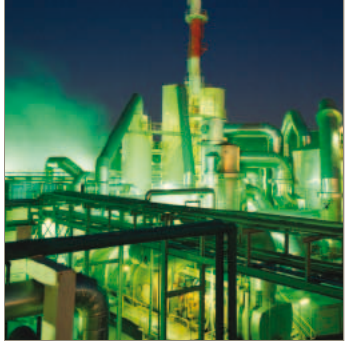
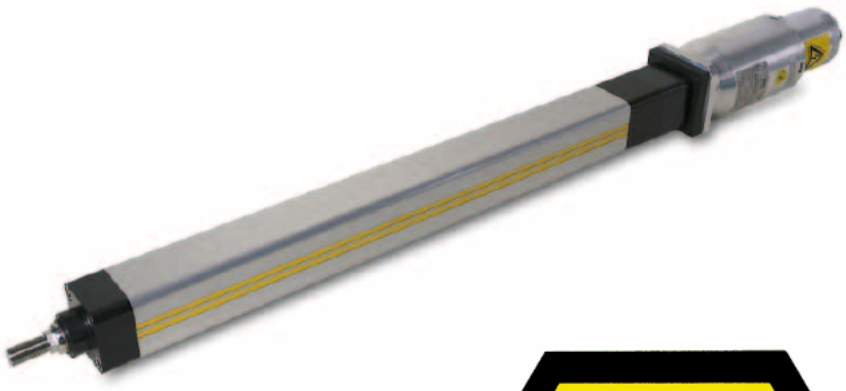
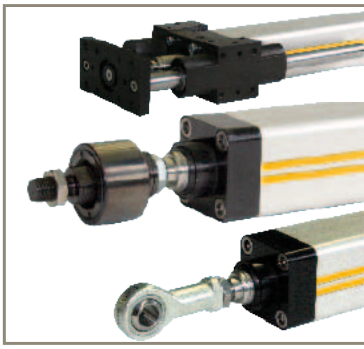


aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Electromechanical Solutions for ATEX Environments

Explosion-Proof Servo Motors and Electro Cylinder



Parker

ENGINEERING YOUR SUCCESS.

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- 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.
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Electromechanical Solutions for ATEX Environments

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
Chennai, India

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

Offenburg, Germany

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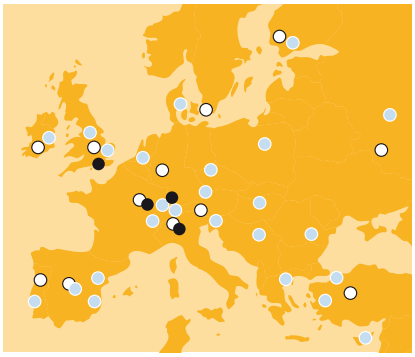
Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.

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



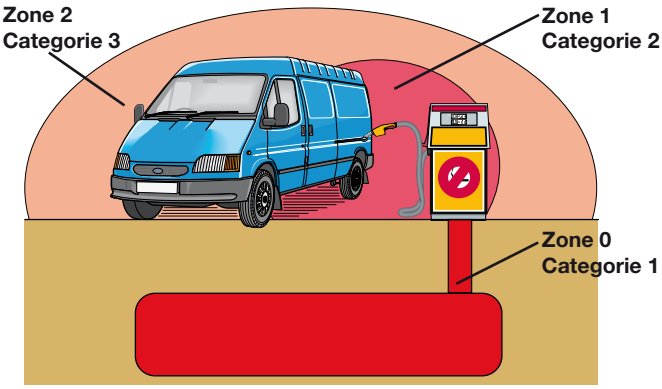
Electromechanical Manufacturing
Parker Sales Offices
Distributors

Dijon, France

Electromechanical Solutions for ATEX Environments

Overview

In working in environments which might be at risk from explosive substances the EU ATEX directives must be taken into consideration. The responsible parties must assess the area, where explosive gas/dust mixes may occur and, if necessary, subdivide them into individual zones. This zone classification allows the responsible parties correct selection of suitable machinery and equipment, for use in that area.
The table below describes the zone classifications of an installation, where potentially explosive atmospheres may occur.



User			Suitable machinery and devices		
Gas zone	Dust zone	Presence of potentially explosive atmospheres	Equipment group*	Equipment category	Area of application (not mining)
0		Permanently, often, for a long period approx. >1000 h/year	II	1G	Gases, mist, vapor
	20		II	1D	Dust
1		Occasionally approx. 10...1000 h/year	II	2G	Gases, mist, vapor
	21		II	2D	Dust
2		Rarely, for a short period, in the event of an error approx. <10 h/year	II	3G	Gases, mist, vapor
	22		II	3D	Dust

* Equipment for use in areas (except underground in mining) which might be dangerous due to an explosive atmosphere..

ATEX Classification

Parker ETH – Electro Cylinders with the ATEX version are certified for use in explosive gas atmospheres (device group II, category 2G).
An ETH electro cylinder with the ATEX supplement complies with the requirements of the EC directive 94/9/EC (ATEX 95). You can find here an explanation of the features and areas of usage resulting from the ATEX marking:

ETH032 & ETH050: II 2G c IIC T4

II	all areas, except underground (mining)
2G	Zone 1, 2, gas explosion category 2G, 3G
c	constructional safety in accordance with DIN EN 13463-5
IIC	suitable for explosive region IIA, IIB and IIC Typical gases: Hydrogen Ignition energy: >45 µJoule
T4	Temperature class 4 Ignition temperature of flammable substances >135 °C

ETH080, ETH100 & ETH125: II 2G c IIB T4

II	all areas, except underground (mining)
2G	Zone 1, 2, gas explosion category 2G, 3G
c	constructional safety in accordance with DIN EN 13463-5
IIB	suitable for explosion region IIA and IIB Typical gases: Ethylene Ignition energy: >160 µJoule
T4	Temperature class 4 Ignition temperature of flammable substances >135 °C

EX Series is a range of permanent magnet **servo motors** designed for use in explosive atmospheres and are CE marked in accordance with ATEX directive 94/9/CE

Serie EX: Gaseous atmospheres: II 2G Ex d IIB T4 IP64

II	all areas, except underground (mining)
2G	Zone 1, 2, gas explosion category 2G, 3G
d	flameproof enclosure DIN EN 13463-3
IIB	suitable for explosion region IIA and IIB Typical gases: Ethylene Ignition energy: >160 µJoule
T4	Temperature class 4 Ignition temperature of flammable substances >135 °C

Product Design

Ballscrew

A high-quality precision class 7 ballscrew in accordance with ISO 3408 is used. The ball bearings between screw and nut ensure a low frictional resistance. This ensures an especially smooth operation over the entire speed range, high service life and excellent efficiency.

Screw support bearing (front end)

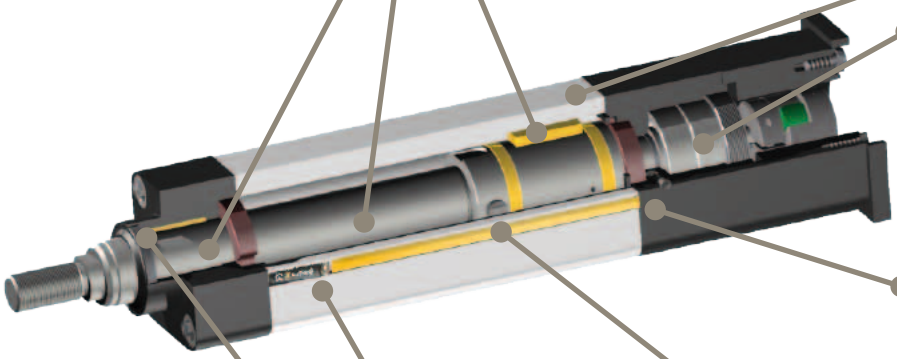
The front screw support bearing is supported by a polymer sliding bearing. This eliminates vibration and run-out. The result is quieter, smoother motion with better precision, longer screw life, and increased dynamic performance.

Piston Rod Anti-rotation Guidance

One of the unique design changes in the ETH is a new anti-rotation device. The high quality, maintenance free polymer bushing offers robust guidance preventing the piston rod from twisting as the rod extends and retracts.

Extruded cylinder body

The extrusion design reduces the number of slots or grooves for a cleaner overall design. The only slots are there for sensor mounting and are easily covered to eliminate any area for debris to be trapped. The result is a cleaner, more environmentally friendly design.



Screw Support Bearing (motor end)

A double stacked set of angular contact bearings allows for high thrust forces in both the extend and retract directions. The result is a design with high force density and minimal clearance when changing directions of motion.

Easy Lubrication Port

The integrated lubrication fitting allows quick, simple and easy access to regrease the ball screw. In the event the rear is inaccessible the port can be located in the center of the extrusion (optional) The result is reduced down time for product maintenance yielding a higher ROI and a longer product life.

Piston Rod Support Bearing & Protection

The extra long cylinder rod bearing allows high lateral load forces. A wiper ring prevents the ingress of external contamination under normal conditions. In the event of fine dust, a high amount of dirt as well as muds and liquids, special sealing is required, which is available on request.

Sensors

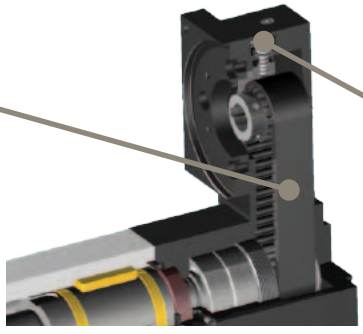
The sensors are directly integrated into the profile; avoiding projecting edges. Cabling is neatly hidden under the yellow cover (fitting sensors available as accessories).

Permanent magnet

All electro cylinders are equipped with several permanent magnets integrated into the screw nut. The permanent magnets actuate the sensors, which can be mounted in the longitudinal grooves of the cylinder body.

Toothed belt transmission

The slip and wear free toothed belt transmission for parallel drive cylinders (motor mounted parallel to the cylinder) features a high efficiency and a transmission ratio of 1:1.



Belt tensioning device

A sophisticated belt tensioning device for parallel motor mounting allows the toothed belt to be pre tensioned precisely.

High Force Electro Thrust Cylinder - ETH

Overview

Description

The ETH electro cylinder closes the gap between pneumatic and hydraulic actuators; it is suitable to replace those in many applications and simultaneously increase the reliability of the production process. Taking the costs for air and oil into consideration, you will find that in most cases an electromechanical system such as the ETH electro cylinder offers the more economical solution. Combined with a wide choice of accessories, it offers many possibilities in a wide variety of fields.

Typical areas of application

- Material handling and feed systems
  - wood and plastic working industry
  - vertical actuators for loading machine tools
  - in the textile industry for tensioning / gripping textile fabrics
  - in the automotive industry for transporting and feeding components
- Testing equipment and laboratory applications
- Valve and flap actuation
- Pressing
- Packaging machinery
- Process automation in the food and beverage industry

Features

- Unrivaled power density - high forces and small frame sizes
- Cabling can be concealed in the profile
- Accessories with integrated force sensors help to allot and even to control forces precisely
- Optimized for safe handling and simple cleaning
- High service life
- Reduced maintenance costs thanks to lubricating access in the cylinder flange
- Easy replacement due to pneumatic ISO flange norm (DIN ISO 15552:2005-12) conformity
- Integrated anti-rotation device
- Reduced noise emission
- All from one source
  We offer the complete drive train: Drive controllers, motors and gearboxes to match the Electro Cylinder

Technical Characteristics - Overview

Type	ETH Electro Cylinder
Frame sizes	ETH032 / ETH050 / ETH080 / ETH100 / ETH125
Screw lead	5, 10, 16, 20, 32 mm
Stroke	up to 2000 mm
Traction/thrust force	up to 114 000 N
Speed	up to 1.7 m/s
Acceleration	up to 15 m/s²
Equivalent dynamic axial force at a lifetime of 2500 km	up to 49 600 N
Efficiency	up to 90 %
Repeatability	up to ± 0.03 mm
Protection classes	IP54 IP54 with stainless screws IP65
Drive	Inline: Axial drive or parallel drive with high performance toothed belt
Directives	2011/65/EC: Conform to RoHS
	94/9/EC: ATEX Equipment group II Category 2 Suitable for gas environments of Zone 1 or 2
Classification	ETH032 / ETH050: Ex II 2G c IIC T4
	ETH080 / ETH100, ETH125: Ex II 2G c IIB T4

Technical Characteristics

Cylinder size type		Unit	ETH032			ETH050			ETH080		
			M05	M10	M16[4]	M05	M10	M20[3]	M05	M10	M32[4]
Screw lead		[mm]	5	10	16	5	10	20	5	10	32
Screw diameter		[mm]		16			20			32	
Travels, speeds and accelerations											
Available strokes [1) 2)]		[mm]	continuous from 50-1000 & standard strokes			continuous from 50-1200 & standard strokes			continuous from 50-1600 & standard strokes		
Max. permissible speed at stroke =											
50-400 mm		[mm/s]	333	667	1067	333	667	1333	267	533	1707
600 mm		[mm/s]	286	540	855	333	666	1318	267	533	1707
800 mm		[mm/s]	196	373	592	238	462	917	267	533	1707
1000 mm		[mm/s]	146	277	440	177	345	684	264	501	1561
1200 mm		[mm/s]	-	-	-	139	270	536	207	394	1233
1400 mm		[mm/s]	-	-	-	-	-	-	168	320	1006
1600 mm		[mm/s]	-	-	-	-	-	-	140	267	841
Max. Acceleration		[m/s^2]	4	8	12	4	8	15	4	8	15
Forces											
Max. axial traction/thrust force motor inline		[N]	3600	3700	2400	9300	7000	4400	17800	25100	10600
Max. axial traction/thrust force depending on the motor speed n Motor parallel	n < 100 min^{-1}	[N]		3280	2050		4920	2460		11620	3630
	100 < n < 300 min^{-1}	[N]		2620	1640	7870	3930	1960			
	n > 300 min^{-1}	[N]		1820	1140	5480	2740	1370		10720	3350
Equivalent dynamic axial force at a lifetime of 2500 km		[N]	1130	1700	1610	2910	3250	2740	3140	7500	6050
Max. transmissible torque / force constant											
Max. transmissible torque inline motor		[Nm]	3.2	6.5	6.8	8.2	12.4	15.6	15.7	44.4	60.0
Max. transmissible torque depending on the motor speed n Motor parallel	n < 100 min^{-1}	[Nm]	3.5	6.4		9.1	9.3		17.5	22.8	
	100 < n < 300 min^{-1}	[Nm]	3.5	5.2		7.7	7.7		17.5	22.8	
	n > 300 min^{-1}	[Nm]	3.5	3.6		5.4	5.4		17.5	21.1	
Force constant motor inline [5)]		[N/Nm]	1131	565	353	1131	565	283	1131	565	177
Force constant motor parallel [5)]		[N/Nm]	1018	509	318	1018	509	254	1018	509	159
Mass											
Mass of base unit with zero stroke (incl. Cylinder rod)		[kg]	1.2	1.2	1.3	2.2	2.3	2.5	6.9	7.6	8.7
Mass of additional stroke (incl. Cylinder rod)		[kg/m]		4.8			8.6			18.7	
Weight of cylinder rod with zero stroke		[kg]		0.06			0.15			0.59	
Weight of cylinder rod - additional length		[kg/m]		0.99			1.85			4.93	
Mass moments of inertia											
Motor parallel without stroke		[kgmm^2]	8.3	8.8	14.1	30.3	30.6	38.0	215.2	213.6	301.9
Motor inline without stroke		[kgmm^2]	7.1	7.6	12.9	25.3	25.7	33.1	166.2	164.5	252.9
Parallel/inline motor per meter		[kgmm^2/m]	41.3	37.6	41.5	97.7	92.4	106.4	527.7	470.0	585.4
Accuracy: Bidirectional Repeatability (ISO230-2)											
Motor inline		[mm]	±0.03								
Motor parallel		[mm]	±0.05								
Efficiency											
Motor inline	the efficiency includes all friction torques	[%]	90								
Motor parallel		[%]	81								
Ambient conditions											
Operating Temperature		[°C]	-10...+70								
Ambient temperature		[°C]	-10...+40								
Storage temperature		[°C]	-20...+40								
Humidity		[%]	0...95 % (non-condensing)								
Location height range		[m]	max. 3000								

1) "Order Code" (see ETH catalogue), 2) Intermediate stroke lengths may be interpolated.
3) ATEX on request
4) ATEX not available, 5) The efficiency factors are included in the force constants.

Cylinder size type		Unit	ETH100		ETH125	
			M10	M20	M10	M20
Screw lead		[mm]	10	20	10	20
Screw diameter		[mm]	50		63	
Travels, speeds and accelerations						
Available strokes [1) 2)]		[mm]	continuous from 100-2000 & standard strokes		continuous from 100-2000 & standard strokes	
Max. permissible speed at stroke =						
100-400 mm		[mm/s]	400	800	417	833
500 mm		[mm/s]	400	747	417	807
600 mm		[mm/s]	333	622	395	684
800 mm		[mm/s]	241	457	290	514
1000 mm		[mm/s]	185	354	224	405
1200 mm		[mm/s]	148	284	180	329
1400 mm		[mm/s]	122	235	148	275
1600 mm		[mm/s]	102	198	125	234
2000 mm		[mm/s]	76	148	94	170
Max. Acceleration		[m/s^2]	8	10	8	10
Forces						
Max. axial traction/thrust force motor inline		[N]	54800	56000	88700	114000
Max. axial traction/thrust force depending on the motor speed n Motor parallel	n < 100 min^{-1}	[N]		50800	76300	81400
	100 < n < 300 min^{-1}	[N]		43200		73700
	n > 300 min^{-1}	[N]		35600		61000
Equivalent dynamic axial force at a lifetime of 2500 km		[N]	18410	27100	27140	49600
Max. transmissible torque / force constant						
Max. transmissible torque inline motor		[Nm]	100	200	150	400
Max. transmissible torque depending on the motor speed n Motor parallel	n < 100 min^{-1}	[Nm]	108	200		320
	100 < n < 300 min^{-1}	[Nm]		170		290
	n > 300 min^{-1}	[Nm]		140		240
Force constant motor inline [5)]		[N/Nm]	565	283	565	283
Force constant motor parallel [5)]		[N/Nm]	509	254	509	254
Weight						
Mass of base unit with zero stroke (incl. Cylinder rod)		[kg]	21	23	56	64
Mass of additional stroke (incl. Cylinder rod)		[kg/m]	39		62	
Weight of cylinder rod with zero stroke		[kg]	1.2		2.9	
Weight of cylinder rod - additional length		[kg/m]	7.8		14.4	
Mass moments of inertia						
Motor parallel without stroke		[kgmm^2]	5860	6240	17050	17990
Motor inline without stroke		[kgmm^2]	2240	2620	12960	13400
Parallel/inline motor per meter		[kgmm^2/m]	4270	4710	10070	10490
Accuracy: Bidirectional Repeatability (ISO230-2)						
Motor inline		[mm]	±0.03			
Motor parallel		[mm]	±0.05			
Efficiency						
Motor inline	the efficiency includes all friction torques	[%]	90			
Motor parallel		[%]	81			
Ambient conditions						
Operating Temperature		[°C]	-10...+70			
Ambient temperature		[°C]	-10...+40			
Storage temperature		[°C]	-20...+40			
Humidity		[%]	0...95 % (non-condensing)			
Location height range		[m]	max. 3000			

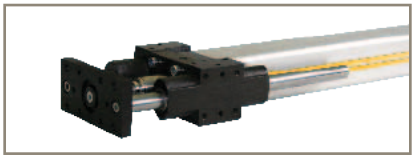
[1)] "Order Code" (see ETH catalogue), [2)] Intermediate stroke lengths may be interpolated.

[5)] The efficiency factors are included in the force constants.

Technical Data apply under normal conditions and only for the individual operating and load modes. In the case of compound loads, it is necessary to verify in accordance with normal physical laws and technical standards whether individual ratings should be reduced. In case of doubt please contact Parker.

Accessories for ETH Electro Cylinder

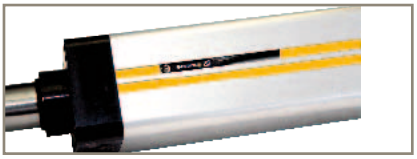
Piston Rod Guide Module



The rod guiding performs the following tasks:

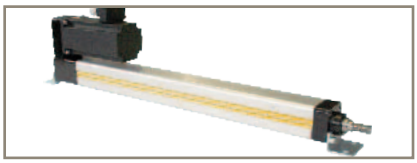
- Anti-rotation device for higher torques
- Absorption of lateral forces
- Relieves the cylinder of lateral forces

Home / limit switches

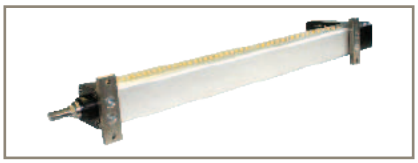


Mounting Methods

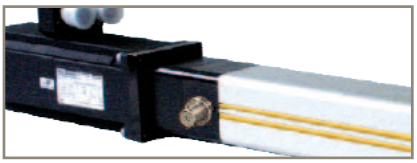
Foot mounting



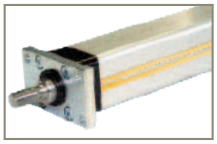
Mounting Flanges

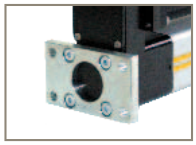


Centre trunnion mounting

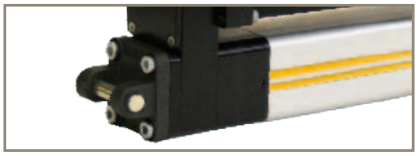


Installation flanges

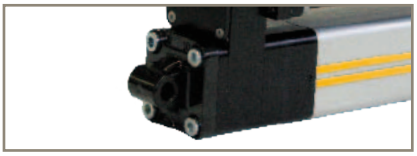




Rear Clevis



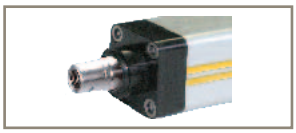
Rear Eye Mounting



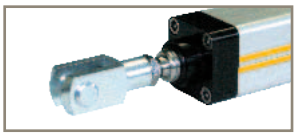
Rod End

with external thread

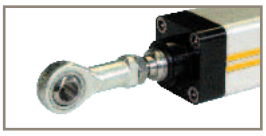
with internal thread



Clevis

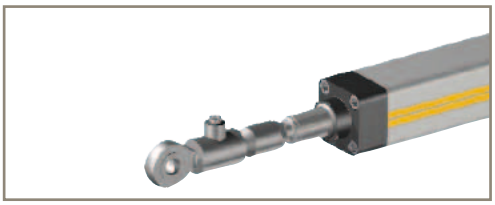


Spherical Rod eye

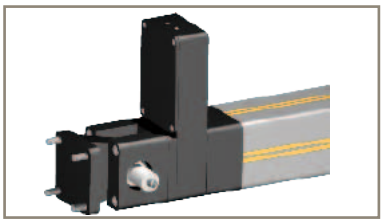


Force Sensor

Joint head with integrated force sensor



Rear clevis with force sensor



Motor and amplifier

Servo amplifier
For additional information please see our product catalog 192-490123 or our website www.parker.com/eme

Motors and gears
For additional information on motors please see our website www.parker.com/eme and for gears www.parker.com/eme/gear

Explosion Proof Servo Motor - EX Series

Overview

Description

EX series is a range of permanent magnet servo motor designed for use in explosive atmospheres. Featuring robust explosion-proof housings, EX motors are capable of bearing internal explosions with no risks of propagation to the neighbouring 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 housings
- CE or UL versions available
- High dynamic performance
- Compact and robust
- Maintenance free

Applications

- Food, Pharma & Beverage
- Material Forming
- Printing Industry
- Hazardous / Ex Enviroment
- Painting robots

Features

- Mounting
  - Flange with clearance holes
- Mechanical interface
  - Solid smooth shaft (standard)
  - Solid shaft with key (option)
- Feedback sensors
  - 2 pole resolver (standard)
  - Absolute EnDat encoder (option)
  - Absolute Hiperface encoder (option)
- Thermal protection
  - Thermoswitches and thermofuses integrated in the windings
- Other options
  - Parking brake

Technical Characteristics - Overview

Motor type	Permanent magnet synchronous motors	
Number of poles	10	
Torque range	1.75 ... 35 Nm	
Speed range	2000...8000 min^{-1}	
Marking	CE	UL
Voltage supply	230 / 400 VAC	230 / 480 VAC
Conformance	ATEX 94/9/EC Directive	UL 674 standard: Electric Motors and Generators for use in Division 1 Hazardous (Classified) Locations
	EN60079-0, EN60079-1 EN61241-0 and EN61241-1 standards	
Classification	II 2G Ex d IIB T4 IP64 (Gas)	Class 1, Division 1, Group C & D
	II 2GD Ex d IIB T4 IP65 Ex tD A21 IP65 T135 °C (Gas and dust)	
Ingress protection level	IP64 (standard)	IP65
	IP65 (option)	
Connections	Cable glands	Tapped holes

Technical Characteristics

Rated Speed N_{max} [min^{-1}]	Stall Torque M_0 [Nm]	Stall Current I_0 [A_{RMS}]	Rated Torque M_N [Nm]	Rated Current I_N [A_{RMS}]	Peak Torque M_{max} [Nm]	Peak Current I_{max} [A_{RMS}]	Max. Speed with Compax3 N_{max} [min^{-1}]	Moment of Inertia J [$kgmm^2$]	Product Code					
230 VAC power supply														
2300	1.75	1.24	1.66	1.19	6.6	5.64	1960	79	EX310E	■	PR1	■	■	■
4000	1.75	2.16	1.54	1.96	6.6	9.85	3630	79	EX310E	■	KR1	■	■	■
2300	3.5	2.46	3.18	2.26	13.4	11.3	2030	290	EX420E	■	PR1	■	■	■
4000	3.5	4.26	2.67	3.33	13.4	19.6	3700	290	EX420E	■	JR1	■	■	■
3200	4.8	4.57	3.74	3.68	18.8	21	2930	426	EX430E	■	JR1	■	■	■
4000	4.8	5.79	3.26	4.07	18.8	26.6	3790	426	EX430E	■	FR1	■	■	■
2500	7	5.51	5.49	4.47	26.7	24.8	2310	980	EX620E	■	OR1	■	■	■
3000	10.4	9.28	7.24	6.75	40	42.2	2860	1470	EX630E	■	IR1	■	■	■
2200	14	9.28	11.16	7.49	50	41.8	2050	3200	EX820E	■	RR1	■	■	■
3600	14	14.85	7.53	8.3	50	66.9	3430	3200	EX820E	■	LR1	■	■	■
2200	24.5	16	14.18	9.54	92	72.7	2120	6200	EX840E	■	JR1	■	■	■
2500	35	27.9	9	7.82	137	133	2500	9200	EX860E	■	DR1	■	■	■
400 VAC power supply														
4000	1.75	1.24	1.54	1.12	6.6	5.64	3600	79	EX310E	■	PR1	■	■	■
2000	3.5	1.24	3.22	1.15	13.4	5.68	1740	290	EX420E	■	VR1	■	■	■
4000	3.5	2.46	2.68	1.93	13.4	11.3	3720	290	EX420E	■	PR1	■	■	■
3000	4.8	2.46	3.9	2.03	18.8	11.3	2740	426	EX430E	■	PR1	■	■	■
4000	4.8	3.3	3.26	2.31	18.8	15.1	3740	426	EX430E	■	LR1	■	■	■
4300	7	5.51	3.13	2.75	26.7	24.8	4240	980	EX620E	■	OR1	■	■	■
2900	10.4	5.11	7.42	3.8	40	23.2	2750	1470	EX630E	■	YR1	■	■	■
4000	10.4	6.92	5.2	3.76	40	31.4	3820	1470	EX630E	■	NR1	■	■	■
2200	14	5.4	11.16	4.36	50	24.3	2080	3200	EX820E	■	WR1	■	■	■
3600	14	9.3	7.53	5.19	50	41.8	3600	3200	EX820E	■	RR1	■	■	■
2100	24.5	8.55	15	5.37	92	38.8	1950	6200	EX840E	■	QR1	■	■	■
3300	24.5	14.3	2.85	2.07	92	64.7	3300	6200	EX840E	■	KR1	■	■	■
2500	35	15.7	9	4.4	137	75	2500	9200	EX860E	■	JR1	■	■	■

Drive Associations

Electro cylinder	Motor		Max. Speed[1] N_{max} [min^{-1}]	Associated Drive Sizes			
				Compax3		SLVD-N	
				Drive	Max. Speed[1] with Compax3 N_{max} [min^{-1}]	Drive	Max. Speed[1] with SLVD-N N_{max} [min^{-1}]
230 VAC power supply							
ETH032/ETH050	EX310E■PR1	■■■	2300	C3S025V2...	1960	SLVD1N	1960
	EX310E■KR1	■■■	4000	C3S025V2...	3630	SLVD2N	3630
ETH050/ETH080	EX420E■PR1	■■■	2300	C3S025V2...	2030	SLVD2N	2030
	EX420E■JR1	■■■	4000	C3S063V2...	3700	SLVD5N	3700
	EX430E■JR1	■■■	3200	C3S063V2...	2930	SLVD5N	2930
	EX430E■FR1	■■■	4000	C3S063V2...	3790	SLVD7N	3790
ETH080/ETH100	EX620E■OR1	■■■	2500	C3S063V2...	2310	SLVD7N	2310
	EX630E■IR1	■■■	3000	C3S100V2...	2860	SLVD10N	2860
-	EX820E■RR1	■■■	2200	C3S100V2...	2050	SLVD10N	2050
-	EX820E■LR1	■■■	3600	C3S150V2...	3430	SLVD15N	3430
-	EX840E■JR1	■■■	2200	-	2120	SLVD17N	2120
-	EX860E■DR1	■■■	2500	-	2500	-	-
400 VAC power supply							
ETH032/ETH050	EX310E■PR1	■■■	4000	C3S015V4...	3600	-	-
ETH050/ETH080	EX420E■VR1	■■■	2000	C3S015V4...	1740	-	-
	EX420E■PR1	■■■	4000	C3S038V4...	3720	-	-
	EX430E■PR1	■■■	3000	C3S038V4...	2740	-	-
	EX430E■LR1	■■■	4000	C3S038V4...	3740	-	-
ETH050/ETH080	EX620E■OR1	■■■	4300	C3S075V4...	4240	-	-
	EX630E■YR1	■■■	2900	C3S075V4...	2750	-	-
	EX630E■NR1	■■■	4000	C3S075V4...	3820	-	-
-	EX820E■WR1	■■■	2200	C3S075V4...	2080	-	-
-	EX820E■RR1	■■■	3600	C3S150V4...	3600	-	-
-	EX840E■QR1	■■■	2100	C3S150V4...	1950	-	-
-	EX840E■KR1	■■■	3300	C3S150V4...	3300	-	-
-	EX860E■JR1	■■■	2500	C3S300V4...	2500	-	-

[1] Absolute speed limit
Please refer to the document "ETH ATEX Conditions for use" see page 14

Note:
Please note in parallel motor mounting to ETH032, ETH050 and ETH080 the maximum radial load on the motor shaft (see relevant information in the operating instructions of the EX motor).

ETH - Electro Thrust Cylinder for ATEX Environment

Parker Hannifin has extended its range of well known ETH - High Force Electro Thrust Cylinder for the use in explosive atmospheres (ATEX). The new ETH ATEX includes all the same advantages as the existing range, offering precise motion, positioning, setting and actuation, but now even in explosive atmospheres.
The ETH ATEX range is ATEX certified for device group II, category 2 in explosive gas atmospheres. In conjunction with the ATEX certified EX series servomotors, Parker Hannifin offers a complete solution for ATEX applications.

Target Markets / Applications

A ATEX environment can contains a mixture of air and flammable substances such as gas, vapor or fluids which are potentially explosive under atmospheric conditions. ATEX certified devices are essential in these conditions.

Typical applications:

- Oil & Gas Industry
- Chemical and pharmaceutical industries
- Food processing (distillery)
- Printing & Plastic Industry
- Energy (Generation of Bio gas, gas turbines)
- Automotive industry (Paint finish)
- Waste processing plants

How to proceed when selecting an ATEX Cylinder

- Select an ETH - Electro Thrust Cylinder by means of ETH catalogue [192-550017].
- Check, whether the selected ETH - Electro Thrust Cylinder corresponds to all ATEX demands in your application using the document "ETH ATEX frame conditions for applications" [192-550006].
- In case the specifications cannot be met, please choose a larger electro cylinder and recheck the application data (e.g. different cycle times).
- An application-specific release is feasible by measuring the self-heating of the cylinder with your application data within our company (see "ETH ATEX frame conditions for applications" [192-550006]).

"ETH ATEX Conditions for use"

german	(190-550006)	pdf
english	(192-550006)	pdf

"ETH catalogue"

german	(190-550017)	pdf
english	(192-550017)	pdf
french	(193-550017)	pdf
italian	(197-550017)	pdf

www.parker.com/eme/eth

"ETH ATEX Operating instructions"

german	(190-550003)	pdf
english	(192-550003)	pdf

"EX Serie catalogue"

german	(190-063001)	pdf
english	(192-063001)	pdf
french	(193-063001)	pdf
italian	(197-063001)	pdf

www.parker.com/eme/ex

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374

Aerospace

Key Markets

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
CO_2 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
Electrohydrostatic 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
Metal & plastic retained composite seals
Shielded optical windows
Silicone tubing & extrusions
Thermal management
Vibration dampening

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