



Bulletin E  
2015







# E FAMILY



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Series	<b>EZ</b>	<b>E5</b>	<b>E4</b>	<b>E</b>	<b>E3</b>	<b>E* QE</b>
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

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## Materials, Hazardous Location

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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

#### 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.

#### Electrical Connections

The E Family of solenoid valves offer the widest range of electrical hook connections, from 1/2" 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.

#### Porting Options

E Family valves are available with 1/8" or 1/4" ports for ease of installation. Select Families are available in manifolded configurations for ease of installation, space savings and trouble free maintenance.

#### 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 contaminants out of the valve for long trouble, free service.

#### 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.

#### High Performance Solenoid

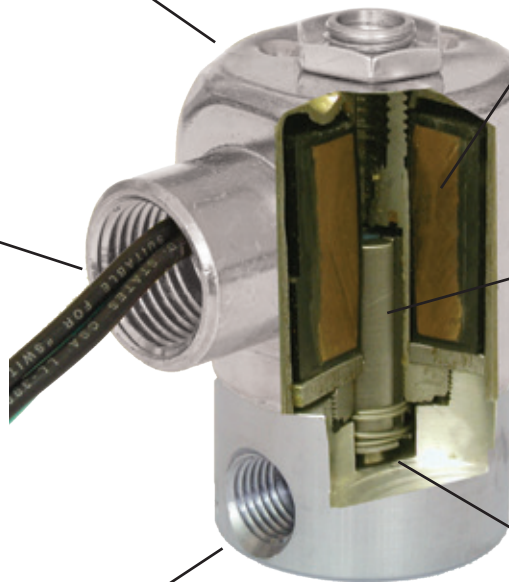
Near frictionless direct acting poppet design yields positive shifting, the lowest wattage ratings and unsurpassed reliability. Life cycle ratings to 20 million cycles.

#### 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 in 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:

<b>E5SM</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>H2</b>	<b>A120</b>
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 1/4" 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	
<b>General Purpose (see page 4)</b>	
-243	Grommited housing (flying leads)
-228L	Epoxy formed coil with 1/2" conduit hub, NEMA 4
-HC	DIN connector with strain relief
-HCC	DIN connector with 1/2" conduit hub
-HCL	DIN connector with light
-HCCL	DIN connector 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
<b>Hazardous Service (see page 6)</b>	
-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)
<b>Miscellaneous</b>	
-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)	0 None (2-way NC)	0 None (2-way NO)	0 None (2-way NC)	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
2 1/32"	2 1/32"	2 1/32"	2 1/32"		Rating Code: A= 60Hz frequency (AC) D= Direct Current (DC) E= 50Hz frequency (AC)
3 3/64"	3 3/64"	3 3/64"	3 3/64"		
4 1/16"	4 1/16"	4 1/16"	4 1/16"		
6 3/32"	6 3/32"	6 3/32"	6 3/32"		
8 1/8"					
12 3/16"					
16 1/4"					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					
				X	X				
				X	X				
				X	X				



## 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

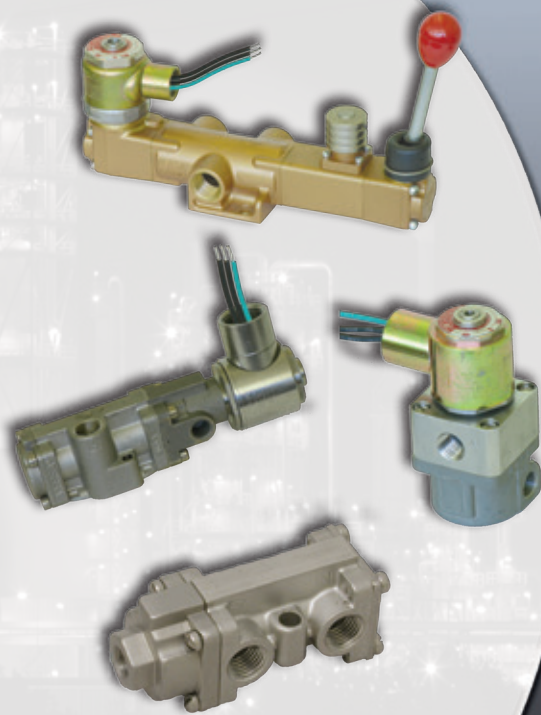


Function	Size				Pressure	E5QE			E4QE			EQE			
						General purpose, NEMA 1 (none) General purpose, NEMA 4/4X (-PC) UL/CSA, flying lead ½" conduit hub (-XX) ATEX, flying leads M20 conduit hub (-XN) FM/CSA, Intrinsic Safe, DIN (-XIS*)			CSA/ATEX, junction box (-XDB*1)			ATEX, (m) junction box (-XMA*) 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	

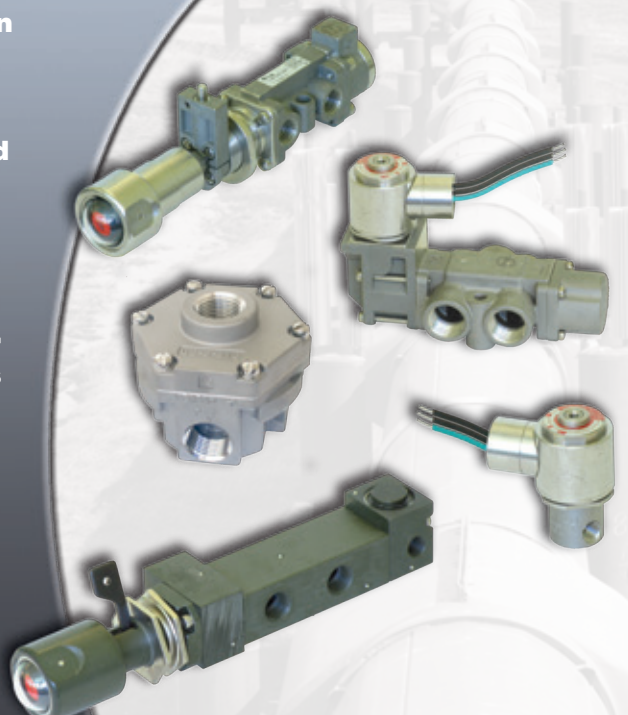
\* Specify Suffix Options from chart below. \*\*Specify Voltage.

SUFFIX CHART (for additional specifications contact factory)		Suffix		
Description		E5QE	E4QE	EQE
<b>General Purpose</b>				
NEMA 1, 1/2" Conduit, 24" wire leads (standard no suffix required)		None		
NEMA 4, 4X 1/2" Conduit, 24" wire leads		-PC		
<b>Hazardous Location</b>				
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	NA	NA
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			-XDBS1 (M20) -XDBT1 (1/2")	
ATEX/IECEx Encapsulated (mb), Increased Safety (e) Enclosure/Dust (td) integral junction box		NA	NA	-XMAA (M20) -XMAF (1/2")
Intrinsic Safe (ia), integral junction box				-XIFA (M20) -XIFF (1/2")

(For Pneumatic Application Only)



**Versa has been supplying the fluid power 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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