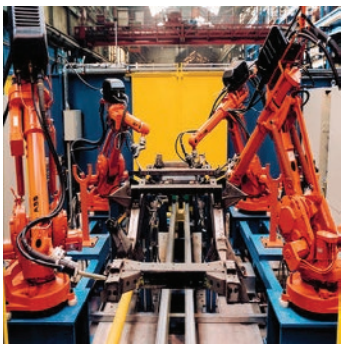
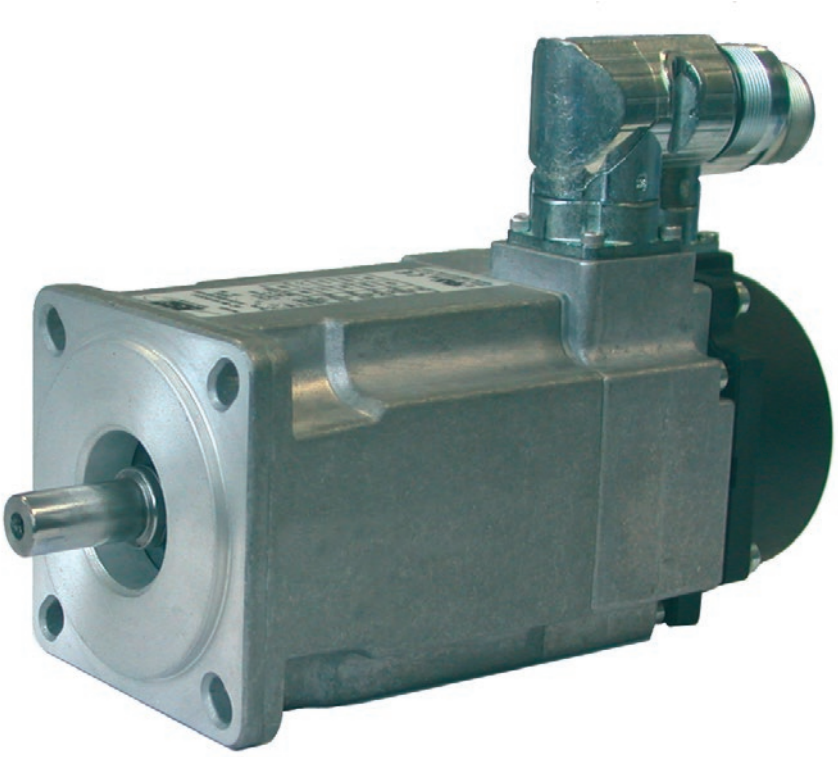
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding





NX Series

Low Cogging Servo Motor

Parker

ENGINEERING YOUR SUCCESS.

WARNING — USER RESPONSIBILITY

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Low Cogging Servo Motor - NX Series

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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.

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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

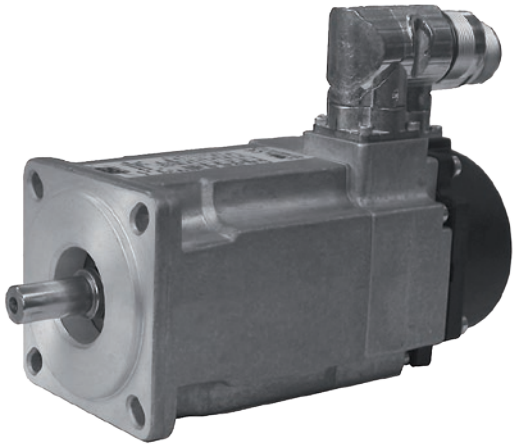
Dijon, France

Low Cogging Servo Motor - NX Series

Overview

Description

NX Series brushless servomotors from Parker combine exceptional precision and motion quality, high dynamic performance and very compact dimensions.
A large set of torque / speed characteristics, options and customization possibilities are available, making NX Series servomotors the ideal solution for most servosystems applications.



Advantages

- High precision and motion quality
- High dynamic performance
- Compact robust
- Large set of options and customization possibilities
- CE and UL marking certification available

Applications

- Life Science Diagnostic
- Tooling Machines
- Pulp & Paper
- Renewable Energy
- Aerospace
- Radiation Hardend
- Marine
- Continuous Process
- Mobile Hybrid Solutions

Features

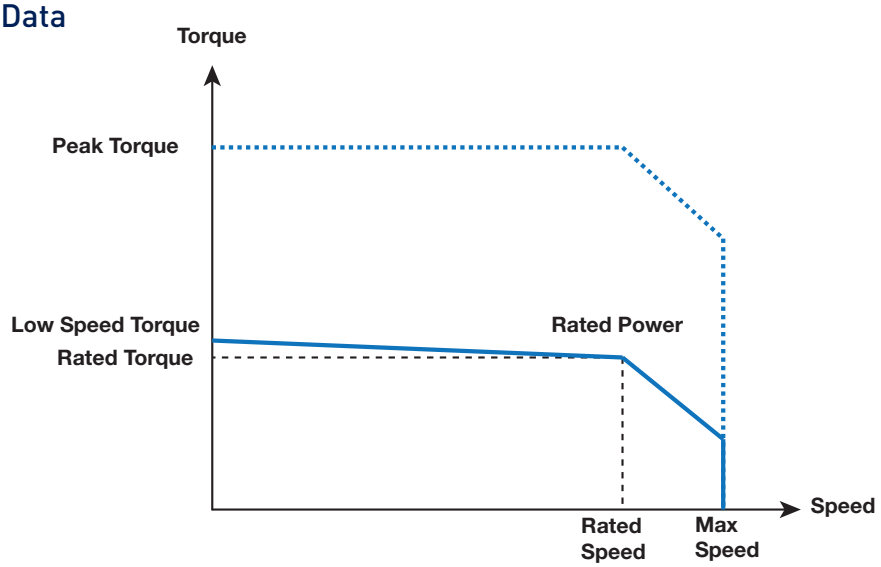
- Mounting
  - Flange with clearance holes
- Shaft end
  - Plain smooth shaft (standard)
  - Plain keyed shaft (option)
- Cooling
  - Natural ventilation
  - Forced ventilation (NX860V only)
- Feedback sensors
  - Resolver (standard)
  - Absolute EnDat or Hiperface encoder
  - Incremental encoder
- Other options
  - Brake
  - Thermal protection (PTC, Thermo Switch or KTY)

Technical Characteristics - Overview

Motor type	Permanent magnet synchronous servomotors	
Rotor design	Rotor with concentrated-flux rare earth magnets	
Number of poles	10	
Power range	0.2...13.7 kW	
Torque range	0.45...64 Nm	
Speed range	0...7500 min^{-1}	
Protection level (IEC60034-5)	• IP64 (standard) • IP65 (option) • IP44 (ventilated version)	
Marking	CE	UL
Voltage supply	230/400 VAC	230/480 VAC
Temperature class (IEC60034-1)	• Class F	• Class A (NX1-2) • Class F (NX3-8)
Connections	• Connectors (standard) • Flying cables (option) • Terminal box (option)	• Connectors (NX1-8) • Terminal box (NX860V)

NX1-NX2 CE Motors

Technical Data



Model	Size	Stall (1)		Nominal (1)			Peak (1) Torque	Inertia		Ke (2) (3)	Kt (2) (3)
		Torque	Current	Torque	Speed	Current		No brake	With brake		
		T_0 [Nm]	I_0 [A]	T_n [Nm]	n [min^{-1}]	I_n [A]	T_{max} [Nm]	J [$kgmm^2$]	J [$kgmm^2$]	Ke [Vs]	Kt [Nm/A_{rms}]
230 VAC power supply											
NX110EAP	42.5	0.45	1.0	0.33	6000	0.79	1.7	13	14	29.9	0.455
NX205EAV		0.45	1.0	0.37	5000	0.86	2.0	21	33	30.2	0.444
NX205EAS	56.5	0.45	1.4	0.29	7500	0.96	2.0	21	33	21.9	0.322
NX210EAT		1	1.3	0.80	4000	1.11	3.4	38	50	48.6	0.749
NX210EAP		1	2.0	0.61	6000	1.32	3.4	38	50	32.6	0.503
400 VAC power supply											
NX205EAV	56.5	0.45	1.0	0.29	7500	0.69	2.0	21	33	30.2	0.444
NX205EAS		0.45	1.4	0.229	8900	0.8	2.0	21	33	21.9	0.322
NX210EAT		1	1.3	0.613	6000	0.9	3.4	38	50	48.6	0.749
NX210EAP		1	2.0	0.499	7000	1.1	3.4	38	50	32.6	0.503

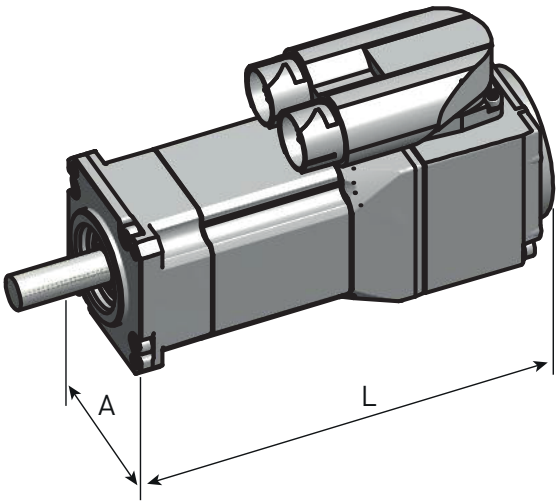
(1) Data referred to motor mounted on aluminium flange: 280 x 280 x 8 mm (NX1-2), Temperature <40 °C near motor's flange. Stall torques refer to motor turning at 100 min^{-1}
(2) Data measured at 20 °C. When "hot" consider -0.09 %/K derating
(3) Manufacturing tolerance data ±10 %

Motor	Associated Drive Sizes					
	PSD1S(2)	PSD1M	Compax3	SLVD-N	AC890	AC30
230 VAC power supply						
NX110EAP	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD1N...	-	-
NX205EAV	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD1N...	890SD-231300B...	-
NX205EAS	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD2N...	890SD-231300B...	-
NX210EAT	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD2N...	890SD-231300B...	-
NX210EAP	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD2N...	890SD-231300B...	-
400 VAC power supply						
NX205EAV	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004
NX205EAS	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004
NX210EAT	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004
NX210EAP	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004

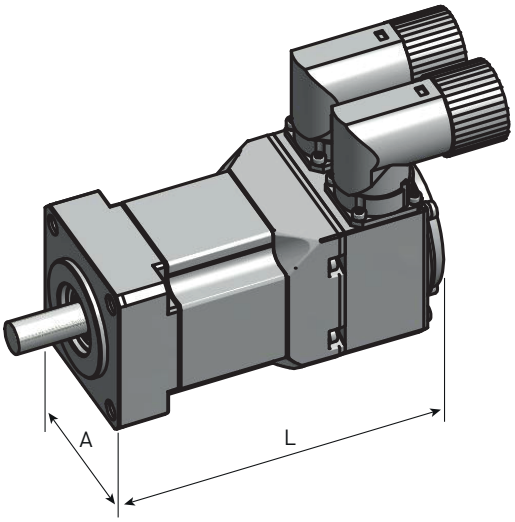
Dimensions

Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr*	Fa*
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]	[daN]	[daN]
NX110	42.5	30 / 50	9 x 25	110	0.8	141	141	15	6.9
NX205	56.5	40 / 63	11 x 25	100	0.8	137	137	28	15.5
NX210				120	1.3	157	157	30	16.7

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



NX1



NX2

Order Code

NX1, NX2, CE - Natural Cooling Version

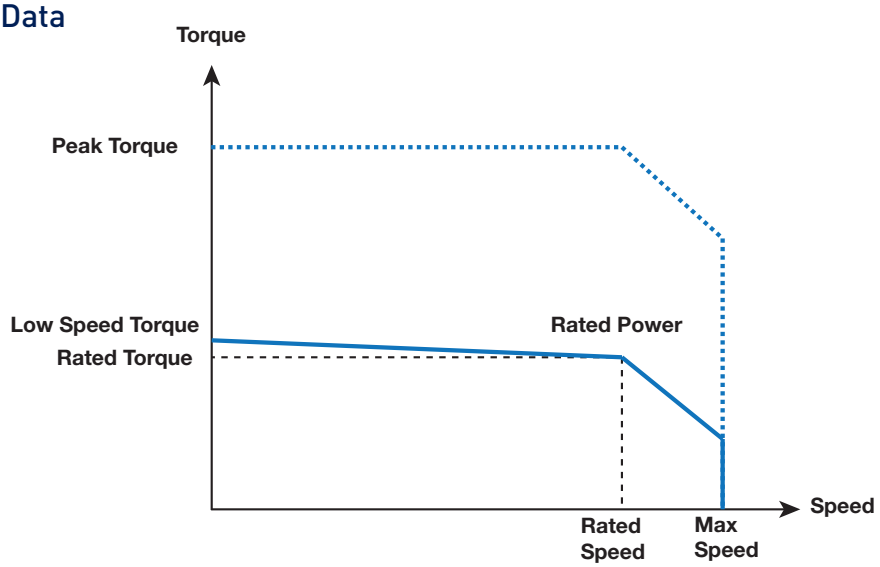
	1	2	3	4	5	6	7	8
Order example	**NX110E**	**A**	**P**	**R**	**7**	**0**	**1**	**0**

1	**Motor type**	
	NX110E **NX205E** **NX210E**	see table NX1-NX2 CE Motors "Technical data"
2	**Feedback sensor ***	
	A	2 pole resolver (standard)
	Y	Without sensor
	R	Absolute single-turn HIPERFACE encoder 128 ppr SKS36 (NX2 only)
	S	Absolute multi-turn HIPERFACE encoder 128 ppr SKM36 (NX2 only)
	X	Commuted lines 10 poles – 2048pulses (NX2 only)
3	**Motor type**	
	P **V** **S** **...**	see table NX1-NX2 CE Motors "Technical data"
4	**Painting**	
	R	Unpainted (standard)
	B	Black mat (on request)
5	**Connections**	
	1	Flying cables (option)
	4	Flying cables with shielded sleeve (option)
	7	Connectors (standard)
6	**Brake**	
	0	Without brake
	3	With brake
7	**Protection degree**	
	0	IP64 (standard)
	1	IP65
8	**Shaft end**	
	0	Smooth shaft (standard)
	1	Keyed shaft

* other types of feedback sensor are available on request

NX1-NX2 UL Motors

Technical Data



Model	Size	Stall (1)		Nominal (1)			Peak (1) Torque	Inertia		Ke (2) (3)	Kt (2) (3)
		Torque	Current	Torque	Speed	Current		No brake	With brake		
		T_0 [Nm]	I_0 [A]	T_n [Nm]	n [min^{-1}]	I_n [A]	T_{max} [Nm]	J [$kgmm^2$]	J [$kgmm^2$]	Ke [Vs]	Kt [Nm/A_{rms}]
230 VAC supply voltage - mono or three-phased											
NX110AAJ	42.5	0.31	1.0	0.09	5000	0.34	0.9	13	14	22.4	0.318
NX210AAT	56.5	0.7	1.0	0.41	4000	0.61	1.9	38	50	48.6	0.701
480 VAC supply voltage - three-phased											
NX210AAT	56.5	0.7	1.0	0.154	6000	0.3	1.9	38	50	48.6	0.701

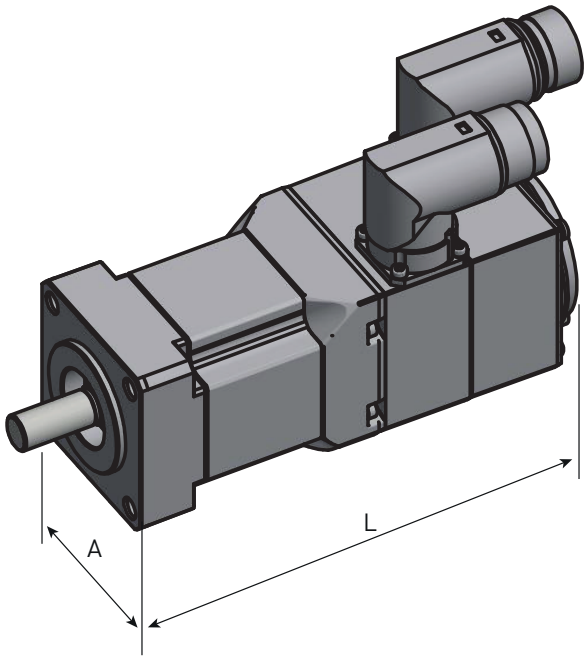
(1) Data referred to motor mounted on aluminium flange: 280 x 280 x 8 mm (NX1-2), Temperature <40 °C near motor's flange. Stall torques refer to motor turning at 100 min^{-1}
(2) Data measured at 20 °C. When "hot" consider -0.09 %/K derating
(3) Manufacturing tolerance data ±10 %

Motor	Associated Drive Sizes					
	PSD1S(2)	PSD1M	Compax3	SLVD-N	AC890	AC30
230 VAC supply voltage - mono or three-phased						
NX110AAJ	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD1N...	-	-
NX210AAT	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD1N...	890SD-231300B...	-
480 VAC supply voltage - three-phased						
NX210AAT	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004

Dimensions

Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr* [daN]	Fa* [daN]
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]		
NX110	42.5	30 / 50	9 x 25	134	0.8	141	1	15	6.9
NX210	56.5	40 / 63	11 x 25	149	1.3	157	1.6	30	16.7

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



Order Code

NX1, NX2, UL - Natural Cooling Version

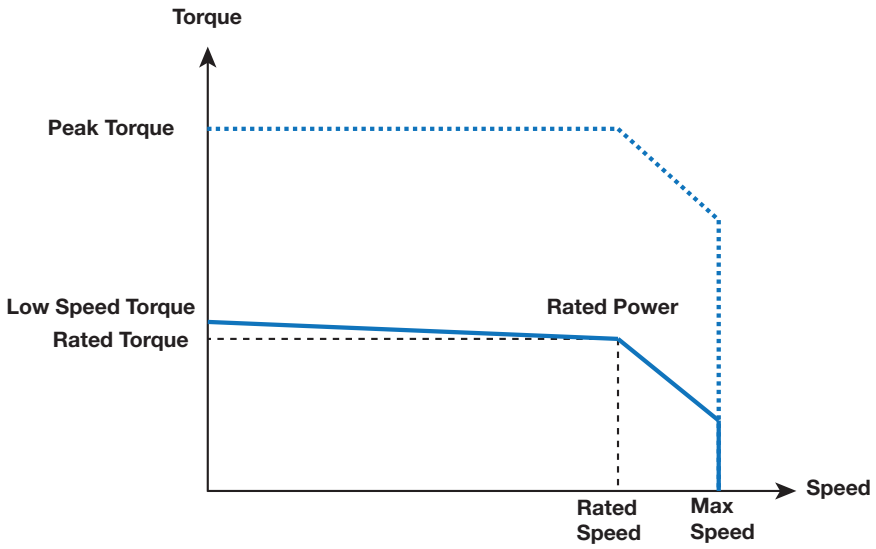
	1	2	3	4	5	6	7	8
Order example	**NX110A**	**A**	**J**	**R**	**7**	**0**	**0**	**0**

1	**Motor type**	
	NX110A **NX205A** **NX210A**	see table NX1-NX2 UL Motors "Technical data"
2	**Feedback sensor ***	
	A	2 pole resolver (standard)
	Y	Without sensor
	R	Absolute single-turn HIPERFACE encoder 128 ppt SKS36 (NX2 only)
	S	Absolute multi-turn HIPERFACE encoder 128 ppt SKM36 (NX2 only)
	X	Commuted lines 10 poles – 2048pulses (NX2 only)
3	**Motor type**	
	J **V** **T**	see table NX1-NX2 UL Motors "Technical data"
4	**Painting**	
	R	Unpainted (standard)
	B	Black mat (on request)
5	**Connector**	
	7	Standard
6	**Brake**	
	0	Without brake
	3	With brake
7	**Protection degree**	
	0	IP64 (standard)
	1	IP65
8	**Shaft end**	
	0	Smooth shaft (standard)
	1	Keyed shaft

* other types of feedback sensor are available on request

NX3-NX8 CE and UL Motors

Technical Data



Model	Size	Stall (1)		Nominal (1)			Peak (1) Torque	Inertia		Ke (2) (3)	Kt (2) (3)
		Torque	Current	Torque	Speed	Current		No brake	With brake		
		T_0 [Nm]	I_0 [A]	T_n [Nm]	n [min^{-1}]	I_n [A]	T_{max} [Nm]	J [$kgmm^2$]	J [$kgmm^2$]	Ke [Vs]	Kt [Nm/A_{rms}]
230VAC power supply - single or three-phased											
NX310EAP	71	2	1.4	1.80	2300	1.27	6.6	80	87	88.9	1.440
NX310EAK	71	2	2.4	1.65	4000	2.06	6.6	80	87	50.9	0.823
NX420EAP	91.5	4	2.7	3.53	2300	2.41	13.4	290	308	89.9	1.480
NX420EAJ	91.5	4	4.7	3.14	4000	3.74	13.4	290	308	51.9	0.853
NX430EAL	91.5	5.5	3.8	5.04	2300	3.49	18.7	430	448	90.9	1.450
NX430EAF	91.5	5.5	6.6	4.29	4000	5.28	18.7	430	448	51.8	0.828
NX620EAV	121	8	2.8	7.85	1100	2.79	26.6	980	1 034	180.0	2.830
NX620EAR	121	8	5.3	7.42	2200	4.99	26.6	980	1 034	95.7	1.510
NX630EAR	121	12	5.3	10.70	1450	4.75	39.9	1 470	1 524	138.0	2.290
NX630EAN	121	12	7.9	9.81	2300	6.63	39.9	1 470	1 524	91.6	1.510
NX820EAR	155	16	11.0	14.50	2200	10.00	49.9	3 200	3 756	91.0	1.460
NX840EAK	155	28	16.8	23.50	2000	14.30	91.8	6 200	6 756	104.0	1.670
NX860EAJ	155	41	18.5	35.60	1450	16.20	136.0	9 200	9 756	140.0	2.210
230 VAC power supply - three-phased - fan cooled											
NX860VAF	155	64	42.7	56.40	2000	37.50	136.0	9 200	9 756	96.1	1.500
230 VAC power supply - three-phased - water cooled											
NX860WAF	155	90	62.6	88.30	2000	61.50	137.0	9 200	9 756	96.1	1.440

* Mounting on aluminium flange: 400 x 400 x 12 mm (NX3-8) Temperature <40 °C near motor's flange

Model	Size	Stall [1]		Nominal [1]			Peak [1] Torque	Inertia		Ke [2] [3]	Kt [2] [3]
		Torque	Current	Torque	Speed	Current		No brake	With brake		
		T_0 [Nm]	I_0 [A]	T_n [Nm]	n [min^{-1}]	I_n [A]	T_{max} [Nm]	J [$kgmm^2$]	J [$kgmm^2$]	Ke [Vs]	Kt [Nm/A_{rms}]
400 VAC power supply - single or three-phased											
NX310EAP	71	2	1.4	1.65	4000	1.2	6.6	80	87	88.9	1.440
NX310EAK	71	2	2.4	1.36	7000	1.8	6.6	80	87	50.9	0.823
NX420EAP	91.5	4	2.7	3.14	4000	2.2	13.4	290	308	89.9	1.480
NX420EAJ	91.5	4	4.7	2.62	6000	3.2	13.4	290	308	51.9	0.853
NX430EAL	91.5	5.5	3.8	4.29	4000	3.0	18.7	430	448	90.9	1.450
NX430EAF	91.5	5.5	6.6	2.98	6000	3.8	18.7	430	448	51.8	0.828
NX620EAV	121	8	2.8	7.52	2000	2.7	26.6	980	1 034	180.0	2.830
NX620EAR	121	8	5.3	6.17	3900	4.3	26.6	980	1 034	95.7	1.510
NX630EAR	121	12	5.3	9.34	2700	4.2	39.9	1 470	1 524	138.0	2.290
NX630EAN	121	12	7.9	7.6	4000	5.3	39.9	1 470	1 524	91.6	1.510
NX820EAR	155	16	11.0	12.9	3900	9.1	49.9	3 200	3 756	91.0	1.460
NX840EAK	155	28	16.8	18.6	3500	11.5	91.8	6 200	6 756	104.0	1.670
NX860EAJ	155	41	18.5	27.5	2600	12.7	136.0	9 200	9 756	140.0	2.210
400 VAC power supply - three-phased - fan cooled											
NX860VAF	155	64	42.7	43.4	3750	28.9	136.0	9 200	9 756	96.1	1.500
400 VAC power supply - three-phased - water cooled											
NX860WAF	155	90	62.6	85.1	3750	59.3	137	9 200	9 756	96.1	1.440

[1] Data referred to motor mounted on aluminium flange: 400 x 400 x 12 mm (NX3-8) Temperature <40 °C near motor's flange. Stall torques refer to motor turning at 100 min^{-1}
[2] Data measured at 20 °C. When "hot" consider -0.09 %/K derating
[3] Manufacturing tolerance data ±10 %

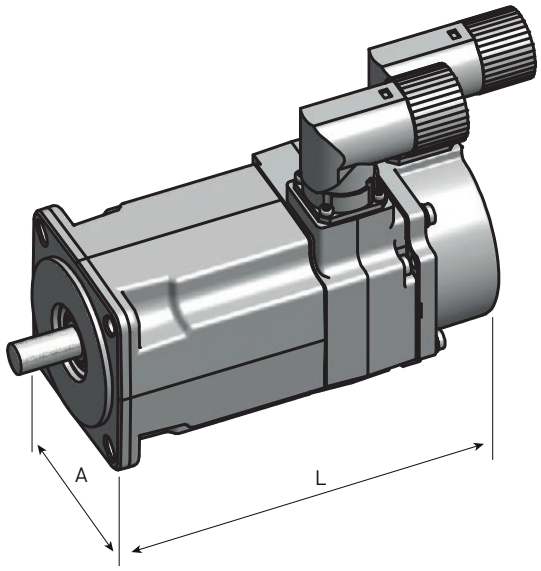
Motor	Associated Drive Sizes					
	PSD1S[2]	PSD1M	Compax3	SLVD-N	AC890	AC30
230VAC power supply - single or three-phased						
NX310EAP	PSD1SW1200...	PSD1MW3222...	C3S025V2...	SLVD2N...	890SD-231300B...	-
NX310EAK	PSD1SW1300...	PSD1MW3433...	C3S025V2...	SLVD5N...	890SD-231550B...	-
NX420EAP	PSD1SW1300...	PSD1MW3433...	C3S063V2...	SLVD5N...	890SD-231700B...	-
NX420EAJ	PSD1SW1300...	PSD1MW3433...	C3S063V2...	SLVD5N...	890SD-231700B...	-
NX430EAL	PSD1SW1300...	PSD1MW3433...	C3S063V2...	SLVD5N...	890SD-231700B...	-
NX430EAF	-	PSD1MW2440...	C3S100V2...	SLVD7N...	890SD-232165B...	-
NX620EAV	PSD1SW1300...	PSD1MW3433...	C3S063V2...	SLVD5N...	890SD-231550B...	-
NX620EAR	-	PSD1MW2440...	C3S063V2...	SLVD7N...	890SD-231700B...	-
NX630EAR	-	PSD1MW2440...	C3S063V2...	SLVD7N...	890SD-232165B...	-
NX630EAN	-	PSD1MW2440...	C3S100V2...	SLVD10N...	890SD-232165B...	-
NX820EAR	-	PSD1MW2630...	C3S150V2...	SLVD15N...	890SD-232240C...	-
NX840EAK	-	-	-	-	890SD-232240C...	-
NX860EAJ	-	-	-	-	890SD-232240C...	-
230 VAC power supply - three-phased - fan cooled						
NX860VAF	-	-	-	-	-	-
230 VAC power supply - three-phased - water cooled						
NX860WAF	-	-	-	-	-	-

Motor	Associated Drive Sizes					
	PSD1S[2]	PSD1M	Compax3	SLVD-N	AC890	AC30
400 VAC power supply - single or three-phased						
NX310EAP	-	PSD1MW1300...	C3S015V4...	-	890SD-531200B...	31V-4D-0004
NX310EAK	-	PSD1MW1300...	C3S038V4...	-	890SD-531350B...	31V-4D-0004
NX420EAP	-	PSD1MW1300...	C3S038V4...	-	890SD-531450B...	31V-4D-0004
NX420EAJ	-	PSD1MW1300...	C3S075V4...	-	890SD-532100B...	31V-4D-0008
NX430EAL	-	PSD1MW1300...	C3S038V4...	-	890SD-532100B...	31V-4D-0005
NX430EAF	-	PSD1MW1400...	C3S075V4...	-	890SD-532120B...	31V-4D-0008
NX620EAV	-	PSD1MW1300...	C3S038V4...	-	890SD-531450B...	31V-4D-0004
NX620EAR	-	PSD1MW1400...	C3S075V4...	-	890SD-532100B...	31V-4D-0008
NX630EAR	-	PSD1MW1400...	C3S075V4...	-	890SD-532100B...	31V-4D-0008
NX630EAN	-	PSD1MW1600...	C3S150V4...	-	890SD-532120B...	31V-4D-0010
NX820EAR	-	PSD1MW1600...	C3S150V4...	-	890SD-532160B...	31V-4D-0012
NX840EAK	-	PSD1MW1800...	C3S300V4...	-	890SD-53216SB...	31V-4E-0023
NX860EAJ	-	PSD1MW1800...	C3S300V4...	-	890SD-532240C...	31V-4E-0023
400 VAC power supply - three-phased - fan cooled						
NX860VAJ	-	-	-	-	-	-
400 VAC power supply - three-phased - water cooled						
NX860WAF	-	-	C3H090V4...	-	890SD-432730E...	31V-4G0073...

Dimensions

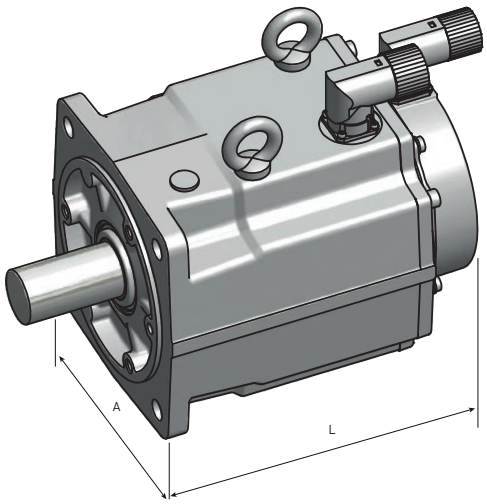
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr* [daN]	Fa* [daN]
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]		
NX310	71	60 / 75-80	11 x 23	147	2	195	2.4	36	20
NX420	91.5	80 / 100	19 x 40	175	3.7	226	4.5	72	24
NX430	91.5	80 / 100	19 x 40	200	4.6	251	5.4	82	24
NX620	121	110 / 130	24 x 50	181	6.9	236	8	82	52
NX630	121	110 / 130	24 x 50	210	8.8	265	10	86	54

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



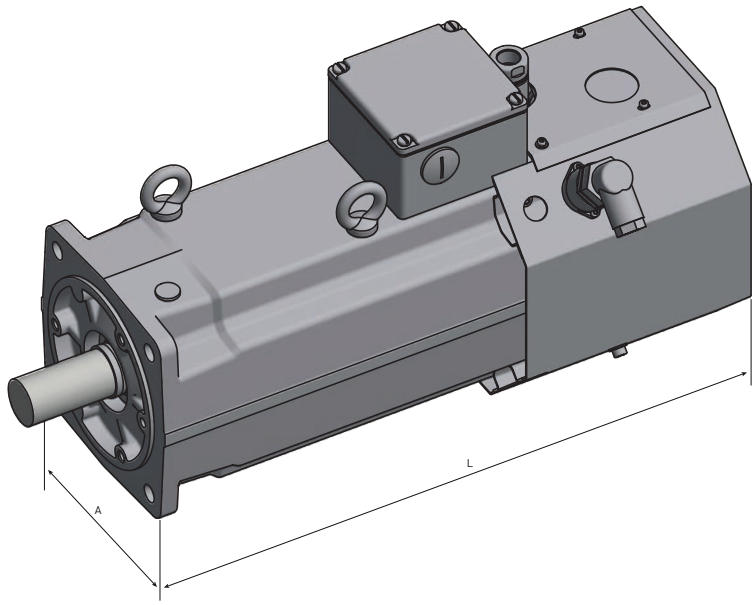
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr* [daN]	Fa* [daN]
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]		
NX820	155	130 / 165	32 x 58	200	13	266	16.5	151	28
NX840	155	130 / 165	32 x 58	260	20	326	23.5	165	33
NX860	155	130 / 165	32 x 58	320	27	386	30.5	172	37

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



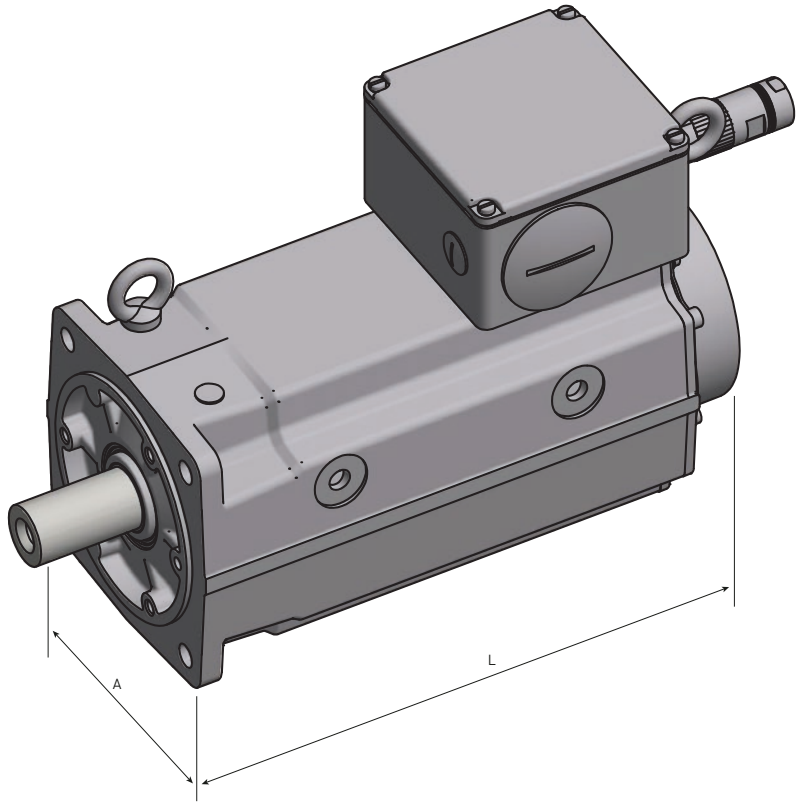
Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr* [daN]	Fa* [daN]
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]		
NX860V	185	130 / 165	32 x 58	424	30.5	490	34	172	37

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



Motor	A	Mounting Flange centering / interaxis hole	Shaft diameter x length	Without Brake		With Brake		Fr* [daN]	Fa* [daN]
	[mm]	[mm]	[mm]	L [mm]	Weight [kg]	L [mm]	Weight [kg]		
NX860W	155	130 / 165	32 x 58	360	28	426	31	172	37

* Fr and Fa not cumulative: At 1500 min^{-1} for a bearing service life of 20 000 hours



Order Code

NX3-NX8, CE, UL - Natural Cooling Version

	1	2	3	4	5	6	7	8
Order example	**NX310E**	**A**	**P**	**R**	**7**	**0**	**0**	**0**

1	**Motor type**	
	NX310E	see table NX3-NX8 CE and UL Motors "Technical data"
	NX420E	
	NX430E	
	...	

2	**Feedback sensor ***	
	A	2 pole resolver (standard)
	K	Without sensor
	P	DSL HIPERFACE SIL2 single turn 128 ppr EKS36
	Q	DSL HIPERFACE SIL2 multi turn 128 ppr EKM36
	R	Absolute single-turn HIPERFACE encoder 128 ppr SKS36
	S	Absolute multi-turn HIPERFACE encoder 128 ppr SKM36
	X	Commuted lines 10 poles – 2048pulses

3	**Motor type**	
	P	see table "Technical data"
	K	
	X	
	...	

4	**Painting**	
	R	Unpainted (standard)
	B	Black mat (on request)

5	**Connections/Ventilation**	
	1	Shielded cables/No
	7	Connectors (standard)/No
	5	UL power terminal box + feedback connector (NX860V only)
	9	CE power terminal box + feedback connector (NX860V only)

* other types of feedback sensor are available on request

6	**Brake/Thermal Protection**	
	0	Without brake (standard)/ No protection
	1	Without brake/PTC on power connection
	2	Without brake/Thermo switch on power connection (on request)
	3	With brake/No protection
	4	With brake/PTC on power connection
	5	With brake/Thermo switch on power connection (on request)
	A	Without brake/PTC on sensor connection (not available for UL version)
	B	Without brake/Thermo switch on sensor connection (on request) (not available for UL version)
	C	Without brake/KTY on sensor connector (not available for UL version)
	D	With brake/PTC on sensor connection (not available for UL version)
	E	With brake/Thermo switch on sensor connection (on request) (not available for UL version)
	F	With brake/KTY on sensor connection (not available for UL version)

7	**Protection degree**	
	0	IP44 for NX860V
		IP64 NX3 - NX8 (standard)
	1	IP65 (option for NX3 - NX8)

8	**Shaft end**	
	0	Smooth shaft (standard)
	1	Keyed shaft

Accessories and Options

Parker NX motors are available with standard and custom options to adapt motor on your application.
If the option for your application is not listed, please consult our technical department.

Cables

Motor cable

Drive	Cable reference [1]		
	NX1	NX2 to NX8	
		Current ≤ 12 A	Current ≤ 24 A
With or without brake			
Compax3	CC3UP0F4R0xxx	CC3UP1F1R0xxx	CC3UP2F1R0xxx
SLVDN	CS5UP0F4R0xxx	CS5UP1F1R0xxx	CS5UP2F1R0xxx
AC890	CS4UP0F4R0xxx	CS4UP1F1R0xxx	CS4UP2F1R0xxx
With or without brake & thermal sensor			
Compax3	-	CC3UQ1F1R0xxx	CC3UQ2F1R0xxx
SLVDN	-	CS5UQ1F1R0xxx	CS5UQ2F1R0xxx
AC890	-	CS4UQ1F1R0xxx	CS4UQ2F1R0xxx
With or without brake & Hiperface DSL encoder			
PSD1	-	CP1UD1F1R0xxx	CP1UD2F1R0xxx

Feedback cable

Drive	Cable reference [1]		
	Resolver for NX1	Resolver for NX2 to NX8	Hiperface encode
Compax3	CC3UA1F4R0xxx	CC3UA1F1R0xxx	CC3UR1F1R0xxx
SLVDN	CS5UA1F4R0xxx	CS5UA1F1R0xxx	CS5UR1F1R0xxx
AC890	CS4UA1F4R0xxx	CS4UA1F1R0xxx	

(*) The 3 last digits indicate cable length in meters ±5 %max
For non-standard length cable with length different from: 1/2/3/4/5/10/15/20/25/30/40/50 m please contact us.
Example CC3UP1F1R0015: power cable, length = 15 m.

Holding Brake

All NX motors are available with option holding brake.

Motor	Voltage	Power	Torque @ 20°C	Added length (resolver)	Added weight	Added inertia
	[V]	[W]	[Nm]	[mm]	[kg]	[kgmm2]
NX1	24	6	0.4	31	0.2	0.01
NX2		8	1	37	0.3	0.12
NX3		11	2	48	0.4	0.068
NX4		12	5.5	51	0.9	0.18
NX6		18	12	55	1.1 (NX620)- 1.2 (NX630)	0.54
NX8		26	36	66	3.5	5.56

Feedback

Motors may be eqquiped with various feedback types in order to meet the different requirements for precision, signal that the application needs. The standard motor includes the resolver feedback. Hiperface Encoder, DSL Encoder, Incremental Encoder are available like the following tables.

Resolver 2 poles

Code	A		
Motor Association	NX1	NX2 & NX3	NX4, NX6 & NX8
Parker part number	220005P1000	220005P1001	220005P1002
Electrical specification	Values @ 8 kHz		
Polarity	2 poles		
Input voltage	7 Vrms		
Input current	70mA maximum	86mA maximum	
Zero voltage	20mV maximum		
Encoder accuracy	± 10' maxi		
Ratio	0,5 ± 5 %		
Output impedance (primary in short circuit whatever the position of the rotor)	Typical 120 + 200j Ω		
Dielectric rigidity (50 – 60 Hz)	500 V – 1 min		
Insulation resistance	≥ 10MΩ	≥ 100MΩ	
Rotor inertia	~6 g.cm	~30 g.cm²	
Operating temperature range	-55 to +155 °C		

Incremental Encoder

Code	X
Motor Association	NX1, NX2, NX3, NX4, NX6 & NX8
Model	F10 (Hengstler)
Type	Incremental encoder with 10 pole commutation signals
Parker part number	220167P0003
Line count	2048 pulses per revolution
Electrical interface	Line driver 26LS31
System accuracy	Incremental signals ± 2.5' commutation signals ± 6'
Perating speed	5 000 rpm
Power Supply	5VDC ± 10%
Current consumption (without load)	100mA
Max pulse frequency	300 kHz
Operating temperature range	0°C to +120 °C

Hiperface encoder DSL SIL2

Code	P	Q
Motor Association	NX2, NX3, NX4, NX6 & NX8	
Model	EKS36 SIL2(Sick)	EKM36 SIL2(Sick)
Type	Absolute single turn encoder	Absolute multi turn encoder
Parker part number	220174P0011	220174P0012
Electrical interface	Hiperface DSL	
Position values per revolution	4 096	-
Revolutions	-	4 096
Integral non-linearity	± 80”(Error limits for evaluating sine/cosine period)	
Differential non-linearity	± 40” (Non-linearity within a sine/cosine period)	
Operating speed	12 000 rpm	9 000 rpm
Power Supply	7VDC to 12VDC	
Current consumption	150 mA max.	
Output frequency	0kHz – 75kHz	
Operating temperature range	-20°C to +115 °C	

Hiperface encoder

Code	R	S
Motor Association	NX2, NX3, NX4, NX6 & NX8	
Model	SKS36 (Sick)	SKM36 (Sick)
Type	Absolute single turn encoder	Absolute multi turn encoder
Parker part number	220174P0003	220174P0004
Line count	128 sine/cosine periods per revolution	
Electrical interface	Hiperface	
Position values per revolution	4 096	
Revolutions	-	4 096
Error limits for the digital absolute value	± 320”(via RS485)	
Integral non-linearity	± 80”(Error limits for evaluating sine/cosine period)	
Differential non-linearity	± 40” (Non-linearity within a sine/cosine period)	
Operating speed	12 000 rpm	9 000 rpm
Power Supply	7VDC to 12VDC	
Current consumption (without load)	60mA	
Output frequency	0kHz – 65kHz	
Operating temperature range	-20°C to +110 °C	

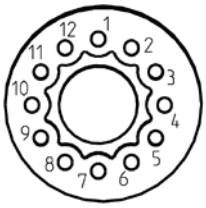
NX1

Power connector

Pin	Description	
A	Phase U	
B	Phase V	
C	Phase W	
	Ground	
1	Brake +	if the option is required
2	Brake -	

Part number
220132R6610

Resolver connector

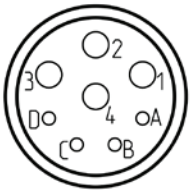


Pin	Description
1	S3 / Cos +
2	S1 / Cos -
7	S2 / Sin -
8	S4 / Sin +
10	R1 / excitation +
12	R2 / excitation -

Part number
220132R6620

NX2 to NX8

Power connector



Pin	Description	
1	Phase U	
2	Ground	
3	Phase W	
4	Phase V	
A	Brake +	if the option is required
B	Brake -	
C	PTC or Thermoswitch or KTY Anode	
D	PTC or Thermoswitch or KTY Cathode	

Power connector for feedback letter P/Q only

Pin	Description		
1	Phase U		
2	Ground		
3	Phase W		
4	Phase V		
A	-	Brake +	if the option is required
B	-	Brake -	
C	DSL +	PTC or Thermoswitch or KTY Anode	
D	DSL -	PTC or Thermoswitch or KTY Cathode	

Part number
220065R1610

Resolver connector feedback letter A

Pin	Description
1	S3 / Cos +
2	S1 / Cos -
3	PTC or Thermoswitch or KTY Anode
6	PTC or Thermoswitch or KTY Cathode
7	S2 / Sin -
8	S4 / Sin +
10	R1 / excitation +
12	R2 / excitation -

Part number
220065R4621

Hiperface DSL® Connector feedback letter R/S/T/U

Pin	Description	
1	Sin +	
2	Ref Sin	
3	Cos +	
4	Ref Cos	
5	PTC or Thermoswitch or KTY Anode	if the option is required
6	PTC or Thermoswitch or KTY Cathode	
9	Data +	
10	Data -	
11	Us	
12	Ground	

Part number
220065R4621

Incremental encoder connector feedback letter X

Pin	Description
1	Vcc
2	PTC or Thermoswitch or KTY Anode
3	Ground
4	U
5	V \
6	V
7	PTC or Thermoswitch or KTY Cathode
8	W
9	W \
10	A
11	A \
12	B
13	B \
14	Z
15	Z \
17	U \

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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