



REVISION LOG

Revision	Date Revised	Content	Pages Affected
0	11-13-24	Creation of SMC Specifications – Ford	All Pages

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Resources

Website: www.smcusa.com

Global Website: www.smcworld.com

Instruction/Operation Manuals and Configuration Files: <https://www.smcusa.com/help-support/instruction-and-operation/>

SMC Introduction

ABOUT SMC

SMC Corporation of America, a subsidiary of SMC Corporation in Japan headquartered in Noblesville, IN, is a comprehensive manufacturer of components for the Automation, Controls, and Process industries. With technical centers in Japan, the US, Europe, and China, our vision to be the global standard for sustainable automation is realized through partnering with our customers to discover opportunities for energy and resource savings by reducing overall compressed air and electrical consumption.

BCP

As a comprehensive manufacturer of automatic control equipment, SMC aims to fulfill our product supply responsibilities and maintain the trust of our customers by contributing to both sustainable growth and the expansion of technological innovations.

Production Department BCP:

- Risk hedging by dispersing the location of production and logistics centers.
- SMC's supply system provides coverage of the world's major countries.

Technical Department BCP:

- Global Engineering Network Established.
- Other technical centers, working in parallel to each other, can provide operational backups.
- Product development conducted by the JTC (Japan Technical Center) is backed up by the other technical centers.

Sales Department BCP

- With 532 sales offices in 32 countries around the world, SMC provides support for customers with 8700-person strong global sales staff.
- Customer relationship management via SalesConnect (CRM).

Management and Finance Related BCP

- Established of an advisory committee.
- A strong financial foundation

Information Security (Applicable to all departments)

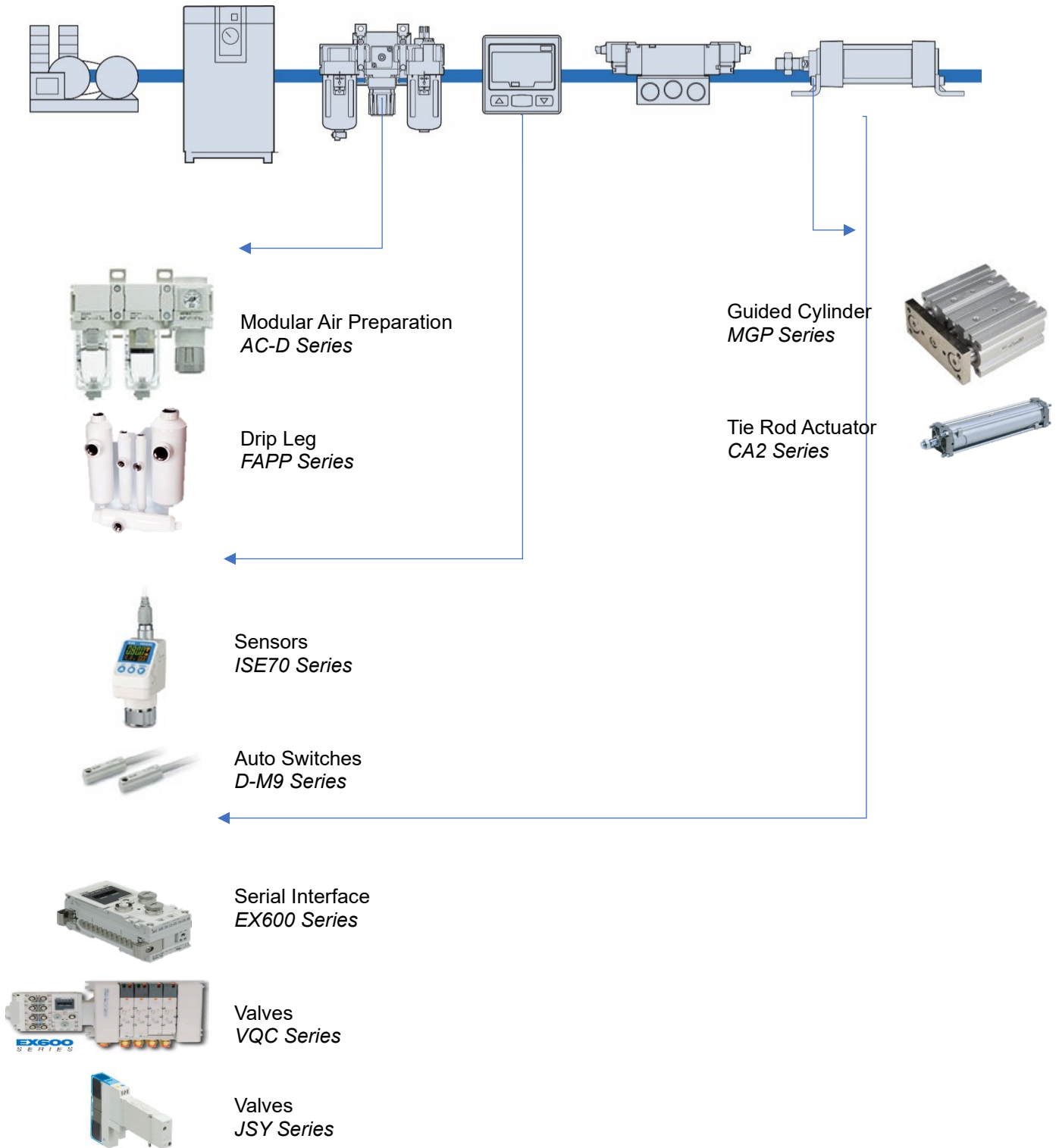
- Strengthened information security with a globally maintained unified infrastructure.
- Prevention of cyber-attacks, automatic detection, and strengthening of the monitoring system.
- Installation of data centers to establish a disaster recovery system.

Strategic Partnership

One of SMC's core values is support and being close to our customers. With SMC and our 12 commitments, you'll find the support you need to optimize the design, production, and maintenance process.


- 1: Dedication corporate account manager
- 2: Local factory support
- 3: Design engineering support
- 4: Machine safety support
- 5: OEM machine supplier support
- 6: Critical spare parts for new OEM machines
- 7: Compressed air energy savings assessments
- 8: Machine analysis assessments
- 9: Storeroom assessments
- 10: High usage spare parts analysis
- 11: Improvement activity reports
- 12: Onsite & online training classes

Complete Automation, Controls, and Process Solutions



Mainline Air Preparation


Additional Documentation can be found www.smccusa.com/ford > *folder mainline air prep*

	Product Series	Product Type	Preferred Part Number	Notes
	IDFB	Dryer		283 TO 11327 LPM
	IDG	Membrane Air Dryer		Available in a variety of sizes. See catalog for full details.
	IDW	Desiccant Air Dryer		113 to 10190 LPM

Modular Air Preparation

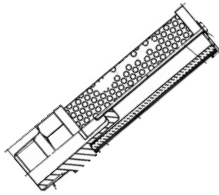
Air preparation (FRL) products offer a wide variety of filter, regulator, and lubricator units. Combination units include air filter regulators, mist separators, as well as ambient dryers, booster regulators, precision regulators, and a wide range of accessories.

Additional Documentation can be found www.smccusa.com/ford > *folder air prep*

	Product Series	Product Type	Preferred Part Number	Notes
	VHS	Pressure relief valve	VHS40-F04-S-D (1/2") VHS50-F06-S-D (3/4") VHS50-F10-S-D (1")	Pressure relief 3 port valve. With built-in silencer for EXH port as an option G port
	AW	Filter regulator	AW40K-F04D-8-D (1/2") AW50K-F06D-8-D (3/4")	Modular-style Filter Regulator with Backflow function, normally open auto drain and metal body. G port



AF	Air Filter	AF40-F04D-D (1/2") AF50-F06D-D (3/4") AF60-F10-D (1")	Modular-style Filter normally opens auto drain. G port
AL	Lubricator	AL-D, AL	Lubricator 1/4 to 2" with polycarbonate, nylon, metal, and metal bowl w/ level gauge.
AC-D	Modular Assembly		Assembly of filter, regulator, lubricator, etc. as needed
ITV	Electro-Pneumatic Regulator	ITV1000... 2000... 3000...	Port size 1/8 - G1/2 Flow rate 6- 4000 l/min Stepless control of air pressure in proportion to electrical signals
ITVH, ITVX	Electro-Pneumatic Regulator		For high pressure
VBA	Booster regulator Low air consumption	VBA...-X3145	Port size 1/4, 1/2 G port Set pressure 0.3 - 1.2MPa. Vertical and horizontal installation Simple, compact shape, Low Air Consumption
AN	Silencers	AN... AN30-03 (3/8" Rc) AN40-04 (1/2" Rc)	Resin body, Threaded, Rc thread to be used.
AN	Silencers	AN-C	Resin body, One touch connection.



AN	Silencers	AN-*00 AN600-10 (1"Rc)	UL94-VO body, Rc thread to be used.
INA	Silencers	INA-25-88	Metal Body Rc thread
AD	Auto Drain	AD402-N03	G-Port, for use with Drip Legs
FAPP	Drip Legs	FAPP-T04-DUP01533 FAPP-T06-DUP01534 FAPP-T10-DUP01535 FAPP-T14-DUP01536 FAPP-T20-DUP01537	Purchase with AD402-N03
VPX, VP546, VP746	Safety Solenoid Valves	VP546, VP746, VPX	Category 3 or 4, sizes 1/4"-1"
AV, AVL, AVA	Soft Start-Up Valve	AV, AVL, AVA	1/4" to 1" Soft Start-Up Valves, Air operated and 24VDC. See Catalog for details
AR	Regulators	AR425, AR435, AR625, AR635, AR825, AR835, AR925, AR935	Pressure regulators 1/4 to 2"
G46-L, G36-L	Pressure and Vacuum Gauges	G46-L, G36-L	Pressure and vacuum gauges

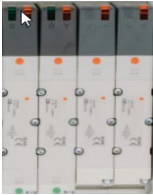




KKA	Quick Connect Couplings and Sockets	KKA	Quick couplings and sockets
AS, ASB, ASD	Flow Controls	AS, ASB, ASD	Flow controls, metal flow controls and dual speed controls
ASP	Pilot Check Valve	ASP-X440	Pilot check valve w/flow control valve plus manual pressure release

Valves

Directional control valves and manifolds direct air to pneumatic actuators, vacuum equipment and as pilot air for large-scale industrial process valves making them fundamental to industrial automation applications. SMC pneumatic valves can be actuated manually, pneumatically, or electrically. They can also be connected to industrial fieldbus and I/O capabilities to receive feedback from sensors and actuators using protocols such as: EtherNet/IP, PROFINET, EtherCAT, DeviceNet, Profibus or IO-Link (IEC 61131-9). SMC valves feature energy saving, low power consumption coils, high flow rates (Cv, SCFM) and quick response times.

Additional Documentation can be found www.smccusa.com/ford > *folder valves*

	Product Series	Product Type	Preferred Part Number	Notes
	VQC	Valves	VQC4101-51	Single Solenoid, Spring Return Valve
	VQC	Valves	VQC4201-51	Double Solenoid 2 Position Valve
	VQC	Valves	VQC4301-51	Double Solenoid 3 Position Closed Center Valve
	VQC	Valves	VQC4401-51	Double Solenoid 3 Position Open Center Valve
	VQC	Valves	VQC4501-51	Double Solenoid 3 Position Pressure Center Valve
	VQC	Manifold Components	VVQC4000-3A-2F	D Side End Plate (far left) 1/2" G Pressure Port
	VQC	Manifold Components	VVQC4000-1B-D-03F	Manifold Block (center) 3/8" G Cylinder Ports
	VQC	Manifold Components	VVQC4000-2A-1F	U Side End Plate (far right) 1/2" G Pressure Port
	JSY	JSY1000	JSY1100-Z	2 Position Single Solenoid
			JSY1200-Z	2 Position Double Solenoid
			JSY1300-Z	3 Position Closed Center
			JSY1400-Z	3 Position Exhaust Center
			JSY1500-Z	3 Position Pressure Center
			JSY1A00-Z	4 Position Dual 3 Port Normally Closed
			JSY1B00-Z	4 Position Dual 3 Port Normally Open
JSY1C00-Z	4 Position Dual 3 Port 4 port Normally Closed 2 port Normally Open			
	JSY	JSY3000	JSY3100-Z	2 Position Single Solenoid
			JSY3200-Z	2 Position Dbl Solenoid
			JSY3300-Z	3 Position Closed Center
			JSY3400-Z	3 Position Exhaust Center
			JSY3500-Z	3 Position Pressure Center
			JSY3A00-Z	4 Position Dual 3 Port Normally Closed
			JSY3B00-Z	4 Position Dual 3 Port Normally Open



		JSY3C00-Z	4 Position Dual 3 Port 4 port Normally Closed 2 port Normally Open
JSY	JSY5000	JSY5100-Z	2 Position Single Solenoid
		JSY5200-Z	2 Position Dbl Solenoid
		JSY5300-Z	3 Position Closed Center
		JSY5400-Z	3 Position Exhaust Center
		JSY5500-Z	3 Position Pressure Center
		JSY5A00-Z	4 Position Dual 3 Port Normally Closed
		JSY5B00-Z	4 Position Dual 3 Port Normally Open
		JSY5C00-Z	4 Position Dual 3 Port 4 port Normally Closed 2 port Normally Open

Serial Interface

The advantage of a valve I/O is the amount of flexibility and control it gives you in addition to the significant labor savings. SMC's latest innovations in fieldbus technology give you the power of decentralized communication and the flexibility needed for your control design. SMC supports a wide variety of open fieldbus protocols to suit your networking needs including IO-Link, EtherNet/IP, PROFINET, EtherCAT, DeviceNet and more.

Additional Documentation can be found www.smcusa.com/ford > folder serial interface

	Product Series	Product Type	Preferred Part Number	Notes
	EX600	Serial Interface	EX600-SPN3	Profinet Serial Interface PNP
	EX600	Serial Interface	EX600-DXPD	Input Block: 8 Port 16 Point
	EX600	Serial Interface	EX600-DYPB	Output Block: 4 Port 8 Point
	EX600	Serial Interface	EX600-ED2	End Plate: M12 Connector
	EX260	Serial Interface	EX260-SPN3	ProfiNet SI Unit PNP
	EX600	Accessories	EX600-ZMV1	Mounting Bkt VQC
	EX600	Accessories	EX600-ZMV2	Mounting Bkt SY
	EX600	Accessories	EX600-ZMA2	Mounting Bkt Din Rail
	EX600	Accessories	EX600-ZMA3	Mounting Bkt Din Rail SY Series

See catalog
See catalog



See catalog



EX600	Accessories	EX600-ZT1	Label Block I/O Unit
EX600	Accessories	EX9-AWTS	Seal Cap M12
EX600	Accessories	PCA-1446566	5M Cable w/Connector
EX600	Accessories	PCA-1446553	Field Connector
EX600	Accessories	PCA-1557769	M12 Cable w/connector
EX600	Accessories	PCA-1557743	Field Connector M12
EX600	Accessories	EX9-AC050EN-PSRJ	M12 to RJ-45 Connector 5M

Pneumatic Actuators

Basic linear air cylinders are used to provide straight-line, in/out linear movement for a variety of applications. Available as single acting (spring extend or spring return actuators) and double acting styles with single rod or double rod configurations, non-rotating, and precision non-rotating models.

Actuator body styles include crimped, round, or tie rod. Single acting air cylinders develop thrust in one direction and have spring return mechanism, which lowers air consumption compared with the equivalent size of double acting air cylinders. Using a double acting air cylinder, air pressure may be alternately applied to provide force in both directions.

Additional Documentation can be found www.smcusa.com/ford > folder *pneumatic actuators*

	Product Series	Product Type	Preferred Part Number	Notes
	C85	Round Body		Round Body Cylinders 8mm to 25mm Bore sizes
	C96S, CP96	Tie Rod ISO Cylinder		Bore sizes (mm): 32 -125 Strokes up to 2000 mm Double acting Position sensing Use the XC35 coil scraper in welding applications



C96N	Locking Tie Rod ISO Cylinder		ISO Cylinders 32mm to 100mm Bore Sizes
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CBQ2	Locking Compact Type		Locking Compact Cylinder 20mm to 100mm Bore Sizes
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CKZT	Power Clamp		Bore Sizes 32, 40mm
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CLQ/CLQ-D	Compact Cylinder with Rod Lock		Bore sizes (mm): 20-100 Strokes up to 100 mm Double acting. Position sensing Use CDLQ Type for cylinders requiring switches
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C(L)KQ	Pin clamp cylinder		Bore sizes (mm): 50/63 Positioning and clamping at one time. Guide pin shapes diamond or round Position sensing
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CQ2-Z	Compact Cylinder		Bore sizes (mm): 12-200 Strokes up to 100 mm Double acting. Position sensing Use CDQ2 Type for cylinders requiring switches
CRB1	Rotary Actuator		Sizes (mm): 10-100 Torque 0-150 Rotating angle 0...270 Position sensing Various Cushioning options Use CDRB1 Type for cylinders requiring switches
CRB2	Rotary Actuator		Sizes (mm): 15-40 Torque 0-60 Rotating angle 0...270 Position sensing. Various Cushioning options Use CDRB2 Type for cylinders requiring switches
CY3	Rodless cylinder CY3R Magnetically Coupled		Bore sizes (mm): 6-63 Strokes up to 2000 mm Position sensing
MACM	Centering Unit		Sizes 12-50 mm Max Load 1000 Kg 100 mm range Location accuracy +/- 1 mm





MGG	Externally Guided Actuator		Guided Actuators, 20mm to 100mm Bore Sizes
MGP-Z	Guided Cylinder		Bore sizes (mm): 12-100 Strokes up to 400 mm Position sensing Slide bearing, Ball bushing or High precision Cushioning rubber bumper on both ends. End lock available Use the XC35 coil scraper in welding applications
MHC, MHS	Grippers		2 and 3 Finger Grippers.
MHM	Magnetic Gripper		Sizes 16 - 50 Max holding force 1000N Double acting 4 mounting options
MHZ	Parallel Griper		Bore sizes (mm) 6-40 available in Single Acting High repeatability: ± 0.01 mm
MIS, MIW	Single and Dual Finger Separator		Bore Sizes 8mm to 32mm
MK	Swing Clamp		Swing Clamp standard with auto switch mounting groves. Clockwise or Counterclockwise available. 12mm to 63mm Bore



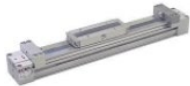
MSQ	Rotary Table MSQ		Sizes (mm): 1-200 Torque 0.01-40 Nm Rotating angle 0...190 Position sensing. Cushioning Adjustment bolt Internal shock absorber
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MWB	Cylinder with Rod Lock		Bore sizes (mm): 32-100 Strokes up to 800 mm Double acting. Position sensing Use the XC35 coil scraper in welding applications. Use MDWB Type for cylinders requiring switches
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MXQ	Slide Table		Bore sizes (mm): 6-25 Strokes up to 150 mm Position sensing. Cushioning Metal/Shock/ rubber stopper
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MY1B	Rodless Cylinder Mechanically Coupled		Bore sizes (mm): 10-100 Strokes up to 2000 mm Position sensing. Various Cushioning options
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MY1H	Rodless Cylinder Mechanically Coupled High Load		Bore sizes (mm): 10-63 Strokes up to 2000 mm Position sensing Various Cushioning options
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RS2H	Heavy Duty Pallet Stop		Bore sizes (mm): 50-80 Strokes up to 40 mm Double/Single acting Shock absorber with scraper Position sensing
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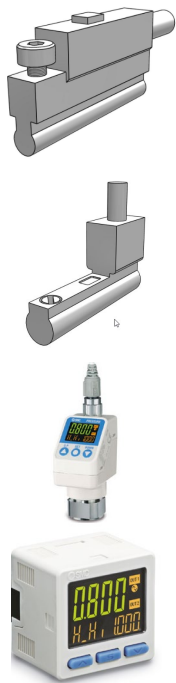


RSQ	Pallet Stop		Bore sizes (mm): 16-50 Strokes up to 30 mm Double/Single acting Variants: Round bar/Non-rotating/Lever. Position sensing Use RSDQ Type for cylinders requiring switches
RZQ	Multi-Position Cylinder		Dbl Acting Single Rod, 32, 40, 50, 63 Bore Sizes
RB, RBL, RBQ	Shock Absorber		Standard, Coolant Resistant and Short Shock Absorbers
ZCUK	Vacuum Cylinders		Free Mount Cylinders for Vacuum 6mm to 32mm Bore Sizes

Sensors and Instrumentation

Industrial sensors and switches, sometimes referred to as transducers, installed in the factory automation space can provide essential machine feedback. They can monitor On/Off status, confirm operation within an optimal range, or measure real time operation e.g. pressure or flow. Industrial sensors and switches can connect to a PLC or other central controller via field bus or IO-link to enhance troubleshooting by decreasing diagnostic time. Sensors can also become the data source for providing better predictive analytics integral to Industrial Internet of Things (IIoT) or Industry 4.0, all while potentially increasing worker safety.







Additional Documentation can be found www.smccusa.com/ford > *folder instrumentation*

	Product Series	Product Type	Preferred Part Number	Notes
	D-P3DWASC	Actuator position sensor	D-P3DWASC	2 Color, Magnetic field resistant, inline switch, .3 m cable with M12 pin. Pins 3 and 4 are used. Non-Polar
	D-M9	Actuator position sensor	D- M9PWSDDPC D-M9PWVSDPC D-M9PSDDPC	Horizontal & vertical mount Solid state switch, 2 color indicator.5m cable with 4 pin M12 connector
	ISE70	Digital pressure switch	ISE70-F02-L2	Pressure range 0.0 - 1.000 MPa Power supply 12 - 24 VDC. 1/4 G port
	ZSE20	Digital pressure switch	ZSE20	Pressure range 0.0 - 101.0 kPa

Electric Actuators

SMC has introduced a line of actuators driven by 24VDC step motors fitted with battery-less absolute encoders. An absolute encoder offers position data upon power-on, avoiding the homing routine an incremental encoder requires. Our battery-less absolute encoder pairs orientation sensors with differently sized rotating wheels to enable position detection. This electro-mechanical design eliminates the battery and its accompanying import and disposal restrictions common to traditional absolute encoders. A battery-less solution is also free of memory retention limits from extended power-off situations.

Additional Documentation can be found www.smcusa.com/ford > folder electric actuators





	Product Series	Product Type	Preferred Part Number	Notes
	EQ	Electric Cylinder	EQY	Electric Cylinder integrated with controller. Bore sizes 16 – 32mm. Easy setup, mimics pneumatic cylinder with 2 and 3 position available
	LEFS	Slider Type, Ball Screw		Bore sizes (mm): 16-40. Strokes up to 1200 mm. Absolute encoder type, DC/Step motor. Motorless type. Compatible with several motors: Siemens AG
	LEFSB	Slider Type, Belt		Bore sizes (mm): 25-40 Strokes up to 3000 mm Absolute encoder type DC/Step motor Motorless type Compatible with several motors: Siemens AG
	LEKFS	Slider Type, High Rigidity and Precision Type		Bore sizes (mm): 25-40. Strokes up to 600 mm. Circular arc grooves allow for high rigidity and high precision. Absolute encoder type DC/Step motor
	LEL	Low Profile Cylinder Belt		Bore sizes (mm): 25 Strokes up to 1000 mm DC/Step motor Sliding bearing/ Ball bushing bearing
	LES	Slide Table		Bore sizes (mm): 8-25 Strokes up to 150 mm Absolute encoder type DC/Step motor AC servo motor Motorless type Compatible with several motors: Siemens AG

Vacuum

Vacuum Generators create industrial vacuum at the application's point of use utilizing the venturi effect and fluid flow from compressed air or gases. They are compact and light weight units designed for end-of-arm tooling (EOAT) on robotic arms or end effectors generating suction gripping force at the point of use while minimizing inertia. Vacuum levels as low as -27 inHG (-93 kPA) can be attained with multi-stage generators with suction flow greater than 7 SCFM (200 L/min). They can be configured into manifolds or mounted as individual units with options including: energy savings, compact, multi-stage, point-of-use, high speed release and integrated generator with suction cups.

Suction Cups are the critical point of contact for pick and place applications for handling corrugated cardboard, metal or glass sheets, food processing and packaging, and even bag opening tasks. They are designed in a wide range of diameters ranging from 0.8mm to 200mm for tiny objects to heavy-duty applications. SMC's standard cup shapes include: flat, thin flat, bellows, deep, oval, and oval flat. Suction cup materials are: Silicone, NBR, urethane, FKM, mark-free, and FDA compliant food grade materials. Installation options can be specified on either spring loaded buffers or threaded stems. Special application cups include: integrated with vacuum generator, with check valve, and in porous materials.

Additional Documentation can be found www.smccusa.com/ford > *folder vacuum*

	Product Series	Product Type	Preferred Part Number	Notes
	ZH	Vacuum Generator		Body Ported Vacuum Ejectors
	ZK2	Vacuum Generator		Manifold Vacuum Ejectors
	ZP2, ZP3	Vacuum Cups		Vacuum Cups, see catalog for variations
	ZP2V	Vacuum Check Valve		Vacuum Saving Valve

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