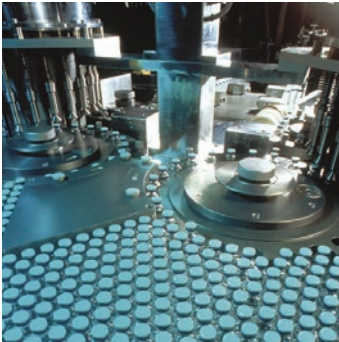




Explosion Proof Servo Motors



ENGINEERING YOUR SUCCESS.



WARNING – USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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Parker Hannifin

The global leader in motion and control technologies

A world class player on a local stage

Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

Manufacturing to Meet Our Customers' Needs

Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

Electromechanical Worldwide Manufacturing Locations

Europe

Littlehampton, United Kingdom
Dijon, France
Offenburg, Germany
Filderstadt, Germany
Milan, Italy

Asia

Wuxi, China
Jangan, Korea
Chennai, India

North America

Rohnert Park, California
Irwin, Pennsylvania
Charlotte, North Carolina
New Ulm, Minnesota



Offenburg, Germany

Local Manufacturing and Support in Europe

Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

For contact information, please refer to the Sales Offices on the back cover of this document or visit www.parker.com



Milan, Italy



Littlehampton, UK



Filderstadt, Germany



Dijon, France

Series	EX 	
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Marking	ATEX and IECEx	UL
EX Zone	Zone 1	Division 1
Classification	Gas or Gas and Dust	Gas (class 1)
Torque	1.75 to 35 Nm	1.6 to 31.4 Nm
Max Speed	6 800 min ⁻¹	7 600 min ⁻¹
Ingress protection level	IP64 (standard) IP65 (option)	IP65
Power Supply	230 - 400 VAC	230 - 480 VAC
Conformance	ATEX 2014/34/EU Directive	UL 674 standard: Electric Motors and Generators for use in Division 1 Hazardous (Classified) Locations

Standards

Hazardous Areas Classification

Dangerous Areas Identification

European directive 99/92/EC makes explicit the responsibility of employers to protect employees who may be exposed to risk of ATEX environments (Explosive Atmosphere). The employer must assess the risk and classify potentially dangerous areas. Equipment and materials must also be suited for use in dangerous areas in accordance with ATEX directive 2014/34/EU.

		EX Series	
Hazard	Permanent	Occasional	EY Series
Definition	Explosive atmospheres present continuously, for long periods or frequently	Explosive atmospheres are likely to occur	Explosive atmospheres are unlikely to occur or present only infrequently and for a short period only
Gas and vapour	Zone 0	Zone 1	Zone 2
Dust	Zone 20	Zone 21	Zone 22
Category	1 Very high level of protection	2 High level of protection	3 Normal level of protection

 Suitable for ATEX/IECEx Parker servomotors

Classification of common combustible gases and vapors according to temperature class and explosion group

		EX Series					
		EY Series					
T° Class		T1	T2	T3	T4	T5	T6
Group	I	Methane					
	II A	Acetic acid Acetone Ammonia Benzene Carbon monoxide Ethane Ethyl... Methane Methanol Methyl... Naphtalene Propane Toluene Xylene	Butyl acetate Amylic alcohol Liquefied gas Natural gas Butane Ethyl alcohol	Cyclohexane Cyclohexanol Diesel fuels Gasoline Heptane Hexane Pentane Petroleum (depending on composition)	Acetaldehyde Ether		
	II B	Coke gas	Butadiene Ethylene Ethylbenzene Ethylene oxide	Hydrogen sulphide Isoprene Petroleum (depending on composition)	Ethyl ether		
	II C	Hydrogen	Acetylene				Carbon disulphide Ethyl nitrate

Compliance with North American Standards

EX servomotors are CLASS 1, division 1, Groups C and D, explosion-proof apparatus designed to operate in explosive atmospheres in accordance with standard UL674 and UL1004 for electrical parts.



Marking in accordance with Standard UL674

Class I	Division 1	Group C&D	Temperature class	
Class I Gas, vapor and liquids	Explosive atmospheres can exist all the time or some of the time under normal operating conditions	A Acetylene	T1 450 °C	IP65
		B Hydrogen	T2 300 °C	
		C Ethylene	T3 200 °C	
		D Propane	T4 135 °C	
Class II Dust		E, F, G	T4A 120 °C	
Class III Fibers			T5 100 °C	
			T6 85 °C	

Suitable for Parker UL servomotors

Operating category and marking of EX servomotors

ATEX/IECEx gaseous atmospheres



II2 G Ex d IIB T4 Gb IP64 – Group IIA or IIB – category 2G– zone 1 and 2.

I I	2	G	Ex	d	II	B	T4*	Gb	IP64
I Mine	M1 Very high level of protection	G Gas Vapour	Protection against explosions	o Oil immersion	I Mine	Methane	T1 450 °C	Ma Very high level of protection	IP64
	M2 High level of protection			p Pressurized apparatus			T2 300 °C	Mb High level of protection	
II Surface	1 Very high level of protection			d Flameproof enclosure	II Surface	A Propane	T3 200 °C	Ga Very high level of protection	IP65
	2 High level of protection			e Increased safety		B Ethylene	T4 135 °C	Gb High level of protection	
	3 Normal level of protection			m Encapsulation		C Hydrogen Acetylene	T5 100 °C	Gc Normal level of protection	
				i Intrinsic safety			T6 85 °C		

* Maximum surface temperature

ATEX/IECEx gaseous and dusty atmospheres

II2 GD Ex d IIB T4 Gb IP65 and II2 GD Ex tb IIC T135 °C IP65

I I	2	D	Ex	tb	III	C	T135°C*	Db	IP65
I Mine	M1 Very high level of protection	D Dust	Protection against explosions	ta Protection by enclosure	III Dust	A Combustible flying	T1 450 °C	Ma Very high level of protection	IP65
	M2 High level of protection			tb/tc Protection by enclosure			T2 300 °C	Mb High level of protection	
II Surface	1 Very high level of protection			pb/pc pressurized enclosure		B Non-conductive dust	T3 200 °C	Ga Very high level of protection	
	2 High level of protection			ia/ib/ic intrinsic safety			T4 135 °C	Gb High level of protection	
	3 Normal level of protection			ma/mb/mc Encapsulation		C Conductive dust	T5 100 °C	Gc Normal level of protection	
							T6 85 °C		

Suitable for ATEX/IECEx Parker EX servomotors

Explosion Proof Motor for Zone 1 - EX Series

Overview

Description

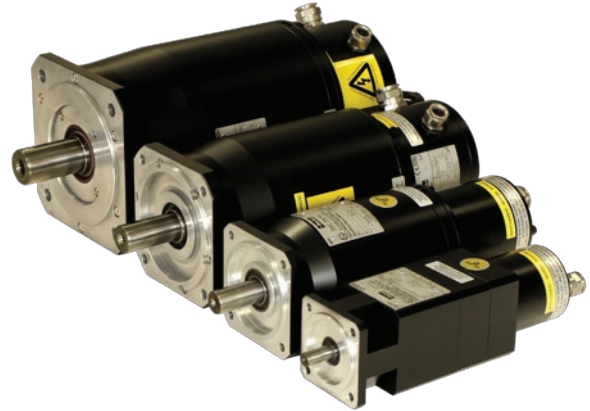
EX series is a range of permanent magnet servo motor designed for use in zone 1 explosive atmospheres. Featuring robust explosion-proof housings, EX motors are capable of bearing internal explosions with no risks of propagation to the neighboring environment. Two versions are available, conforming with North American or European safety standards. EX servomotors are characterized by excellent motion quality, great acceleration / deceleration capabilities, and high torque output over a wide speed range. Various winding variants and numerous options are available to offer maximum flexibility.

Advantages

- Servo motors with explosion proof enclosure "d"
- Conforming with CE/ATEX, UL and IECEx
- For an ambient temperature at 40°C or 60°C
- For gas and dust explosive atmospheres
- High precision
- High motion quality
- High dynamic performance
- Low cogging
- Compactness and robustness
- Maintenance free
- High power density (6 kW in a 155 square frame)
- Compatible with all popular drives

Applications

- Printing machinery
- Packaging, filling machines
- Painting robots
- Coating machines
- Chemical, petro-chemical and pharmaceutical industries
- Robot applications
- Special machines
- Cleaning applications
- Actuator for valve in energy applications
- Waste processing plants

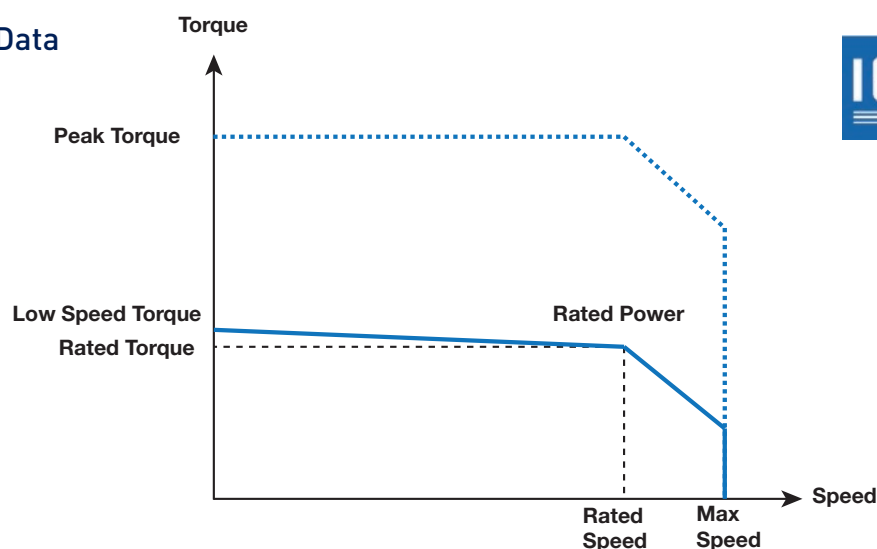


Technical Characteristics - Overview

Motor type	Permanent magnet synchronous motors	
Number of poles	10	
Torque range	1.6 ... 35 Nm	
Speed range	1100...7600 min ⁻¹	
Operating temperature	Up to +40°C (standard) Up to +60°C (with derating)	
Marking	ATEX and IECEx	UL
Voltage supply	230 / 400 VAC	230 / 480 VAC
Conformance	ATEX 2014/34/EU Directive	UL 674 standard: Electric Motors and Generators for use in Division 1 Hazardous (Classified) Locations
	IEC/EN60079-0, IEC/EN60079-1 IEC/EN60079-31 standards	
Classification	II 2G Ex d IIB T4 Gb IP64 (Gas)	Class 1, Division 1, Group C & D
	II 2GD Ex d IIB T4 Gb IP65 Ex tb IIC T135 °C Db IP65 (Gas and Dust)	
Ingress protection level	IP64 (standard)	IP65
	IP65 (option)	
Connections	Cable glands	Tapped holes

EX Servo Motors - CE Marked for Explosive Atmospheres

Technical Data



230 VAC power supply - single or three-phase

Motor	Rated Power P _n	Rated Torque M _n	Rated Speed N _n	Rated Current I _n	Low speed torque M ₀	Low Speed Current I ₀	Peak Torque M _{peak}	Peak Current I _{peak}	Max. Speed N _{max}
	[kW]	[Nm]	[rpm]	[Arms]	[Nm]	[Arms]	[Nm]	[Arms]	[rpm]
40°C ambient temperature									
EX310EAP	0.40	1.66	2300	1.2	1.75	1.2	4.2	3.1	2300
EX310EAK	0.64	1.54	4000	2.0	1.75	2.2	4.2	5.4	4000
EX420EAP	0.77	3.18	2300	2.3	3.5	2.5	8.3	6.2	2300
EX420EAJ	1.12	2.67	4000	3.3	3.5	4.3	8.3	10.7	4000
EX430EAL	1.02	4.2	2300	3.0	4.8	3.3	11.5	8.3	2300
EX430EAF	1.37	3.3	4000	4.1	4.8	5.8	11.5	14.5	4000
EX620EAV	0.76	6.6	1100	2.4	6.7	2.4	16.7	6.0	1100
EX620EAR	1.33	5.8	2200	4.0	6.7	4.5	16.7	11.2	2200
EX630EAR	1.43	9.4	1450	4.2	10.4	4.6	25.9	11.5	1450
EX630EAN	2.02	8.4	2300	5.7	10.4	6.9	25.9	17.3	2300
EX820EAR	2.57	11.2	2200	7.5	14	9.3	32.5	23.2	2200
EX840EAK	3.31	15.8	2000	9.4	24.5	14.3	58.2	35.6	2000
EX860EAJ	3.86	25.4	1450	11.5	35	15.7	83.3	39.2	1450
60°C ambient temperature									
EX310EAP	0.31	1.30	2300	0.9	1.75	1.2	4.2	3.1	2300
EX310EAK	0.40	0.95	4000	1.3	1.75	2.2	4.2	5.4	4000
EX420EAP	0.59	2.45	2300	1.8	3	2.1	7.3	5.3	2300
EX420EAJ	0.63	1.5	4000	1.9	3	3.7	7.3	9.1	4000
EX430EAL	0.82	3.4	2300	2.4	4.2	2.9	10.2	7.2	2300
EX430EAF	0.90	2.9	3000	3.6	4.2	5.1	10.2	12.7	4000
EX620EAV	0.63	5.5	1100	2.0	6	2.2	15.0	5.3	1100
EX620EAR	0.88	3.8	2200	2.8	6	4.1	15.0	9.9	2200
EX630EAR	1.12	7.35	1450	3.4	9	4.0	22.5	9.8	1450
EX630EAN	1.24	5.15	2300	3.7	9	6.1	22.5	14.7	2300
EX820EAR	1.65	8.5	1850	5.8	11	7.3	26.6	18.3	2200
EX840EAK	2.23	11.5	1850	6.9	21	12.2	51.0	30.6	2000
EX860EAJ	2.74	18.0	1450	8.3	31	13.9	75.1	34.8	1450

400 VAC power supply - single or three-phase

Motor	Rated Power P _n	Rated Torque M _n	Rated Speed N _n	Rated Current I _n	Low speed torque M ₀	Low Speed Current I ₀	Peak Torque M _{peak}	Peak Current I _{peak}	Max. Speed N _{max}
	[kW]	[Nm]	[rpm]	[Arms]	[Nm]	[Arms]	[Nm]	[Arms]	[rpm]
40°C ambient temperature									
EX310EAP	0.64	1.54	4000	1.1	1.75	1.2	4.2	3.1	4000
EX310EAK	0.87	1.23	6800	1.6	1.75	2.2	4.2	5.4	6800
EX420EAP	0.94	3	3000	2.1	3.5	2.5	8.3	6.2	3000
EX420EAJ	1.11	1.8	6000	2.3	3.5	4.3	8.3	10.7	6000
EX430EAL	1.37	3.3	4000	2.3	4.8	3.3	11.5	8.3	4000
EX430EAF	1.37	3.3	4000	4.1	4.8	5.8	11.5	14.5	5800
EX620EAV	1.25	6.0	2000	2.2	6.7	2.4	16.7	6.0	2000
EX620EAR	1.53	3.8	3900	2.7	6.7	4.5	16.7	11.2	3900
EX630EAR	2.19	7.8	2700	3.5	10.4	4.6	25.9	11.5	2700
EX630EAN	2.18	5.2	4000	3.8	10.4	6.9	25.9	17.3	4000
EX820EAR	2.84	7.5	3600	5.2	14	9.3	32.5	23.2	3900
EX840EAK	0.99	2.9	3300	2.1	24.5	14.3	58.2	35.6	3500
EX860EAJ	2.35	9.0	2500	4.4	35	15.7	83.3	39.2	2600
60°C ambient temperature									
EX310EAP	0.40	0.95	4000	0.7	1.8	1.2	4.2	3.1	4000
EX310EAK	0.40	0.95	4000	1.3	1.8	2.2	4.2	5.4	6800
EX420EAP	0.66	2.1	3000	1.5	3.0	2.1	7.3	5.3	3000
EX420EAJ	0.63	1.5	4000	1.9	3.0	3.7	7.3	9.1	6000
EX430EAL	0.90	2.9	3000	2.0	4.2	2.9	10.2	7.2	4000
EX430EAF	0.90	2.9	3000	3.6	4.2	5.1	10.2	12.7	4900
EX620EAV	0.88	4.2	2000	1.6	6.0	2.2	15.0	5.3	2000
EX620EAR	0.84	3.2	2500	2.4	6.0	4.1	15.0	9.9	3900
EX630EAR	1.18	4.5	2500	2.2	9.0	4.0	22.5	9.8	2700
EX630EAN	1.18	4.5	2500	3.3	9.0	6.1	22.5	14.7	4000
EX820EAR	1.65	8.5	1850	5.8	11.0	7.3	26.6	18.3	3900
EX840EAK	2.22	11.5	1850	6.9	21.0	12.2	51.0	30.6	2600
EX860EAJ	2.60	15.5	1600	7.2	31.0	13.9	75.1	34.8	2100

Drive Associations

230 VAC power supply

Motor	Associated Drive Sizes ⁽¹⁾			
	PSD1 ⁽²⁾	Compax3	SLVD-N	AC890
With 40°C ambient temperature - 230 VAC power supply				
EX310EAP	PSD1SW1200...	C3S025V2...	SLVD2N...	890SD-231300B...
EX310EAK	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231300B...
EX420EAP	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231550B...
EX420EAJ	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231700B...
EX430EAL	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231550B...
EX430EAF	-	C3S063V2...	SLVD7N...	890SD-231700B...
EX620EAV	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231550B...
EX620EAR	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231700B...
EX630EAR	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231700B...
EX630EAN	-	C3S100V2...	SLVD7N...	890SD-232110B...
EX820EAR	-	C3S100V2...	SLVD10N...	890SD-232165B...
EX840EAK	-	C3S150V2...	SLVD15N...	890SD-232240C...
EX860EAJ	-	-	-	890SD-232240C...
With 60°C ambient temperature - 230 VAC power supply				
EX310EAP	PSD1SW1200...	C3S025V2...	SLVD2N...	890SD-231300B...
EX310EAK	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231300B...
EX420EAP	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231300B...
EX420EAJ	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231550B...
EX430EAL	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231550B...
EX430EAF	-	C3S063V2...	SLVD7N...	890SD-231700B...
EX620EAV	PSD1SW1300...	C3S025V2...	SLVD5N...	890SD-231300B...
EX620EAR	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231700B...
EX630EAR	PSD1SW1300...	C3S063V2...	SLVD5N...	890SD-231550B...
EX630EAN	-	C3S063V2...	SLVD7N...	890SD-232110B...
EX820EAR	-	C3S100V2...	SLVD10N...	890SD-232110B...
EX840EAK	-	C3S150V2...	SLVD15N...	890SD-232240C...
EX860EAJ	-	C3S150V2...	SLVD15N...	890SD-232240C...

⁽¹⁾Ambient temperature for the drives is 40°C

⁽²⁾PSD drive with optional resolver board only

400 VAC power supply

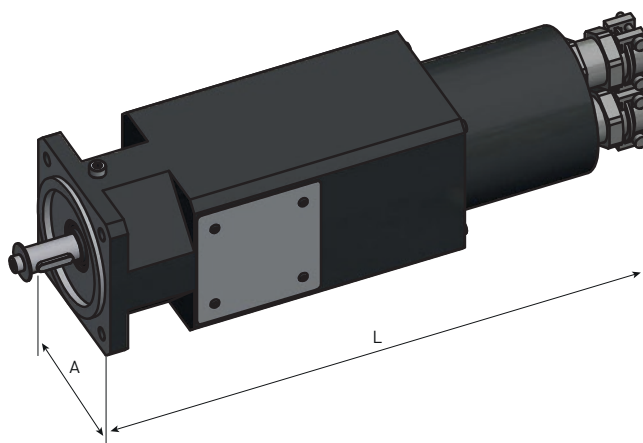
Motor	Associated Drive Sizes ⁽¹⁾			
	PSD1 ⁽²⁾	Compax3	AC890	AC30V
With 40°C ambient temperature - 400 VAC power supply				
EX310EAP	PSD1MW1300...	C3S015V4...	890SD-531200B...	31V-4D-0004
EX310EAK	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX420EAP	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX420EAJ	PSD1MW1300...	C3S075V4...	890SD-532100B...	31V-4D-0006
EX430EAL	PSD1MW1300...	C3S038V4...	890SD-531450B...	31V-4D-0005
EX430EAF	PSD1MW1400...	C3S075V4...	890SD-532100B...	31V-4D-0008
EX620EAV	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX620EAR	PSD1MW1300...	C3S075V4...	890SD-532100B...	31V-4D-0006
EX630EAR	PSD1MW1300...	C3S075V4...	890SD-532100B...	31V-4D-0008
EX630EAN	PSD1MW1400...	C3S150V4...	890SD-532120B...	31V-4D-0010
EX820EAR	PSD1MW1600...	C3S150V4...	890SD-532160B...	31V-4D-0012
EX840EAK	PSD1MW1600...	C3S150V4...	890SD-53216SB...	31V-4E-0023
EX860EAJ	PSD1MW1800...	C3S300V4...	890SD-53216SB...	31V-4E-0023
With 60°C ambient temperature - 400 VAC power supply				
EX310EAP	PSD1MW1300...	C3S015V4...	890SD-531200B...	31V-4D-0004
EX310EAK	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX420EAP	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX420EAJ	PSD1MW1300...	C3S038V4...	890SD-531600B...	31V-4D-0005
EX430EAL	PSD1MW1300...	C3S038V4...	890SD-531450B...	31V-4D-0004
EX430EAF	PSD1MW1400...	C3S075V4...	890SD-532100B...	31V-4D-0008
EX620EAV	PSD1MW1300...	C3S038V4...	890SD-531350B...	31V-4D-0004
EX620EAR	PSD1MW1300...	C3S075V4...	890SD-532100B...	31V-4D-0006
EX630EAR	PSD1MW1300...	C3S075V4...	890SD-531600B...	31V-4D-0006
EX630EAN	PSD1MW1400...	C3S075V4...	890SD-532120B...	31V-4D-0008
EX820EAR	PSD1MW1400...	C3S075V4...	890SD-532120B...	31V-4D-0010
EX840EAK	PSD1MW1600...	C3S150V4...	890SD-53216SB...	31V-4E-0016
EX860EAJ	PSD1MW1600...	C3S150V4...	890SD-53216SB...	31V-4E-0023

⁽¹⁾Ambient temperature for the drives is 40°C

⁽²⁾PSD drive with optional resolver board only

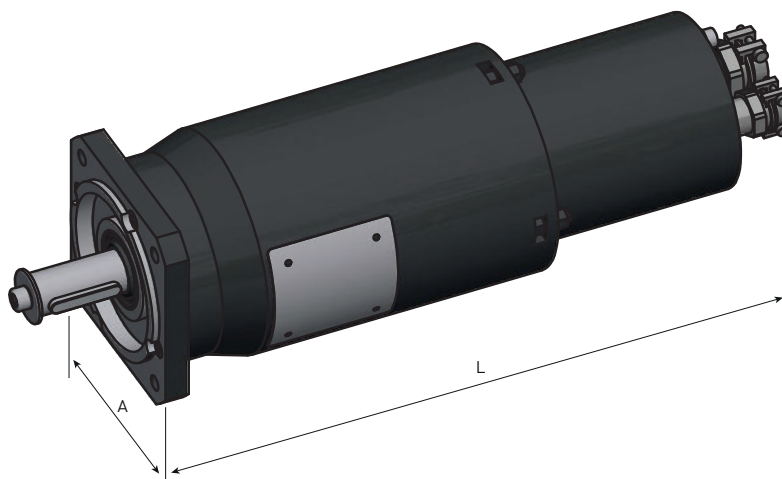
Dimensions (Resolver Version)

EX3



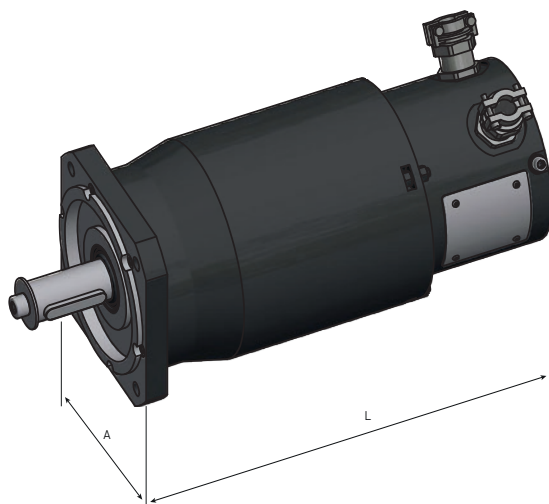
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX310	70	60 / 75	11 x 23	225	2.8	255	3.2

EX4



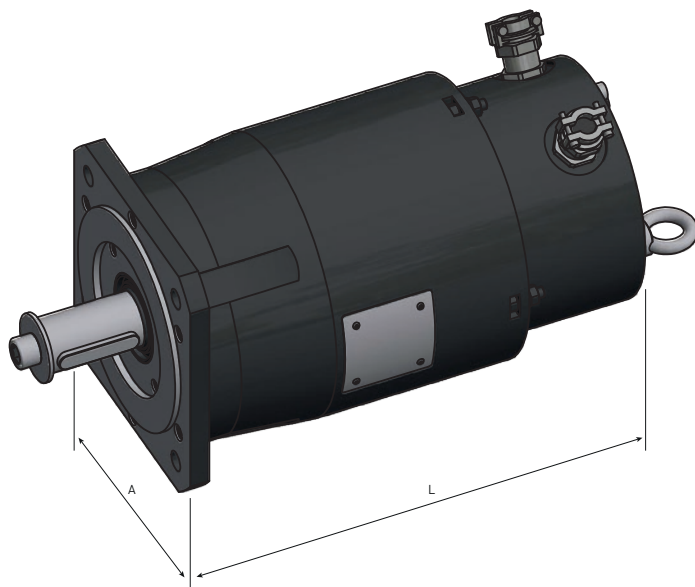
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX420	92	80 / 100	19 x 40	305	7	330	8
EX430				330	8	355	9

EX6



Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]			L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX620	120	110 / 130	24 x 50	275	10	290	11
EX630				300	12.5	325	13.5

EX8



Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]			L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX820	155	130 / 165	32 x 58	325	22	360	25
EX840				385	28	420	31
EX860				445	38	480	41

Order Code

EX Motors - CE Marked

	1	2	3	4	5	6	7	8	9	10	11
Order example	EX	3	10	E	A	P	B	1	2	0	1

1	Product Series	
	EX	ATEX servo motor Zone 1
2	Motor size	
	3	70 mm square
	4	92 mm square
	6	120 mm square
	8	155 mm square
3	Motor length	
	10	up to 60 depending on size
4	Fixed code	
	E	ATEX/IECEX motor
5	Feedback sensor	
	A	2 pole resolver (standard)
	K	Without feedback sensor
	R	Absolute single turn HIPERFACE SKS36 Encoder (128 periods/rev)
	S	Absolute multiturn HIPERFACE SKM36 Encoder (128 periods/rev)
6	Torque/Speed characteristics	
		see table "Technical data"
	...	
7	Painting	
	B	Black RAL9005
8	Electric connection	
	1	Cable gland
9	Brake	
	2	Motor without brake (standard) + thermal switch sensor
	5	Motor with brake + thermal switch sensor
10	Ingress protection level	
	0	IP64 (standard)
	1	IP65
11	Shaft end	
	0	Smooth shaft (standard)
	1	Key shaft

Cables

Motor cable

Drive	Cable reference ⁽¹⁾	
	Current ≤ 12 A @40°C Current ≤ 9 A @60°C	Current ≤ 24 A @40°C Current ≤ 17 A @60°C
PSD1	CP1UQ1D1R0xxx	CP1UQ2D1R0xxx
Compax3	CC3UQ1D1R0xxx	CC3UQ2D1R0xxx
SLVDN	CS5UQ1D1R0xxx	CS5UQ2D1R0xxx
AC890	CS4UQ1D1R0xxx	CS4UQ2D1R0xxx
AC30	CS7UQ1D1R0xxx	CS7UQ2D1R0xxx

Feedback cable

Drive	Cable reference ⁽¹⁾	
	2 pole resolver	Hiperface
PSD1	CP1UA1D1R0xxx	-
Compax3	CC3UA1D1R0xxx	CC3UR1D1R0xxx
SLVDN	CS5UA1D1R0xxx	-
AC890	CS4UA1D1R0xxx	-
AC30	CS7UA1D1R0xxx	

⁽¹⁾ The 3 last digits indicate cable length in meters ± 5 % max

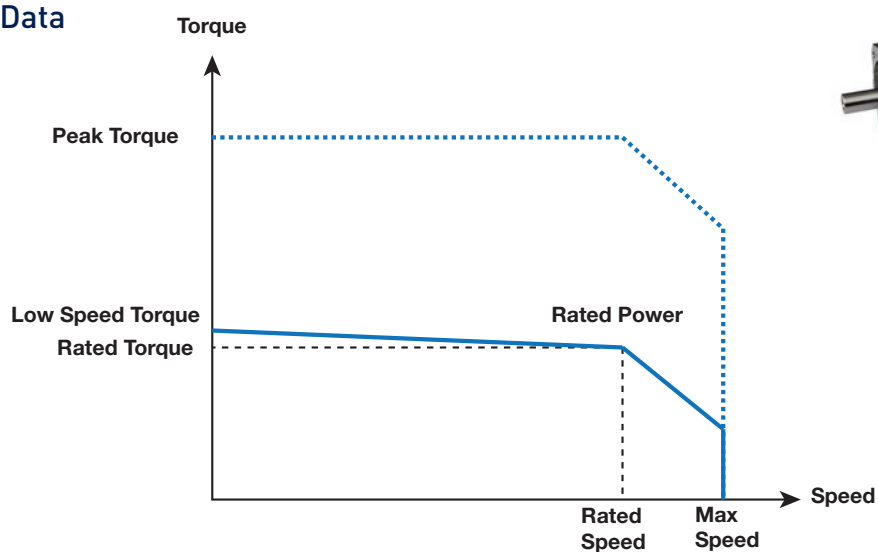
For non-standard length cable with length different from: 3/4/5/10/15/20/25/30/40/50m please contact us.

Example CC3UA1D1R0015: power cable, length = 15 m

For connecting other drives please see the technical manual

EX Servo Motors - UL Marked for Explosive Atmospheres

Technical Data



Motor	Rated Power P _n	Rated Torque M _n	Rated Speed N _n	Rated Current I _n	Low speed torque M ₀	Low Speed Current I ₀	Peak Torque M _{peak}	Peak Current I _{peak}	Max. Speed N _{max}
	[kW]	[Nm]	[rpm]	[Arms]	[Nm]	[Arms]	[Nm]	[Arms]	[rpm]
40°C ambient temperature - 230 VAC power supply									
EX310UAU	0.62	1.4	4200	2.2	1.60	2.5	4.0	6.3	4200
EX420UAI	1.03	2.5	4000	3.3	3	4.2	8.0	10.8	4000
EX430UAG	1.17	3.5	3200	3.9	4.4	4.9	10.0	11.3	3200
EX620UAM	1.37	4.8	2750	4.7	6	6.0	16.0	14.8	2750
EX630UAK	2.01	7.1	2700	6.2	10	7.9	23.7	19.4	2700
EX820UAQ	2.43	10.1	2300	7.2	13	9.1	29.7	22.8	2300
EX840UAL	2.90	16.8	1650	9.0	23	12.0	56.5	32.3	1650
EX860UAJ	3.50	22.3	1500	10.0	31	13.9	78.5	37.1	1500
40°C ambient temperature - 400 VAC power supply									
EX310UAU	0.82	1.0	7600	1.7	1.6	2.5	4.0	6.3	7600
EX420UAI	0.81	1.1	7000	1.6	3.2	4.2	8.0	10.8	7000
EX430UAG	1.02	1.7	5700	2.1	4.4	4.9	10.0	11.3	5700
EX620UAM	1.27	2.8	4300	3.0	6.4	6.0	16.0	14.8	4300
EX630UAK	1.92	4.4	4200	4.0	9.5	7.9	23.7	19.4	4200
EX820UAQ	2.62	7.0	3600	5.1	12.9	9.1	29.7	22.8	3600
EX840UAL	2.08	6.8	2900	3.9	22.6	12.0	56.5	32.3	2900
EX860UAJ	2.18	8.3	2500	4.0	31.4	13.9	78.5	37.1	2500

Drive Associations

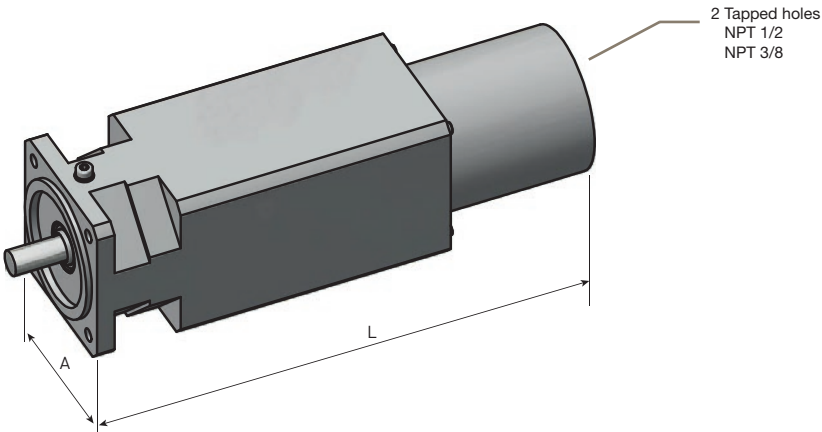
Motor	Associated Drive Sizes ⁽¹⁾			AC30	AC890
	PSD1 ⁽²⁾	Compax3	SLVD-N		
With 40°C ambient temperature - 230 VAC power supply					
EX310UAU	PSD1SW1300...	C3S025V2...	SLVD5N...	-	890SD-231550B...
EX420UAI	PSD1SW1300...	C3S063V2...	SLVD5N...	-	890SD-231700B...
EX430UAG	PSD1SW1300...	C3S063V2...	SLVD5N...	-	890SD-231700B...
EX620UAM	-	C3S063V2...	SLVD7N...	-	890SD-231700B...
EX630UAK	-	C3S100V2...	SLVD10N...	-	890SD-232110B...
EX820UAQ	-	C3S100V2...	SLVD10N...	-	890SD-232165B...
EX840UAL	-	C3S150V2...	SLVD15N...	-	890SD-232165B...
EX860UAJ	-	C3S150V2...	SLVD15N...	-	890SD-232240C...
With 40°C ambient temperature - 400 VAC power supply					
EX310UAU	PSD1MW1300...	C3S038V4...	-	31V-4D-0004	890SD-531350B...
EX420UAI	PSD1MW1300...	C3S075V4...	-	31V-4D-0006	890SD-532100B...
EX430UAG	PSD1MW1300...	C3S075V4...	-	31V-4D-0006	890SD-532100B...
EX620UAM	PSD1MW1400...	C3S075V4...	-	31V-4D-0008	890SD-532100B...
EX630UAK	PSD1MW1400...	C3S150V4...	-	31V-4D-0010	890SD-532120B...
EX820UAQ	PSD1MW1600...	C3S150V4...	-	31V-4D-0012	890SD-532160B...
EX840UAL	PSD1MW1600...	C3S150V4...	-	31V-4E-0016	890SD-532160B...
EX860UAJ	PSD1MW1600...	C3S150V4...	-	31V-4E-0023	890SD-532240B...

⁽¹⁾Ambient temperature for the drives is 40°C

⁽²⁾PSD drive with optional resolver board only

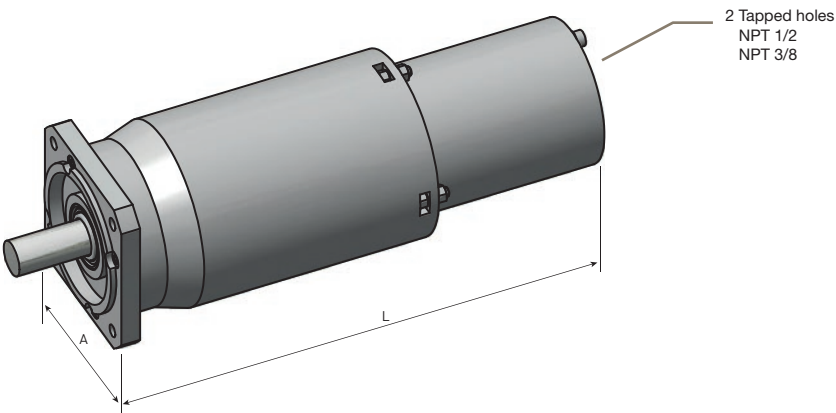
Dimensions (Resolver Version)

EX3



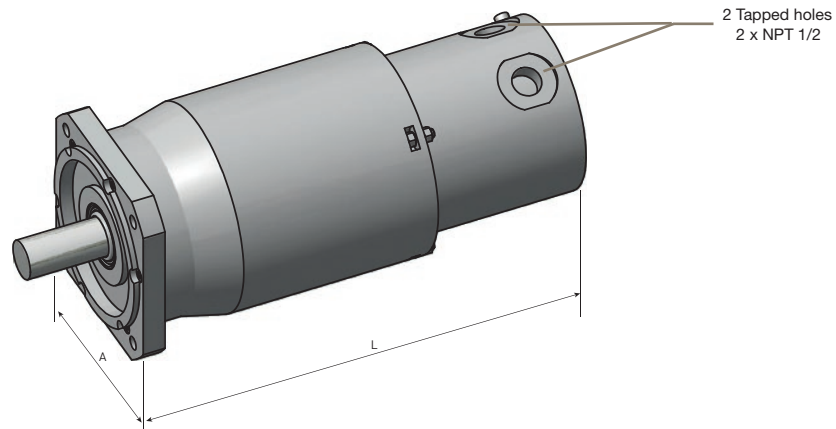
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]			L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX310	70	60 / 75	11 x 23	240	2.8	270	3.2

EX4



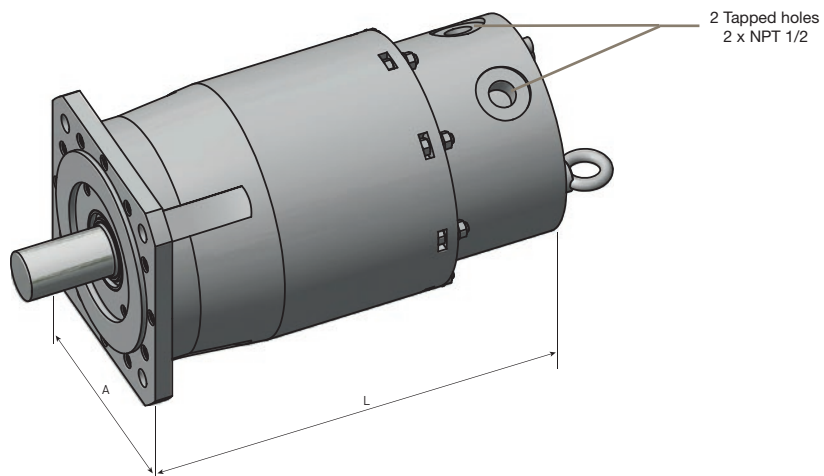
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]			L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX420	92	80 / 100	19 x 40	310	7	335	8
EX430				335	8	360	9

EX6



Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX620	120	110 / 130	24 x 50	325	10	355	11
EX630				355	12.5	380	13.5

EX8



Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake	
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]
EX820	155	130 / 165	32 x 58	335	22	370	25
EX840				395	28	430	31
EX860				455	38	490	41

Order Code

EX Motors - UL Marked

	1	2	3	4	5	6	7	8	9	10	11
Order example	EX	3	10	U	A	U	R	1	2	1	0

1	Product Series
EX	Atex servo motor Zone 1
2	Motor size
3	70 mm square
4	92 mm square
6	120 mm square
8	155 mm square
3	Motor length
10	up to 60 depending on size
4	Fixed code
U	UL Standard
5	Feedback sensor
A	2 pole resolver (standard)
K	Without feedback sensor
R	Absolute single turn HIPERFACE SKS36 Encoder (128 periods/rev)
S	Absolute multiturn HIPERFACE SKM36 Encoder (128 periods/rev)
6	Torque/Speed characteristics
	see table "Technical data"
...	
7	Fixed code
R	
8	Electric connection
1	Tapped holes
9	Brake
2	Motor without brake + thermal switch sensor (standard)
5	Motor with Brake + thermal switch sensor
10	Ingress protection level
1	IP65
11	Shaft end
0	Smooth shaft (standard)
1	Key shaft

Additional Information

Feedback Sensors

2 poles resolver - option A

- Accuracy: $\pm 10'$ max
- Transformation ratio: $0.5 \pm 5\%$
- Max. operating speed: $17\,000\text{ min}^{-1}$
- Working temperature range: $-55\ldots+155\text{ }^{\circ}\text{C}$

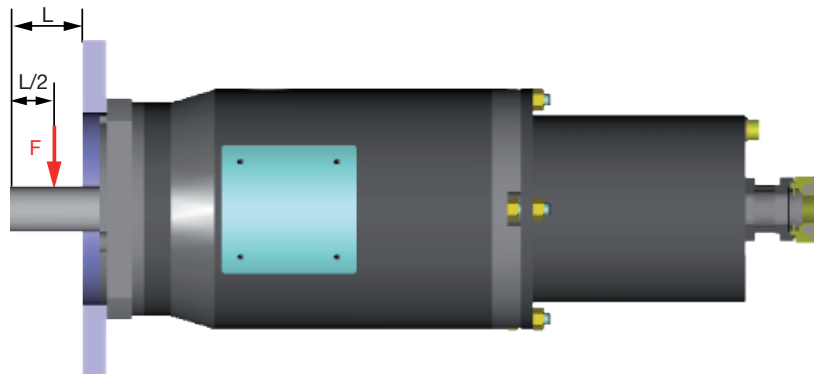
Single turn / Multiturn absolute encoder HIPERFACE SKS/SKM36 - option R/S

- Number of sine/cosine periods per revolution: 128
- Absolute position per revolution: 4096 (12 bits)
- Number of absolutely encodable revolutions: 4096 (SKM36)
- Max. operating speed SKS36: $12\,000\text{ min}^{-1}$
- Max. operating speed SKM36: $9\,000\text{ min}^{-1}$
- Working temperature range: $-20\ldots+110\text{ }^{\circ}\text{C}$

Shaft Loads for CE and UL Motors

Maximum load acceptable on the shaft

The values written in the table are given for a load placed on the middle of the shaft like the picture below.



Due to the small ATEX airgap requirements between the shaft and the front flange, the radial loads on the shaft are lower than standard NX motors.

The ATEX airgap requirements depend on the volume of the motor and can lead to lower radial loads for bigger motors.

Regarding to these shaft loads, you must not use a pulley belt system without a load take-up system.

Type	Max. shaft load F [N]
EX310	100
EX430	500
EX630	500
EX860	250



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Aftermarket services
Commercial transports
Engines
General & business aviation
Helicopters
Launch vehicles
Military aircraft
Missiles
Power generation
Regional transports
Unmanned aerial vehicles

Key Products

Control systems & actuation products
Engine systems & components
Fluid conveyance systems & components
Fluid metering, delivery & atomization devices
Fuel systems & components
Fuel tank inerting systems
Hydraulic systems & components
Thermal management
Wheels & brakes



Climate Control

Key Markets

Agriculture
Air conditioning
Construction Machinery
Food & beverage
Industrial machinery
Life sciences
Oil & gas
Precision cooling
Process
Refrigeration
Transportation

Key Products

Accumulators
Advanced actuators
CO₂ controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves



Electromechanical

Key Markets

Aerospace
Factory automation
Life science & medical
Machine tools
Packaging machinery
Paper machinery
Plastics machinery & converting
Primary metals
Semiconductor & electronics
Textile
Wire & cable

Key Products

AC/DC drives & systems
Electric actuators, gantry robots & slides
Electrohydraulic actuation systems
Electromechanical actuation systems
Human machine interface
Linear motors
Stepper motors, servo motors, drives & controls
Structural extrusions



Filtration

Key Markets

Aerospace
Food & beverage
Industrial plant & equipment
Life sciences
Marine
Mobile equipment
Oil & gas
Power generation & renewable energy
Process
Transportation
Water Purification

Key Products

Analytical gas generators
Compressed air filters & dryers
Engine air, coolant, fuel & oil filtration systems
Fluid condition monitoring systems
Hydraulic & lubrication filters
Hydrogen, nitrogen & zero air generators
Instrumentation filters
Membrane & fiber filters
Microfiltration
Sterile air filtration
Water desalination & purification filters & systems



Fluid & Gas Handling

Key Markets

Aerial lift
Agriculture
Bulk chemical handling
Construction machinery
Food & beverage
Fuel & gas delivery
Industrial machinery
Life sciences
Marine
Mining
Mobile
Oil & gas
Renewable energy
Transportation

Key Products

Check valves
Connectors for low pressure fluid conveyance
Deep sea umbilicals
Diagnostic equipment
Hose couplings
Industrial hose
Mooring systems & power cables
PTFE hose & tubing
Quick couplings
Rubber & thermoplastic hose
Tube fittings & adapters
Tubing & plastic fittings



Hydraulics

Key Markets

Aerial lift
Agriculture
Alternative energy
Construction machinery
Forestry
Industrial machinery
Machine tools
Marine
Material handling
Mining
Oil & gas
Power generation
Refuse vehicles
Renewable energy
Truck hydraulics
Turf equipment

Key Products

Accumulators
Cartridge valves
Electrohydraulic actuators
Human machine interfaces
Hybrid drives
Hydraulic cylinders
Hydraulic motors & pumps
Hydraulic systems
Hydraulic valves & controls
Hydrostatic steering
Integrated hydraulic circuits
Power take-offs
Power units
Rotary actuators
Sensors



Pneumatics

Key Markets

Aerospace
Conveyor & material handling
Factory automation
Life science & medical
Machine tools
Packaging machinery
Transportation & automotive

Key Products

Air preparation
Brass fittings & valves
Manifolds
Pneumatic accessories
Pneumatic actuators & grippers
Pneumatic valves & controls
Quick disconnects
Rotary actuators
Rubber & thermoplastic hose & couplings
Structural extrusions
Thermoplastic tubing & fittings
Vacuum generators, cups & sensors



Process Control

Key Markets

Alternative fuels
Biopharmaceuticals
Chemical & refining
Food & beverage
Marine & shipbuilding
Medical & dental
Microelectronics
Nuclear Power
Offshore oil exploration
Oil & gas
Pharmaceuticals
Power generation
Pulp & paper
Steel
Water/wastewater

Key Products

Analytical Instruments
Analytical sample conditioning products & systems
Chemical injection fittings & valves
Fluoropolymer chemical delivery fittings, valves & pumps
High purity gas delivery fittings, valves, regulators & digital flow controllers
Industrial mass flow meters/controllers
Permanent no-weld tube fittings
Precision industrial regulators & flow controllers
Process control double block & bleeds
Process control fittings, valves, regulators & manifold valves



Sealing & Shielding

Key Markets

Aerospace
Chemical processing
Consumer
Fluid power
General Industrial
Information technology
Life sciences
Microelectronics
Military
Oil & gas
Power generation
Renewable energy
Telecommunications
Transportation

Key Products

Dynamic seals
Elastomeric o-rings
Electro-medical instrument design & assembly
EMI shielding
Extruded & precision-cut, fabricated elastomeric seals
High temperature metal seals
Homogeneous & inserted elastomeric shapes
Medical device fabrication & assembly
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192-063032N1-NA Version May 2017



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