracket

	-XDBS M20 x 1,5	XDBT ½" NPT
CSA North American	NA	Class I, Group B, C, D Class II, Group E, F, G Class III
ATEX	II 2 GD Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db	II 2 GD Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db
IECEx	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db
INMETRO	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4C Db
Russia, Kazakhstan and Belarus	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4 Db	Ex d e IIC T4 Gb Ex tb IIIC IP66 T4 Db

Stainless steel coil housing with internal Junction Box. Internal and external ground screw.	Suffix Detail Ordering Code			
	M 20 Connection		½" 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 (-HE)	XDBS3	XDBS7	XDBT3	XDBT7
Dust Nut (-L14)	XDBS4	XDBS8	XDBT4	XDBT8

Suffix Details above are for 1.8 watt coils. For 0.85 watt coil add a "C"as last character to above. Example: XDBS1C See tables opposite page

Options - Suffix Details



Excluders

-L14 Dust Proof



-D14 Water Tight



Hydraulic Adapter

-H2E ⅛"
-HE ¼"

1.8 Watt
Product Selector

TYPE Media	Maximum Differential/ Operating Pressure psi (bar)	Orifice/Flow "A" to "B" In (mm)	Orifice/Flow "A" to "B" Cv	Orifice/Flow "B" to "C" In (mm)	Orifice/Flow "B" to "C" Cv	Product Number For Pneumatic and Hydraulic Service 1/8" NPT	Product Number For Pneumatic and Hydraulic Service 1/4" NPT
TWO-WAY 2/2 NORMALLY CLOSED	400 (27.6) 300 (20.7) 200 (13.8) 100 (6.9) 50 (3.4)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	0.022 0.06 0.106 0.21 0.26			E4SM-2201-20-XDB**-voltage E4SM-2201-30-XDB**-voltage E4SM-2201-40-XDB**-voltage E4SM-2201-60-XDB**-voltage E4SM-2201-80-XDB**-voltage	E4SM-2301-20-XDB**-voltage E4SM-2301-30-XDB**-voltage E4SM-2301-40-XDB**-voltage E4SM-2301-60-XDB**-voltage E4SM-2301-80-XDB**-voltage
TWO-WAY 2/2 NORMALLY OPEN	300 (20.7) 150 (10.3) 100 (6.9) 50 (3.4)			1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	0.022 0.06 0.106 0.21	E4SM-2202-02-XDB**-voltage E4SM-2202-03-XDB**-voltage E4SM-2202-04-XDB**-voltage E4SM-2202-06-XDB**-voltage	E4SM-2302-02-XDB**-voltage E4SM-2302-03-XDB**-voltage E4SM-2302-04-XDB**-voltage E4SM-2302-06-XDB**-voltage
THREE-WAY 3/2 NORMALLY CLOSED (Exhaust to atm)	200 (13.8) 175 (12.1) 125 (8.6) 75 (5.2)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	0.022 0.06 0.106 0.21	3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	0.06 0.106 0.106 0.106	E4SM-3201-23-XDB**-voltage E4SM-3201-34-XDB**-voltage E4SM-3201-44-XDB**-voltage E4SM-3201-64-XDB**-voltage	E4SM-3301-23-XDB**-voltage E4SM-3301-34-XDB**-voltage E4SM-3301-44-XDB**-voltage E4SM-3301-64-XDB**-voltage
THREE-WAY 3/2 NORMALLY CLOSED (Piped exhaust)	200 (13.8) 175 (12.1) 125 (8.6) 75 (5.2)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	0.022 0.06 0.106 0.21	3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	0.06 0.106 0.106 0.106	E4SM-3201-23-XDB**-voltage E4SM-3201-34-XDB**-voltage E4SM-3201-44-XDB**-voltage E4SM-3201-64-XDB**-voltage	E4SM-3301-23-XDB**-voltage E4SM-3301-34-XDB**-voltage E4SM-3301-44-XDB**-voltage E4SM-3301-64-XDB**-voltage
THREE-WAY 3/2 NORMALLY OPEN	150 (10.3) 100 (6.9) 75 (5.2) 50 (3.4)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	.022 0.06 0.106 0.21	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	.022 0.06 0.106 0.106	E4SM-3202-22-XDB**-voltage E4SM-3202-33-XDB**-voltage E4SM-3202-44-XDB**-voltage E4SM-3202-64-XDB**-voltage	E4SM-3302-22-XDB**-voltage E4SM-3302-33-XDB**-voltage E4SM-3302-44-XDB**-voltage E4SM-3302-64-XDB**-voltage
THREE-WAY 3/2 DIRECTIONAL CONTROL	250 (17.2) 200 (13.8) 150 (10.3) 120 (8.3)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	.022 0.06 0.106 0.21	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	0.022 0.06 0.106 0.106	E4SM-7202-22-XDB**-voltage E4SM-7202-33-XDB**-voltage E4SM-7202-44-XDB**-voltage E4SM-7202-64-XDB**-voltag	E4SM-7302-22-XDB**-voltage E4SM-7302-33-XDB**-voltage E4SM-7302-44-XDB**-voltage E4SM-7302-64-XDB**-voltage
THREE-WAY 3/2 MULTI-PURPOSE	150 (10.3) 75 (5.2) 60 (4.1) 30 (2.1)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	.022 0.06 0.106 0.21	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)	0.022 0.06 0.106 0.106	E4SM-8202-22-XDB**-voltage E4SM-8202-33-XDB**-voltage E4SM-8202-44-XDB**-voltage E4SM-8202-64-XDB**-voltage	E4SM-8302-22-XDB**-voltage E4SM-8302-33-XDB**-voltage E4SM-8302-44-XDB**-voltage E4SM-8302-64-XDB**-voltage

Voltages, AC 120/60 (-A120), 110/50 (-E110), 240/60 (-A240), 220/50 (-E220) DC 24 vdc (-D024), 48 vdc (-D048), 12 vdc (-D012), 110 vdc (-D110), 220 vdc (D220)

** Product Number. Complete product number by inserting one of the following in place of the **: S1 = M20 conduit connection, no diode, T1 = ½" npt conduit connection no diode, S5 = M20 conduit connection with diode, T5 = ½" npt conduit connection with diode.

0.85 Watt
Product Selector

TYPE Media	Maximum Differential/ Operating Pressure psi (bar)	Orifice/Flow "A" to "B" In (mm)	Orifice/Flow "A" to "B" Cv	Orifice/Flow "B" to "C" In (mm)	Orifice/Flow "B" to "C" Cv	Product Number For Pneumatic and Hydraulic Service 1/8" NPT	Product Number For Pneumatic and Hydraulic Service 1/4" NPT
TWO-WAY 2/2 NORMALLY CLOSED	250 (17.2) 150 (10.3) 80 (5.5	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106			E4SM-2201-20-XDB***-voltage E4SM-2201-30-XDB***-voltage E4SM-2201-40-XDB***-voltage	E4SM-2301-20-XDB***-voltage E4SM-2301-30-XDB***-voltage E4SM-2301-40-XDB***-voltage
TWO-WAY 2/2 NORMALLY OPEN	175 (12.1) 100 (6.9)			1/32" (0.8 mm) 3/64" (1.2 mm)	0.022 0.06	E4SM-2302-02-XDB***-voltage E4SM-2302-03-XDB***-voltage	E4SM-2302-02-XDB***-voltage E4SM-2302-03-XDB***-voltage
THREE-WAY 3/2 NORMALLY CLOSED (Exhaust to atm)	150 (10.3) 125 (8.6) 100 (6.9) 75 (5.2) 40 (2.8) 25 (1.7)	1/32" (0.8 mm) 3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	0.022 0.06 0.06 0.106 0.21 0.21	3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm)/ 1/16" (1.6 mm) 3/32" (2.4 mm)	0.06 0.06 0.106 0.106 0.106 0.21	E4SM-3201-23-XDB***-voltage E4SM-3201-33-XDB***-voltage E4SM-3201-34-XDB***-voltage E4SM-3201-44-XDB***-voltage E4SM-3201-64-XDB***-voltage E4SM-3201-66-XDB***-voltage	E4SM-3301-23-XDB***-voltage E4SM-3301-33-XDB***-voltage E4SM-3301-34-XDB***-voltage E4SM-3301-44-XDB***-voltage E4SM-3301-64-XDB***-voltage E4SM-3301-66-XDB***-voltage
THREE-WAY 3/2 NORMALLY CLOSED (Piped exhaust)	150 (10.3) 125 (8.6) 100 (6.9) 75 (5.2) 40 (2.8) 25 (1.7)	1/32" (0.8 mm) 3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	0.022 0.06 0.06 0.106 0.21 0.21	3/64" (1.2 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)/ 1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	0.06 0.06 0.106 0.106 0.106 0.21	E4SM-3201-23-XDB***-voltage E4SM-3201-33-XDB***-voltage E4SM-3201-34-XDB***-voltage E4SM-3201-44-XDB***-voltage E4SM-3201-64-XDB***-voltage E4SM-3201-66-XDB***-voltage	E4SM-3301-23-XDB***-voltage E4SM-3301-33-XDB***-voltage E4SM-3301-34-XDB***-voltage E4SM-3301-44-XDB***-voltage E4SM-3301-64-XDB***-voltage E4SM-3301-66-XDB***-voltage
THREE-WAY 3/2 NORMALLY OPEN	125 (8.6) 100 (6.9) 60 (4.1)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106	E4SM-3202-22-XDB***-voltage E4SM-3202-33-XDB***-voltage E4SM-3202-44-XDB***-voltage	E4SM-3302-22-XDB***-voltage E4SM-3302-33-XDB***-voltage E4SM-3302-44-XDB***-voltage
THREE-WAY 3/2 DIRECTIONAL CONTROL	110 (7.6) 100 (6.9) 80 (5.5	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.22 0.06 0.106	E4SM-7202-22-XDB***-voltage E4SM-7202-33-XDB***-voltage E4SM-7202-44-XDB***-voltage	E4SM-7302-22-XDB***-voltage E4SM-7302-33-XDB***-voltage E4SM-7302-44-XDB***-voltage
THREE-WAY 3/2 MULTI-PURPOSE	125 (8.6) 100 (6.9) 40 (2.8)	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106	1/32" (0.8 mm) 3/64" (1.2 mm) 1/16" (1.6 mm)	0.022 0.06 0.106	E4SM-8202-22-XDB***-voltage E4SM-8202-33-XDB***-voltage E4SM-8202-44-XDB***-voltage	E4SM-8302-22-XDB***-voltage E4SM-8302-33-XDB***-voltage E4SM-8302-44-XDB***-voltage

Voltages 24 vdc (-D024), 48 vdc (-D048), 12 vdc (-D012)

*** Product Number. Complete product number by inserting one of the following in place of the ***: S1C = M20 conduit connection, no diode, T1C = ½" npt conduit connection no diode, S5C = M20 conduit connection with diode, T5C = ½" npt conduit connection with diode.

SERIES E *FULL SIZE*

Side Ported Types

Series E Full-Size Side-Ported valves are direct solenoid actuated and are individually mounted. 1/8 NPT or 1/4 NPT ports are provided in the valve body.

Function	2-Way NC, 2-way NO, 3-way NC, 3-Way NO, Directional & Multi-Purpose.
Media	Air / Gas / Hydraulic
Pressure:	to 250 psi (see table page 19)
Flow:	to 0.26 Cv (see table below)
Temperature:	0°F to 180°F (-18°C to 82°C)
Ports, Inlet & Outlet:	⅛" or ¼" NPT
Exhaust/vent:	Vent to atmosphere, #10-32 thread (NPT port or dust protectors available)
Voltages:	AC or DC (see page 7 or 8)
Coil rating:	Class F, continuous duty
Power:	7.3 - 12 watt
Connections:	½" NPT
Ingress protection:	NEMA 1, 2,3 & 4/4X,
Ordinary Location	NEMA 1, 2,3 & 4/4X,
Hazardous Location	NEMA 7, 9 & 4/4X
Materials of construction:	
Body:	430 Stainless (316 Stainless Steel optional)
Seals	NBR (Nitrile)
Coil:	Epoxy molded
Mounting:	(2) threaded holes (optional bracket -WE)

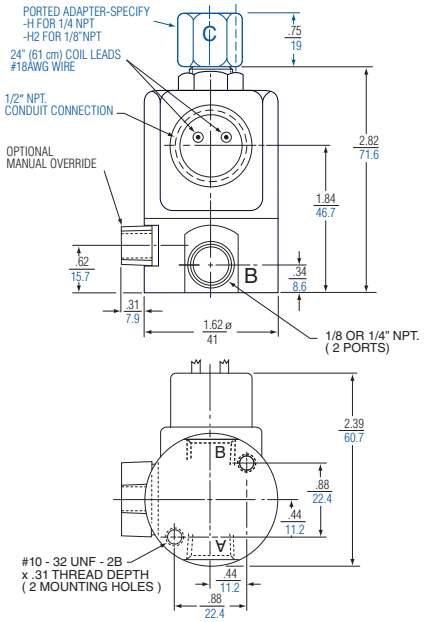


HAZARDOUS LOCATIONS

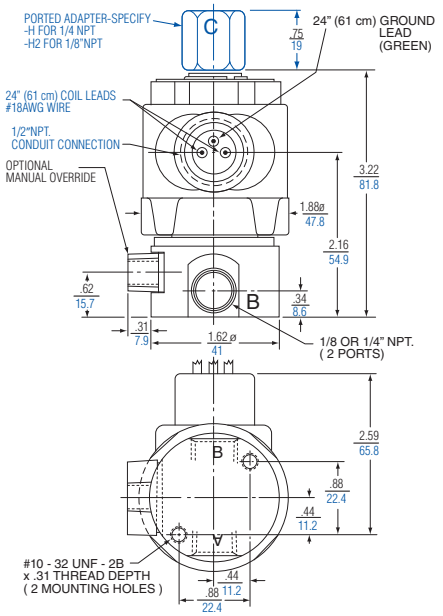


ORDINARY LOCATIONS

ORDINARY LOCATIONS (NEMA 1,2,3)



HAZARDOUS LOCATIONS (NEMA 7&9)

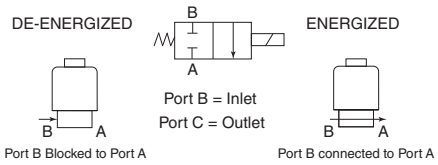
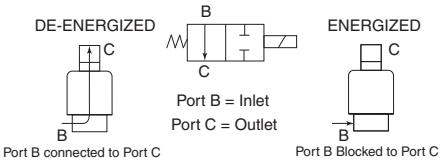
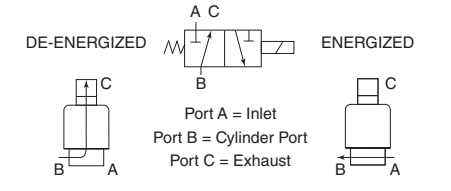
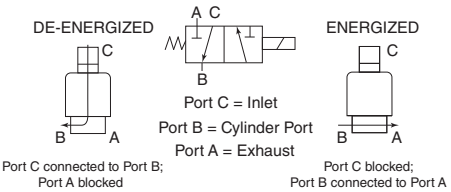
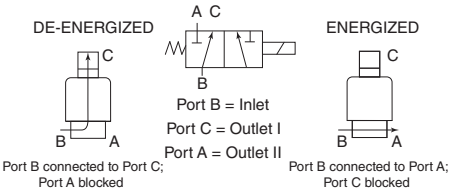
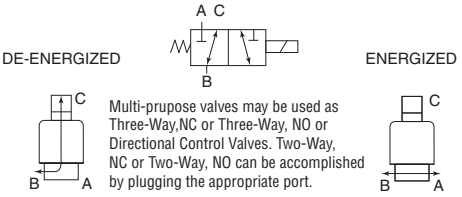


Orifice & Cv Data	
Orifice	Cv
1/32"	0.022
3/64"	0.06
1/16"	0.106
3/32"	0.21
1/8"	0.26
5/32"	0.45
3/16"	0.56
1/4	0.79

DIMENSIONS SHOWN IN INCH / MM

Color shows piped port C or normally open valve; metric dimensions.

Coil cover shown is supplied as standard and provides housing with threaded boss for conduit connection. Other housing types are available. See Suffix Detail Options on page 4.

Type	Maximum Operating Pressure Differential[1] psi (bar)	ORDINARY LOCATIONS (For Coil Voltages See Page 8) Product Number with conduit type coil housing. For other housing options see page 8. 1/8" NPT	1/4" NPT	Min. Orifice between Ports "A" - "B"	"B" - "C"	Piping Arrangement and Flow Pattern
TWO-WAY 2/2 NORMALLY CLOSED Air, Oil or Water	250 (17) 200 (14) 125 (8.6) 100 (6.9) 75-50 (5.2-3.4) 50-25 (3.4-1.7) 20-5 (1.4-03)	**ESM-2201-30-(*)** **ESM-2201-40-(*)** **ESM-2201-60-(*)** **ESM-2201-80-(*)** **ESM-2201-100-(*)** **ESM-2201-120-(*)** **ESM-2201-160-(*)**	**ESM-2301-30-(*)** **ESM-2301-40-(*)** **ESM-2301-60-(*)** **ESM-2301-40-(*)** **ESM-2301-100-(*)** **ESM-2301-120-(*)** **ESM-2301-160-(*)**	3/64" (1.2mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2mm) 5/32" (4.0 mm) 3/16" (4.8 mm) 1/4" (6.4 mm)		
TWO-WAY 2/2 NORMALLY OPEN Air, Oil or Water	200 (14) 150 (10) 125 (8.6)	**ESM-2202-03-H2-(*)** **ESM-2202-04-H2-(*)** **ESM-2202-06-H2-(*)**	**ESM-2302-03-H-(*)** **ESM-2302-04-I4-(*)** **ESM-2302-06-H-(*)**		3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 NORMALLY CLOSED (EXHAUST TO ATMOSPHERE) Air Only	150 (10) 100 (6.9) 75 (5.2) 50 (3.4) 20 (1.4) Vac-AC Only	**ESM.3201-34-(*)** **ESM-3201-44-(*)** **ESM-3201-66-(*)** **ESM-3201-86-(*)** **ESM-3201-126-(*)** **ESM-3201-160-(*)**	**ESM-3301-34-(*)** **ESM-3301-44-(*)** **ESM-3301-66-(*)** **ESM-3301-86-(*)** **ESM-3301-I26-(*)** **ESM-3301-166-(*)**	3/64" (1.2 mm) 1/15" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm) 3/16" (4.8 mm) 1/4" (6.4 mm)	1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (24 mm)	
THREE-WAY 3/2 NORMALLY CLOSED (PIPED EXHAUST) Air, Oil or Water	150 (10) 100 (6.9) 75 (5.2) 50 (3.4) 20 (1.4) Vacuum-AC Only	**ESM-3201-34-H2-(*)** **ESM-3201-44.H2-(*)** **ESM-3201-66.H2-(*)** **ESM-3201-86-H2-(*)** **ESM-3201-126-H2(*)** **ESM-3201-166-H2-(*)**	**ESM-3301-34-H-(*)** **ESM-3301-44-H-(*)** **ESM-3301-66-H-(*)** **ESM-3301-86-H-(*)** **ESM-3301-126-H-(*)** **ESM-3301-166-H-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm) 3/16" (4.8 mm) 1/4" (6.4 mm)	1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 NORMALLY OPEN Air, Oil or Water	150 (10) 100 (6.9) 100 (6.9) 75 (5.2) 75 (5.2)	**ESM-3202-43-H2-(*)** **ESM-3202-44-H2-(*)** **ESM-3202-84-H2-(*)** **ESM-3202-66-I12-(*)** **ESM-3202-86-H2-(*)**	**ESM-3302-43-H-(*)** **ESM-3302-44-H-(*)** **ESM-3302-84-H-(*)** **ESM-3302-66-H-(*)** **ESM-3302-86-H-(*)**	1/16" (1.6 mm) 1/16" (1.6 mm) 1/8" (3.2 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 DIRECTIONAL CONTROL Air, Oil or Water	200 (14) 150 (10) 125 (8.6) 100 (6.9)	**ESM-7202-43-H2-(*)** **ESM-7202-44-H2-(*)** **ESM-7202-56-H2-(*)** **ESM-7202-86-H2-(*)**	**ESM-7302-43-H-(*)** **ESM-7302-44-H-(*)** **ESM-7302-66-H-(*)** **ESM-7302-86-H-(*)**	1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	3/64" (1.2 mm) 1/16" (I.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	
THREE-WAY 3/2 MULTI-PURPOSE Air, Oil or Water	150 (10) 100 (6.9) 75 (5.2)	**ESM-8202-33-H2-(*)** **ESM-8202-44-H2-(*)** **ESM-8202-66-H2-(*)**	**ESM-8302-33-H-(*)** **ESM-8302-44-H-(*)** **ESM-8302-66-H-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	

Add Suffix -XX To Above Product Numbers (See pages 4, 6 & 9 for other Hazardous Location Solenoids)

NOTES:

*Specify Voltage Code # from page 5..

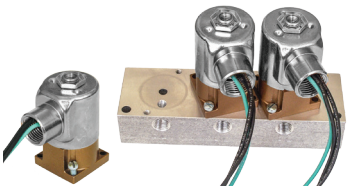
1. Pressures are for both AC or DC coil unless two pressures are shown. In that case, the pressure in color is for DC. Vacuum is AC only.
2. MPa = bar

SERIES E *FULL SIZE*

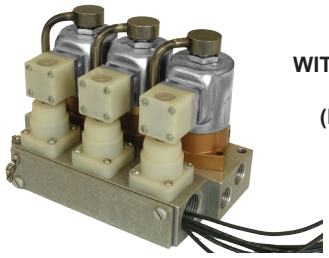
Manifold-Mounting Types

Each Series E Full-Size Manifold Mounting valve is direct solenoid actuated and is mounted on a manifold which can have 1 to 10 valve stations. The manifolds are provided with the threaded ports for pipe connections, which allows the valves to be easily and swiftly installed or removed without breaking any pipe connections. The manifolds also provide common ports, such as the inlet and exhaust, making only one such connection necessary per manifold. Installation is neater and maintenance easier since valves are grouped in one location. Several different piping arrangements are available to provide flexibility of application.
Valves are supplied assembled to manifolds, but must be ordered separately. Station Blanks (E-189) are available for blocking off any unused or "future" valve stations on the manifold. To order complete unit, specify manifold desired and quantity and valve model number required. Valves must all be same model.

Function	2-Way NC, 2-way NO, 3-way NC, 3-Way NO, Directional & Multi-Purpose.
Media	Air / Gas / Hydraulic
Pressure:	to 250 psi (see table page 19)
Flow:	to 0.26 Cv (see table below)
Temperature:	0°F to 180°F (-18°C to 82°C)
Ports, Inlet & Outlet:	⅛" or ¼" NPT
Exhaust/vent:	Vent to atmosphere, #10-32 thread (NPT port or dust protectors available)
Voltages:	AC or DC (see page 7 or 8)
Coil rating:	Class F, continuous duty
Power:	7.3 - 12 watt
Connections:	½" NPT
Ingress protection:	NEMA 1, 2,3 & 4/4X,
Ordinary Location	NEMA 1, 2,3 & 4/4X,
Hazardous Location	NEMA 7, 9 & 4/4X
Materials of construction:	
Body:	430 Stainless (316 Stainless Steel optional)
Seals	NBR (Nitrile)
Coil:	Epoxy molded
Mounting:	(2) threaded holes (optional bracket -WE)



Standard Coils (NEMA 1, 2, 3)

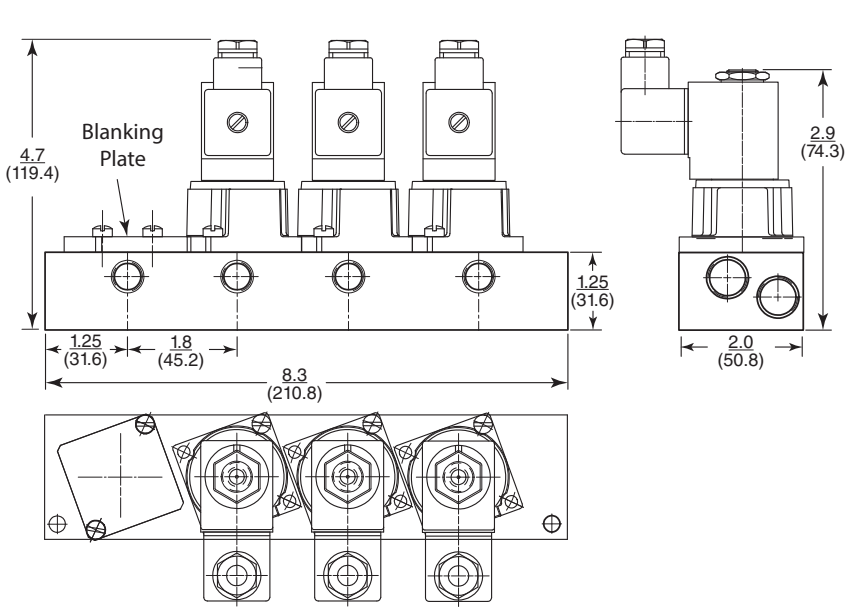


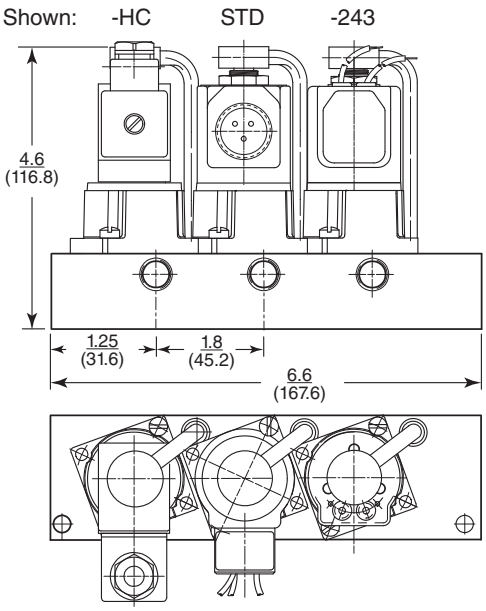
WITH ELECTRICAL PLUG-IN (NEMA 1, 2, 3)



Example of coil types on manifold mounted valves. Also available on side ported

MANIFOLD FEATURES: Piped Exhaust; Common inlet for all valves; Individual outlets (cylinder ports) for each valve; Common exhaust port for all valves.





DIMENSIONS SHOWN IN INCH (MM)

Type	Maximum Operating Pressure Differential (Note 1) psi (bar) (Note 2)	ORDINARY LOCATIONS (For Coil Voltages See Page 8) Product Number Valve: Listed with conduit type coil housing. (Note 3)	Valve: Min. Orifice between Valve Ports	Manifold: One Inlet (3/8 NPT) serves All Valves: Individual Outlets (1/4 NPT) (Notes 3 & 4)	Manifold: Individual Inlet (1/4 NPT) and Outlet (1/4 NPT) for Each Valve (Notes 3 & 4)	Manifold: Individual Inlet (1/4 NPT) for Each Valve; One Outlet (3/8 NPT) Serves All (Notes 3 & 4)
TWO-WAY 2/2 NORMALLY CLOSED Air, Oil or Water	250 (17) 200 (14) 125 (8.6 100 (6.9) 75-50 (5.2-3.4) 50-25 (3.4-1.7) 20-5 (1.4- 0.3)	**ESM-2011-30-(*)** **ESM-2011-40-(*)** **ESM-2011-60-(*)** **ESM-2011-80-(*)** **ESM-2011-100-(*)** **ESM-2011-120-(*)** **ESM-2011-160-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm) 5/32" (4.0mm) 3/16" (4.8 mm) 1/4" (6.4 mm)	EM-21-210-†	EM-21-220-†	EM-21-120-†
TWO-WAY 2/2 NORMALLY OPEN Air, Oil or Water	200 (14) 150 (10) 125 (8.6)	**ESM-2012-03-Z-(*)** **ESM-2012-04-Z-(*)** **ESM-2012-06-Z-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm)	EM-22-012-†	EM-22-022-†	—
THREE-WAY 3/2 NORMALLY CLOSED (EXHAUST TO ATMOSPHERE) Air Only	150 (10) 100 (6.9) 75 (5.2) 50 (3.4) 20 (1.4) Vacuum-AC Only	**ESM-3011-34-(*)** **ESM-3011-44-(*)** **ESM-3011-66-(*)** **ESM-3011-86-(*)** **ESM-3011-126-(*)** **ESM-3011-166-(*)**	"In" "Cyl" 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm) 3/16" (4.8 mm) 1/4" (6.4 mm)	"Cyl" "Exh" 1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	EM-31-120-†	EM-31-220-†	EM-31-210-†
THREE-WAY 3/2 NORMALLY CLOSED (COMMON PIPED EXHAUST) Air, Oil or Water	150 (10) 100 (6.9) 75 (5.2) 50 (3.4) 20 (1.4) Vacuum-AC Only	**ESM-3011-34-Z-(*)** **ESM-3011-44-Z-(*)** **ESM-3011-65-Z-(*)** **ESM-3011-86-Z-(*)** **ESM-3011-126-Z-(*)** **ESM-3011-166-Z-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm) 3/16" (4.8 mm) 1/4" (6.4 mm)	1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	EM-31-121-†	EM-31-221-†	
THREE-WAY 3/2 NORMALLY OPEN (COMMON PIPED EXHAUST) Air, Oil or Water	150 (10) 100 (6.9) 100 (6.9 75 (5.2) 75 (5.2)	**ESM-3012-43-Z-(*)** **ESM-3012-44-Z-(*)** **ESM-3012-84-Z-(*)** **ESM-3012-66-Z-(*)** **ESM-3012-86-Z-(*)**	3/64" (1.2 mm) 1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	1/16" (1.6 mm) 1/16" (1.6 mm) 1/8" (3.2 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	EM-32-121-†	† Insert Number of Valve Stations Required. Manifolds Are Supplied In 1 To 10 Stations.	
THREE-WAY 3/2 DIRECTIONAL CONTROL Air, Oil or Water	200 (14) 150 (10) 125 (8.6) 100 (6.9)	**ESM-7012-43-Z-(*)** **ESM-7012-44-Z-(*)** **ESM-7012-66-Z-(*)** **ESM-7012-86-Z-(*)**	"In" "Out 1" 3/64" (1.2 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 3/32" (2.4 mm)	"In" "Out 2" 1/16" (1.6 mm) 1/16" (1.6 mm) 3/32" (2.4 mm) 1/8" (3.2 mm)	EM-72-212-†		
		Add Suffix -XX to Valve Product Numbers Shown Above	{ HAZARDOUS LOCATIONS }		**Change Prefix "EM" to "E7M." Example E7M-72-212-†**		

Orifice & Cv Data			
Orifice	Cv	Orifice	Cv
1/32"	0.022	1/8"	0.26
3/64"	0.06	5/32"	0.45
1/16"	0.106	3/16"	0.56
3/32"	0.21	1/4"	0.79

NOTES:

*Specify Voltage Code # from page 5.

1. Pressures are for both AC or DC coil unless two pressures are shown. In that case, the pressure in color is for DC. Vacuum is AC only.
2. MPa = $\frac{\text{bar}}{10}$
3. To specify electrical plug-in option add -P to product number shown. Indicator lights mounted in junction box can also be provided when using plug-in valves. Use Suffix -36B for this option. Limitation: 90-250VDC, 70-250VAC/ 50 or 60 Hz, Plug-in option not available with solenoids for hazardous location.
4. All ports of single station manifolds are 1/4 NPT.

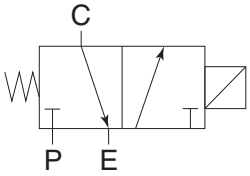
SERIES E3 *Inline Valve*

An inline, compact, heavy duty solenoid valve designed for the most extreme environments. Valve and coil housing are stainless steel for superior corrosion resistance and factory sealed. Rated for hazardous location service. Worldwide certifications available. ¼" NPT 3-Way Valves for air, gas, oil or water. Male inline conduit hub for ease of installation. Super low watt option available for applications where power is a premium.

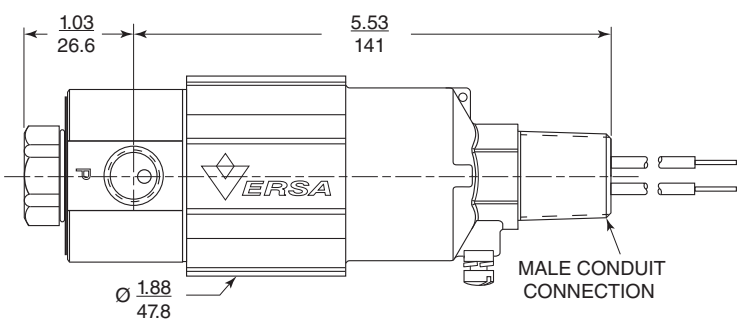
	CSA		ATEX	
	Standard Wattage	Super Low Wattage	Standard Wattage	Super Low Wattage
Part Number	E3SM-3301-46-316-XPS-*	E3SM-3301-36-316-LC-XPS-*	E3SM-3301-46-316-XPN-*	E3SM-3301-36-316-LC-XPN-*
Media	Air / Gas / Hydraulic			
Pressure	0-150 psi (0-10.3 bar)	0 – 115 psi (0-7.9 bar)	0-150 psi (0-10.3 bar)	0 – 115 psi (0-7.9 bar)
Flow-Inlet, Cv/orifice	0.11 / 0.063" (1.6 mm)	0.06 / 0.047" (1.2 mm)	0.11 / 0.063" (1.6 mm)	0.06 / 0.047" (1.2 mm)
Flow-Exhaust, Cv/orifice	0.16 / 0.094" (2.4 mm)	0.16 / 0.094" (2.4 mm)	0.16 / 0.094" (2.4 mm)	0.16 / 0.094" (2.4 mm)
Power	1.86 watts	0.85 watt	1.86 watts	0.85 watt
Voltage	12 or 24 DC ± 15%	24 DC ± 15%	12 or 24 DC ± 15%	24 DC ± 15%
Ingress protection:	NEMA 4X and 6P		IP 66/67	
Coil Rating	Class F, Continuous duty			
Electrical Connection:	½" npt, male hub with 72 inch wire leads, 3 wire. Not polarity dependent			
Ports	¼" NPT Inlet, Outlet & Exhaust			
Temperature	-4 to 122 F (-20 to 49 C)			
Materials				
Body:	316 Stainless Steel			
Seals:	FKM-fluorocarbon			
Coil Housing:	316 Stainless Steel			
Coil:	Epoxy molded/encapsulated (Factory Sealed)			
Mounting:	Inline off conduit hub. Not orientation sensitive			
Rating:	Class I, Div 1, Group C and D Class II, Div 1, Group E, F and G, T6 Class I, Div 2, Group C and D Class II, Div 2, Group E, F and G		II 2 G Ex d IIB T4…T6 Gb	

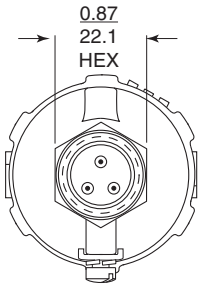


FLOW SCHEMATIC



Dimensions





Functional Description

The Electric Quick Exhaust Valve is a three-way, NC, 3/2 valve with extra large exhaust orifice in order to provide extra fast movement of the cylinder rod, or to exhaust systems rapidly. When the solenoid is energized, the outlet port is connected to the inlet port and the exhaust port is closed. When the solenoid is de-energized, the inlet port is closed and the outlet port is connected to the exhaust port, providing rapid evacuation of the system.

Construction

Body: 316 Stainless Steel. (Conforms to NACE standard MR-01-75)
Solenoid Operator: 304, 430F & 302 Stainless Steel (wetted parts)
Seals: FKM (Fluorocarbon) O ring seals;
CR (Neoprene) coated nylon flapper.
Screws: Stainless Steel



E5QE ¼" with -XX



E4QE ¼" with -XDB



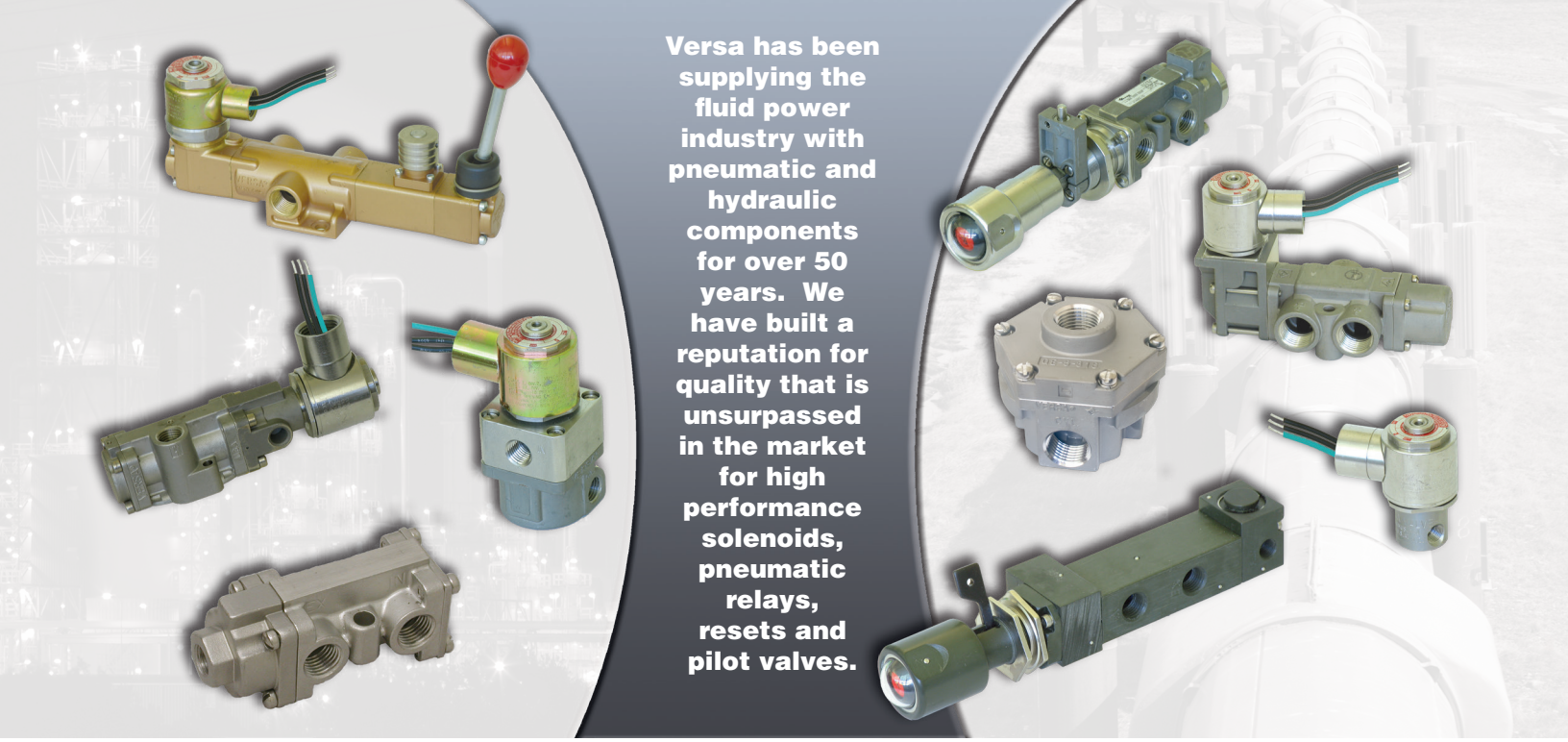
EQE ½" with -XXMA

Function	Size				Pressure	E5QE			E4QE			EQE		
						General purpose, NEMA 1 (none) General purpose, NEMA 4/4X (-PC) UL/CSA, flying lead ½" condit hub (-XX) ATEX, flying leads M20 conduit hub (-XN) FM/CSA, Intrinsic Safe, DIN (-XIS*)			CSA/ATEX, junction box (-XDB*1)			ATEX, (m) junction box (-XMA*) ATEX, (i) junction box (-XIF*)		
	Basic	Ports				Part Number	Flow		Part Number	Flow		Part Number	Flow	
		Inlet	Outlet	Exhaust			Inlet	Exhaust		Inlet	Exhaust		Inlet	Exhaust
3-Way 3/2 Normally Closed	¼	¼	¼	⅜	5-150	E5QE-30304-316-*-**	0.06	3.3	E4QE-30304-316-*-**	0.06	3.3			
					5-100	E5QE-30404-316-*-**	0.106	3.3	E4QE-30404-316-*-** (125 psi)	0.106	3.3			
	½	¼	½	¾	5-150	E5QE-50304-316-*-**	0.06	8.8	E4QE-50304-316-*-**	0.06	8.8	EQE-50203-316-*-**	0.022	8.8
					5-100	E5QE-50404-316-*-**	0.106	8.8	E4QE-50404-316-*-** (125 psi)	0.106	8.8	EQE-50304-316-*-**	0.06	8.8

* Specify Suffix Options from chart below. **Specify Voltage.

SUFFIX CHART **Description** (for additional specifications contact factory)	Suffix		
General Purpose	E5QE	E4QE	EQE
NEMA 1, 1/2" Conduit, 24" wire leads (standard no suffix required)	None	NA	NA
NEMA 4, 4X 1/2" Conduit, 24" wire leads	-PC		
Hazardous Location			
UL/CSA Explosion Proof, 1/2" Conduit, 24" wire leads. Other available options: -LB Low watt -PC Potted Coil -ST Stainless housing	-XX		
ATEX/IEC Flame Proof (d), M20 Conduit, 24" wire leads. Other available options: -LB Low watt -PC Potted Coil -ST Stainless housing	-XN		
FM/CSA Intrinsic Safe, Spade terminals. Other available options: -HC DIN Connector, Pg9 cord grip -HCC DIN Connector, 1/2" conduit Note: Part number changes to E5QE-30202-316 and E5QE-50202-316. Pressure is 5-115 psi (0.3-7.9 bar) and Inlet Flow is 0.02 Cv (.32 Kv)	-XISC (FM/CSA) -XISX6 (ATEX)		
ATEX/IECEx/CSA Flame Proof (d), Increased Safety(e), Enclosure/Dust (td) Class I, Div I, Grp B,C,D - Class I, Div II, Grp E,F,G- Class I, Div III, integral junction box	NA	-XDBS1 (M20) -XDBT1 (½")	
ATEX/IECEx Encapsulated (mb), Increased Safety (e) Enclosure/Dust (td) integral junction box		NA	-XMAA (M20) -XMAF (½")
Intrinsic Safe (ia), integral junction box			-XIFA (M20) -XIFF (½")

(For Pneumatic Application Only)



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Versa Products Company Inc.
22 Spring Valley Road
Paramus, New Jersey 07652
USA
Phone: 201-843-2400
Fax: 201-843-2931

Versa BV
Prins Willem Alexanderlaan
1429
7321 GB Apeldoorn
The Netherlands
Phone: 01131-55-368-1900
Fax: 01131-55-368-1909

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