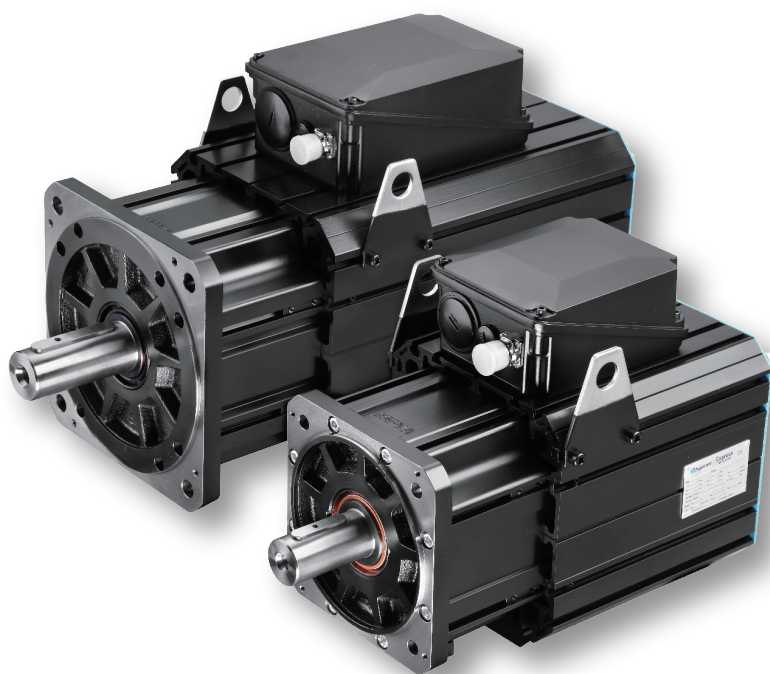


Express Series Servo Motor

Express系列交流永磁同步伺服电机





Company Profile

企业简介

宁波菲仕技术股份有限公司（简称：菲仕技术）成立于 2001 年，由民营控股、先进制造产业投资基金和宁波和丰创业投资有限公司等战略投资人参股，公司致力于以电驱动技术为核心的创新及产业化，为运动控制和能量转换领域提供系统产品和综合解决方案，经过多年的品牌沉淀，菲仕已成为一家集研发、生产、销售为一体，拥有国内外多家控股子公司的集团化创新型高科技企业。

Ningbo Physis Technology Co., Ltd. was founded in 2001, which is a private enterprise holding group company, invested by Advanced Manufacturing Fund and Ningbo Hefeng Venture Capital Co., Ltd. Physis always devotes to innovation and industrialization of electrical drive technology, provides servo products and solutions for the field of motion control & energy conversion. After years of brand development and accumulation, Physis became a collectivized & innovative high-tech enterprise, which collects together research and development (R&D), production and sale, has a numbers of domestic and overseas subsidiaries.

R&D Team

研发团队

在智能制造全球化的趋势中，菲仕逐步落地国际化的战略布局，在欧洲成立了研发中心，与国内外专业科研机构、专家合作，进行定期交流和互动，以保持公司持续站立在伺服系统科技创新的最前沿，共同推进产业发展。经过多年的沉淀，顶尖人才的积累，菲仕在国内拥有省级工程技术中心、省级高新技术企业研究开发中心，并入选了国家工信部第一批专精特新“小巨人”企业！

3 个
研发中心

4 个
生产基地

300 +
研发团队

350 +
授权专利

In the globalization tendency of intelligent manufacture, Physis implements the strategic layout of the group internationalization gradually, builds the R&D center in Europe, communicate and interact regularly with the world-class scientific research institution & industry experts, which makes Physis hold on the lead of the servo system technology innovation and promote industrial development together! After years of development, accumulation of talents, Physis has provincial engineering & technology center and more than 200 people of R&D team. Until now, Physis has more than 300 patents.

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Products Introduction

产品介绍

菲仕研发的新一代高性能伺服电机，该系列电机拥有更高的功率密度，更好的伺服响应速度和过载输出特性，强制风冷，除一般的液压伺服领域外，特别适合需要高速响应和短时过载要求高的应用场合，如高速节能注塑机、压铸机等。

额定功率范围：7.9kW~200kW

额定扭矩范围：50Nm~1344Nm

峰值扭矩范围：150Nm~3000Nm

适配主流油泵：16cc~160cc

Express Series Servo Motor

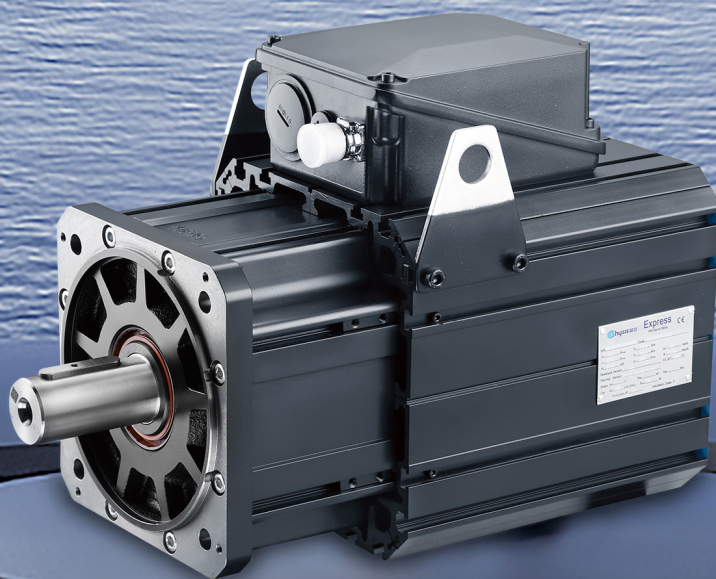
Express series servo motor is a new generation of high performance servo motor that has higher power density, higher response speed and good overload output characteristic, fan cooling. Specially suitable for some applications which need high requirements of high speed response and short-time overload, such as high speed energy-saving injection molding machine, die-casting machine, etc.

Rated power range : 7.9kW~200kW

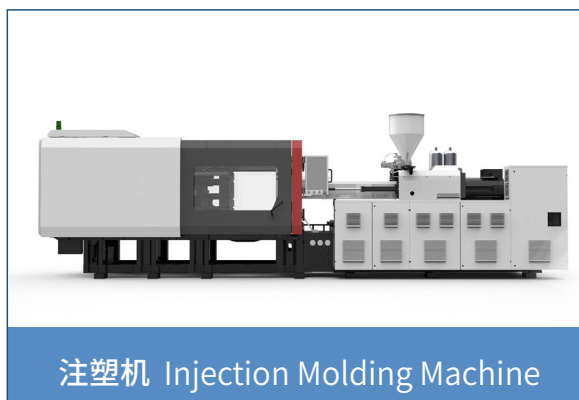
Rated torque range : 50Nm~1344Nm

Peak torque range : 150Nm~3000Nm

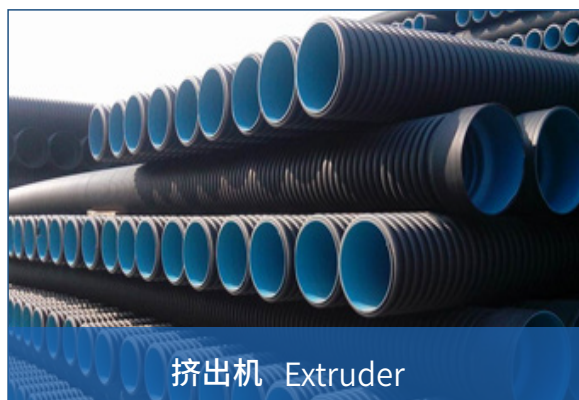
Pump option : 16cc~160cc



Application 应用领域



注塑机 Injection Molding Machine



挤出机 Extruder



钢铁冶金 Iron and steel



压铸机 Die Casting Machine



液压机 Hydraulic Press



折弯机 Bending Machine

E01007F203R40Y0Kb1-T F

电机类型 Series Identify	框号 Size	冷却方式 Cooling	额定转速 Rated Speed	额定电压 Rated Voltage	编码器 Sensor Identify	制动器 Brake	接线方式 Connection	转轴 Shaft	底板 Mounting Feet	接线盒位置 Position of Terminal Box	出线孔方向 Direction of Cable Hole
1004, 1005, 1007, 1008, 1010, 1012 1013, 1215, 1220, 1225, 1230, 1235, 1806, 1808, 1809, 1811, 1813, 1805		F = 强制风冷 Fan cooling	数字 *100 = 1500 rpm, 2000 rpm	3 = 380 Vac R4 = 旋转变压器, 1 对极, BRX Resolver, 1X - BRX		0 = 无制动器 Without brake					F = 出线孔朝前 Cable hole in front B = 出线孔朝后 Cable hole in the back
											轴伸方向看 Look from the direction of shaft T = 接线盒在上 Terminal box on top L = 接线盒在左 Terminal box on the left R = 接线盒在右 Terminal box on the right
											00 = 无底板 Without feet b1 = 标准底板 Standard feet
											K = 带键槽, 标准键 Shaft with key
											Y0 = 电源接线端子, 信号航空插座 Signal circular connector

代码示例：

E01007F203R40Y0Kb1-TF

E0 系列, 框号 1007, 强制风冷, 额定转速 2000rpm, 电压等级 380Vac, 旋转变压器, 1 对极, BRX, 无制动器, 电源接线端子, 信号航空插座, 伸出轴带键, 标准底板, 轴伸方向看, 接线盒朝上, 出线孔朝前。

Code Example:

E01007F203R40Y0Kb1-TF

E0 series motor, size 1007, servo fan cooling, 2000rpm, 380Vac, resolver, 1X - BRX, without brake, signal circular connector, shaft with key, standard feet, look from the direction of motor shaft, terminal box on top, cable hole in front.

Express 系列伺服电机规格 (E010__F)

电机型号 Motor Code		E01004F			E01005F			E01007F			E01008F			E01010F			E01012F			E01013F		
额定转速 Rated Speed	wn [rpm]	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000
额定频率 Rated Freq	Fn [Hz]	100	113	133	100	113	133	100	113	133	100	113	133	100	113	133	100	113	133	100	113	133
最大速度 Max Speed	wmax [rpm]	3500																				
最大频率 Max Freq	Fmax [Hz]	233																				
堵转电流 Stall Current	Io [A]	15	18	20	24	28	31	31	35	42	42	45	52	48	57	62	56	62	77	61	68	77
额定电流 Rated Current	In [A]	15	17	19	23	26	29	29	32	38	39	41	47	45	52	56	52	57	69	57	62	69
堵转扭矩 Stall Torque	To [Nm]	53			78			106			132			158			183			208		
额定扭矩 Rated Torque	Tn [Nm]	50	50	50	75	74	73	100	99	97	124	123	121	148	146	143	171	168	165	193	190	187
额定功率 Rated Power	Pn [kW]	7.9	9.0	10	12	13	15	16	18	20	20	22	25	23	26	30	27	30	34	30	34	39
扭矩常数 Torque Constant	Kt [Nm/A]	3.43	2.91	2.57	3.38	2.86	2.60	3.46	3.12	2.60	3.25	3.03	2.60	3.38	2.86	2.60	3.33	3.03	2.42	3.46	3.12	2.77
反电动势 Back EMF	EMF [V/ krpm]	208	176	156	204	173	157	210	189	157	197	183	157	204	173	157	202	183	147	210	189	168
绕组线电阻 Winding Resistance	Rw [ohm]	1.67	1.13	0.892	0.825	0.546	0.465	0.543	0.451	0.322	0.37	0.31	0.233	0.319	0.216	0.179	0.244	0.200	0.133	0.222	0.176	0.145
直轴线电感 Direct Inductance	Ld [mH]	18.2	13.1	10.2	11.5	8.2	6.8	9.1	7.4	5.1	6.4	5.6	4.1	5.8	4.1	3.4	4.8	4.0	2.5	4.5	3.7	2.9
交轴线电感 Quadrature Inductance	Lq [mH]	42.7	30.9	24.0	27.1	19.4	16.0	21.4	17.3	12.0	15.0	13.1	9.6	13.5	9.7	8.0	11.3	9.3	6.0	10.7	8.6	6.8
最大电流 Max Current	Imax [A]	50	59	66	80	91	100	100	112	135	135	144	170	155	182	200	183	200	250	200	222	250
最大扭矩 Max Torque	Tmax [Nm]	145			222			297			371			445			520			594		
转动惯量 Rotor Inertia	Jm [kgcm ²]	56			80			103			126			150			173			196		
电机重量 Weight	M [kg]	40			47			54			61			68			75			82		

驱动器电压 Vdrive: 380Vac

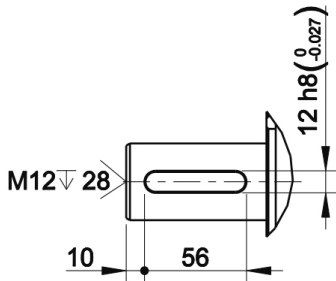
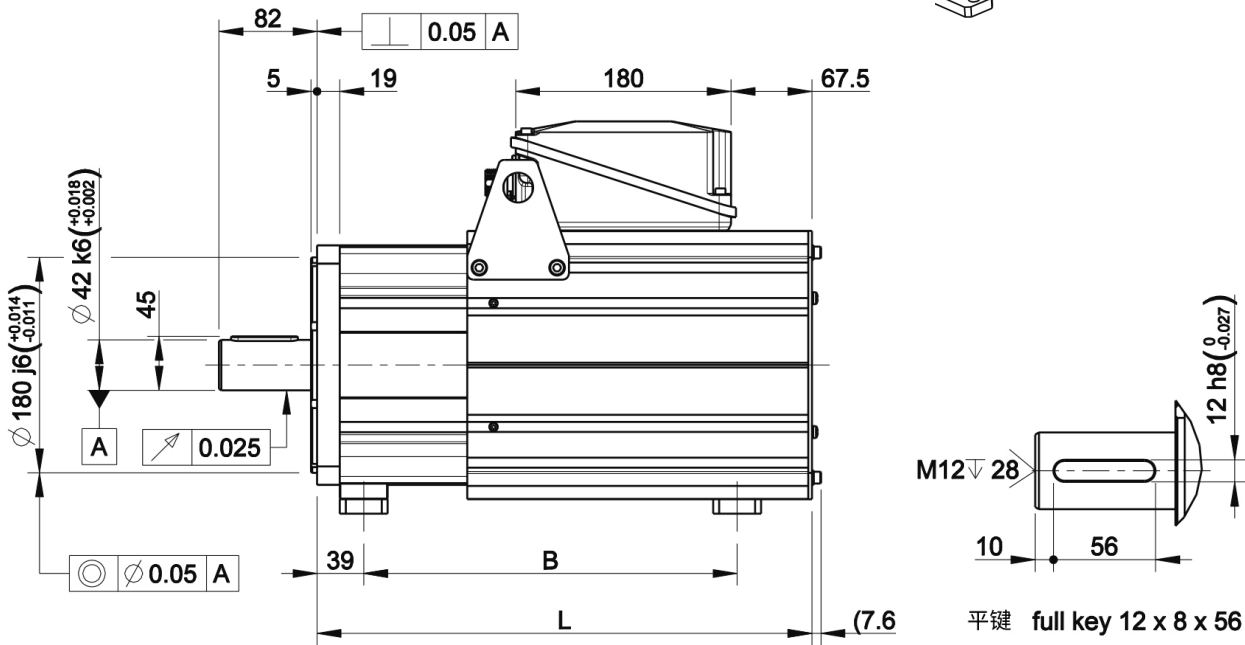
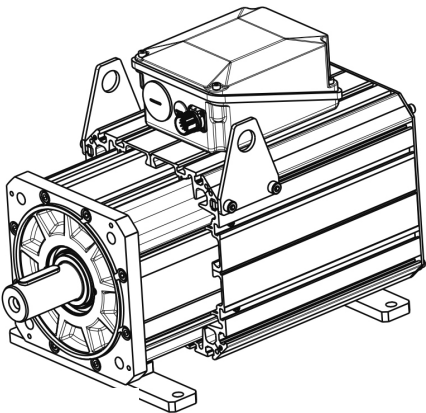
直流母线电压 Vdcbus : 537Vdc

载波频率 PWM frequency: ≥ 4kHz

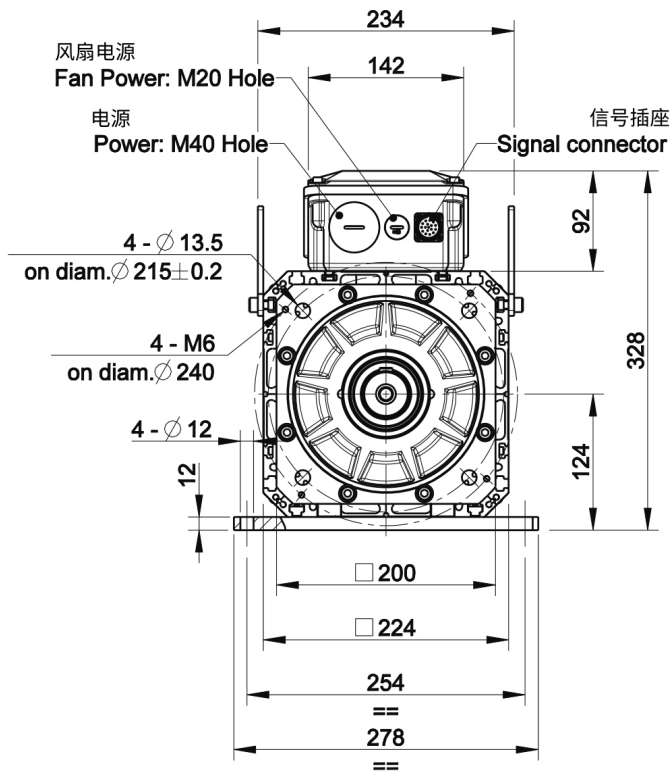
温升 DT : 100K

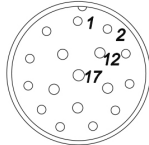
环境温度 Tamb : 30°C

	B	L
E01004F	267	342
E01005F	285	378
E01007F	312	414
E01008F	354	450
E01010F	396	486
E01012F	400	527
E01013F	471	558



平键 full key 12 x 8 x 56



 信号插座 Signal Connector M23 Size 1-17 Pin		
针脚号 PIN	线色 WIRE COLOR	定义 FUNCTION
1	n.c.	n.c.
2	n.c.	n.c.
3	n.c.	n.c.
4	YELLOW 黄	SIN-
5	RED 红	COS+
6	BLACK 黑	COS-
7	RED / WHITE 红 / 白	RESX+
8	BROWN 棕	KTY+
9	WHITE 白	KTY-
10	YELLOW / WHITE 黄 / 白	RESX-
11	n.c.	n.c.
12	n.c.	n.c.
13	n.c.	n.c.
14	BLUE 蓝	SIN+
15	n.c.	n.c.
16	BLUE 蓝	PTC+
17	BLUE 蓝	PTC-
旋转变压器 Resolver : 1X-BRX		

Performance Curve

电机性能曲线 (E010__F)

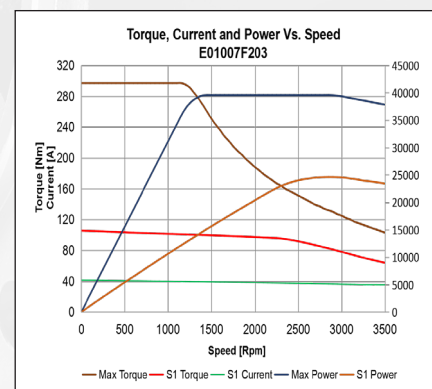
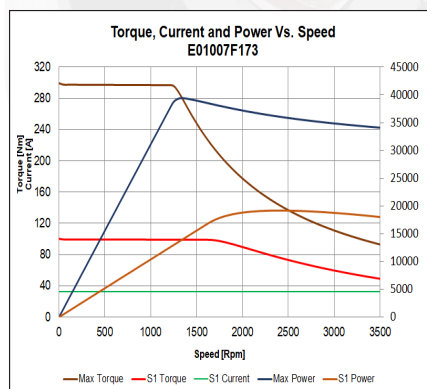
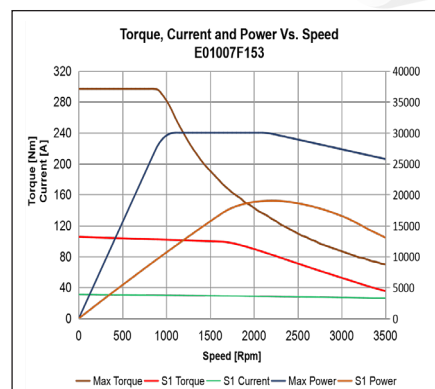
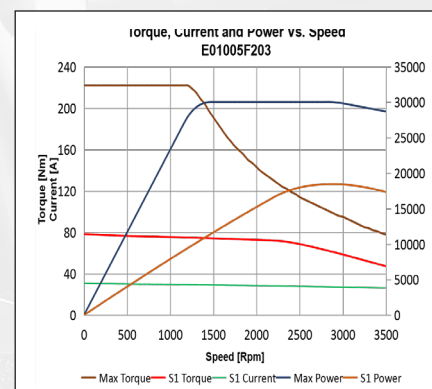
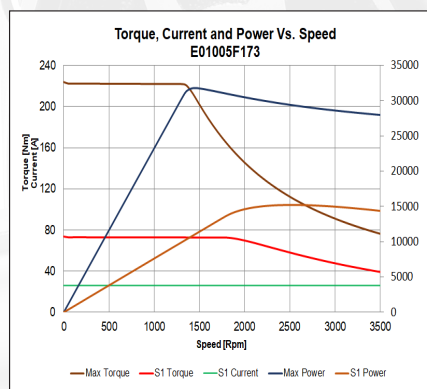
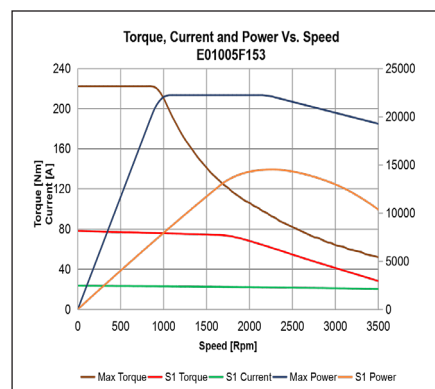
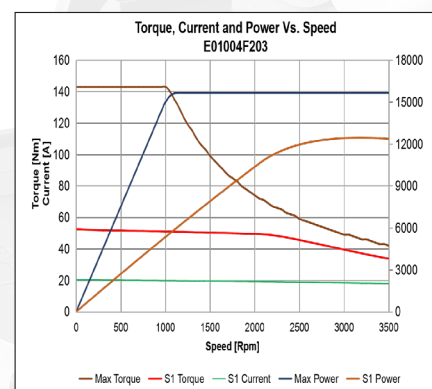
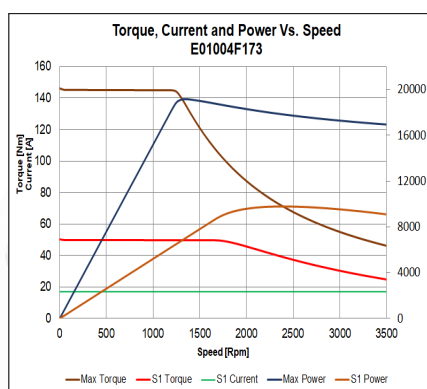
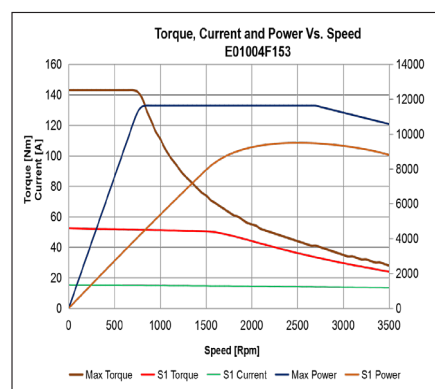
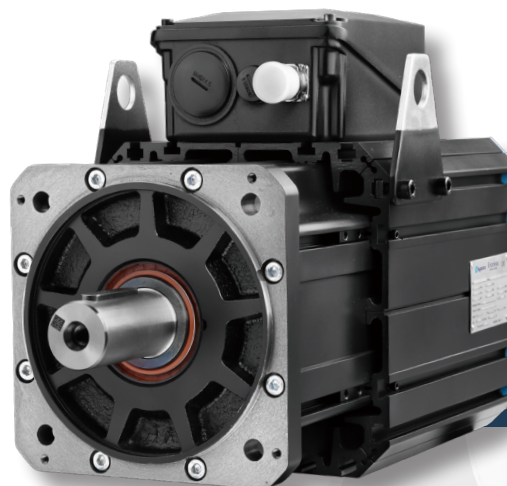
驱动器电压 Vdrive : 380Vac

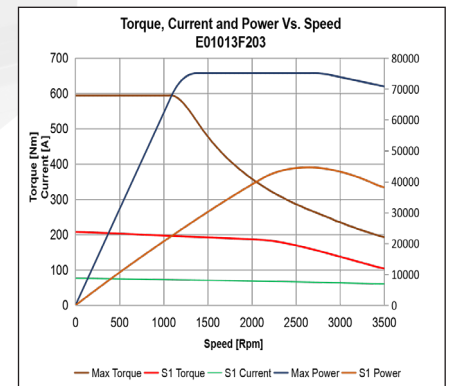
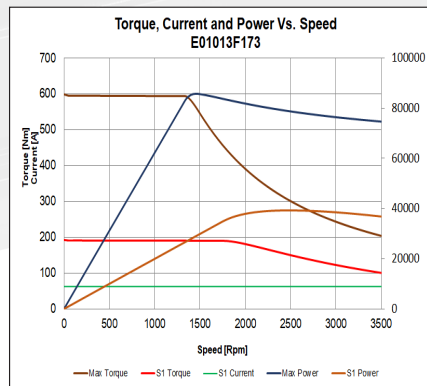
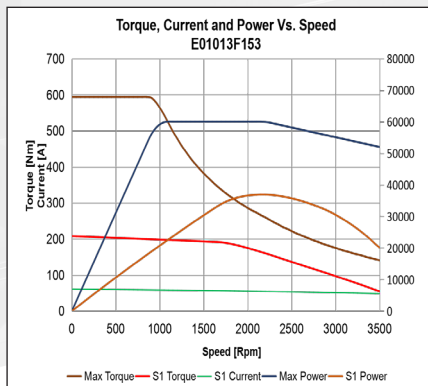
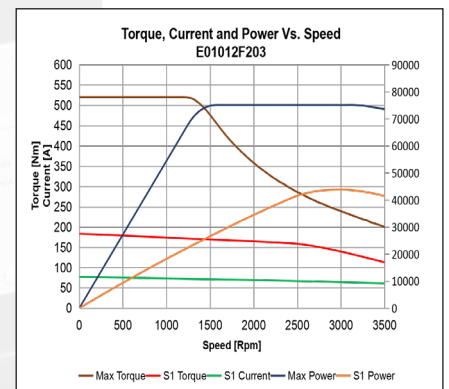
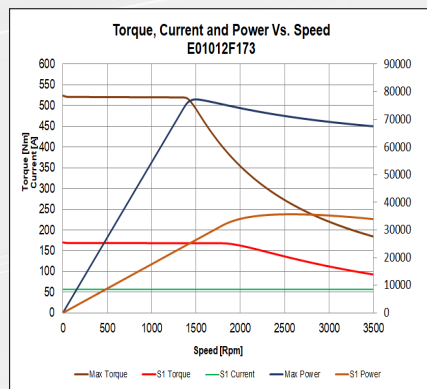
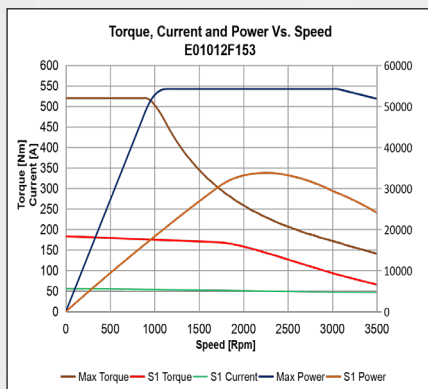
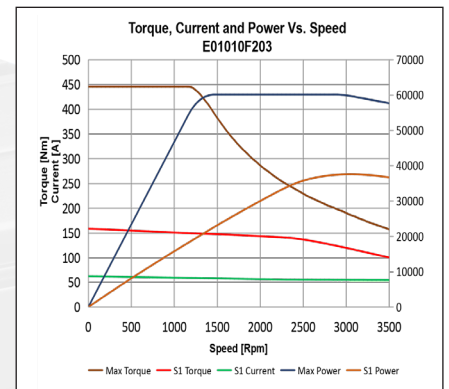
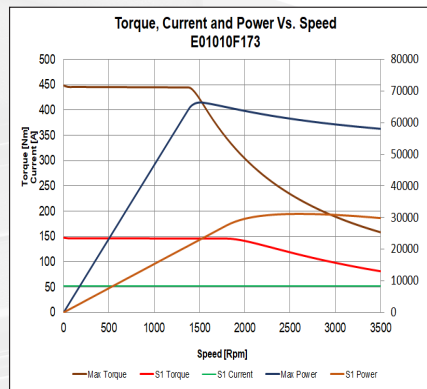
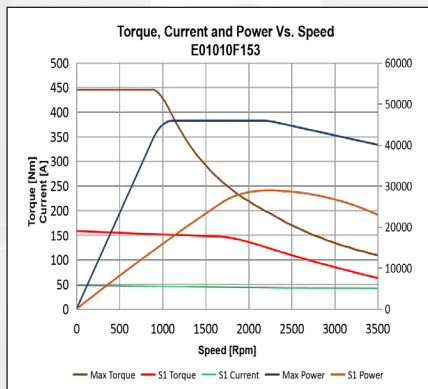
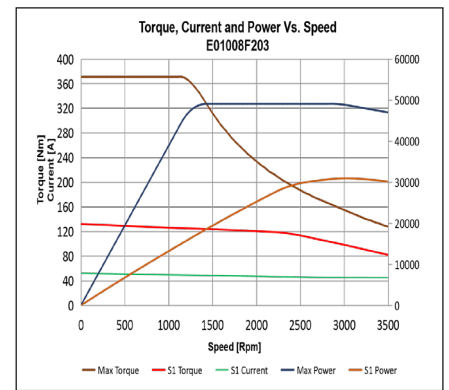
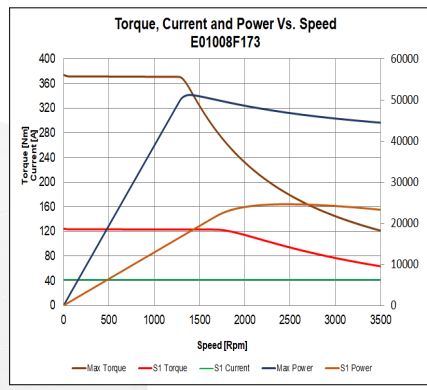
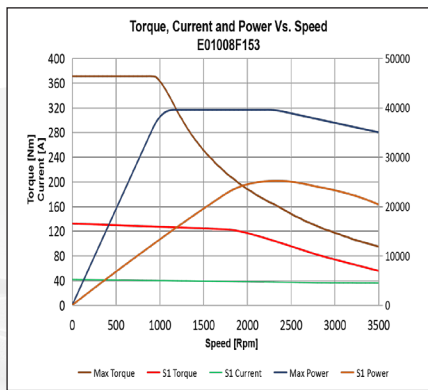
直流母线电压 Vdcbus: 537Vdc

载波频率 PWM frequency: $\geq 4\text{kHz}$

温升 DT: 100K

环境温度 Tamb: 30°C





Express 系列伺服电机规格 (E012__F)

电机型号 Motor Code		E01215F			E01220F			E01225F			E01230F			E01235F		
额定转速 Rated Speed	wn [rpm]	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000	1500	1700	2000
额定频率 Rated Freq	Fn [Hz]	100	113	133	100	113	133	100	113	133	100	113	133	100	113	133
最大速度 Max Speed	wmax [rpm]	3500														
最大频率 Max Freq	Fmax [Hz]	233														
堵转电流 Stall Current	Io [A]	70	77	85	85	96	109	95	109	127	108	126	151	125	150	187
额定电流 Rated Current	In [A]	64	70	75	78	86	95	86	96	109	100	114	134	115	135	164
堵转扭矩 Stall Torque	To [Nm]	224			279			332			378			428		
额定扭矩 Rated Torque	Tn [Nm]	206	203	197	255	250	243	300	294	285	351	344	336	395	387	377
额定功率 Rated Power	Pn [kW]	32	36	41	40	45	51	47	52	60	55	61	70	62	69	79
扭矩常数 Torque Constant	Kt [Nm/A]	3.27	2.98	2.67	3.34	2.98	2.60	3.57	3.13	2.67	3.64	3.13	2.60	3.57	2.98	2.38
反电动势 Back EMF	EMF [V/ krpm]	198	180	162	203	180	158	216	189	162	221	189	158	216	180	144
绕组线电阻 Winding Resistance	Rw [ohm]	0.157	0.123	0.106	0.123	0.096	0.074	0.110	0.085	0.062	0.095	0.068	0.049	0.078	0.054	0.034
直轴线电感 Direct Inductance	Ld [mH]	4.1	3.4	2.7	3.4	2.7	2.1	3.2	2.5	1.8	2.9	2.1	1.5	2.4	1.7	1.1
交轴线电感 Quadrature Inductance	Lq [mH]	9.6	7.9	6.4	8.0	6.3	4.9	7.6	5.8	4.3	6.8	5.0	3.5	5.7	1.0	2.5
最大电流 Max Current	I _{max} [A]	155	171	190	190	214	245	210	240	280	240	280	335	280	336	420
最大扭矩 Max Torque	T _{max} [Nm]	467			585			700			800			920		
转动惯量 Rotor Inertia	Jm [kgcm ²]	253			310			370			427			485		
电机重量 Weight	M [kg]	102			116			130			144			158		

驱动器电压 Vdrive: 380Vac

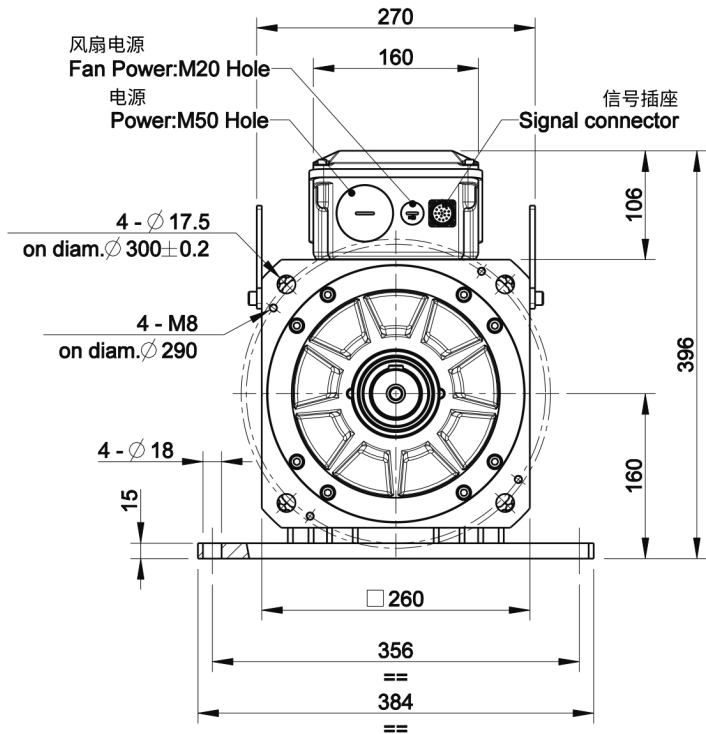
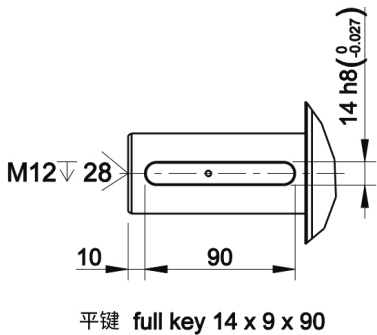
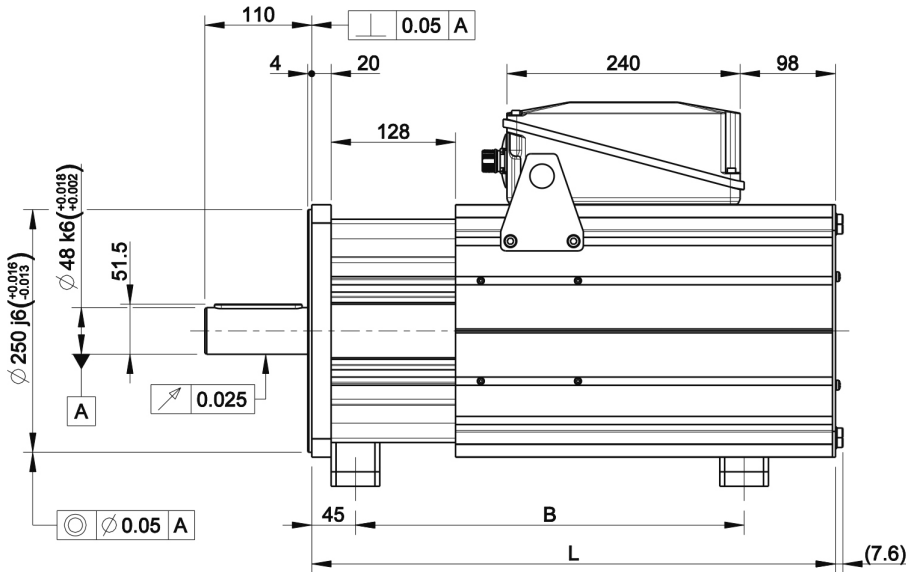
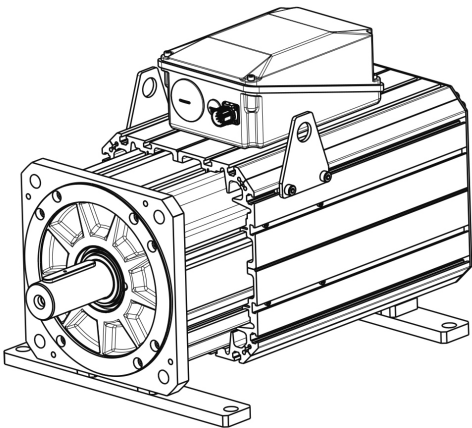
直流母线电压 Vdcbus: 537Vdc

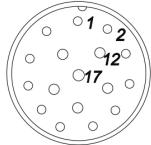
载波频率 PWM frequency: ≥ 4kHz

温升 DT: 100K

环境温度 Tamb : 30°C

	B	L
E01215F	400	539
E01220F	450	589
E01225F	500	639
E01230F	550	689
E01235F	600	739



 信号插座 Signal Connector M23 Size 1-17 Pin		
针脚号 PIN	线色 WIRE COLOR	定义 FUNCTION
1	n.c.	n.c.
2	n.c.	n.c.
3	n.c.	n.c.
4	YELLOW 黄	SIN-
5	RED 红	COS+
6	BLACK 黑	COS-
7	RED / WHITE 红 / 白	RESX+
8	BROWN 棕	KTY+
9	WHITE 白	KTY-
10	YELLOW / WHITE 黄 / 白	RESX-
11	n.c.	n.c.
12	n.c.	n.c.
13	n.c.	n.c.
14	BLUE 蓝	SIN+
15	n.c.	n.c.
16	BLUE 蓝	PTC+
17	BLUE 蓝	PTC-
旋转变压器 Resolver : 1X-BRX		

Performance Curve

电机性能曲线 (E012__F)

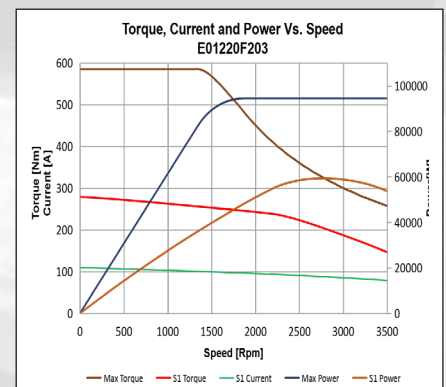
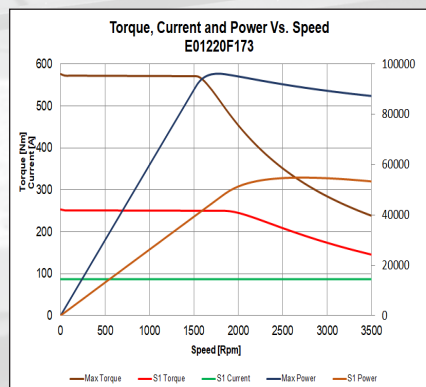
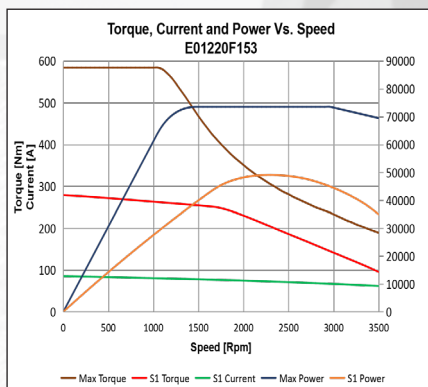
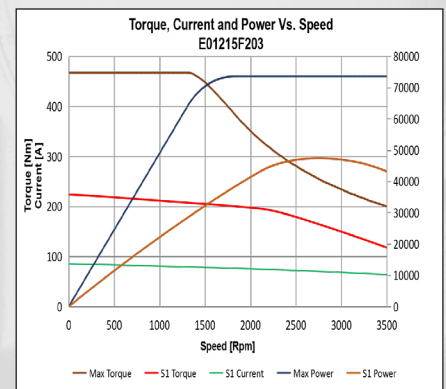
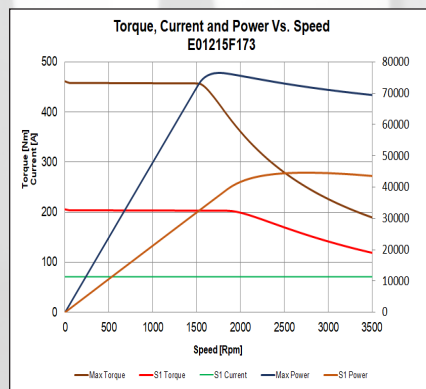
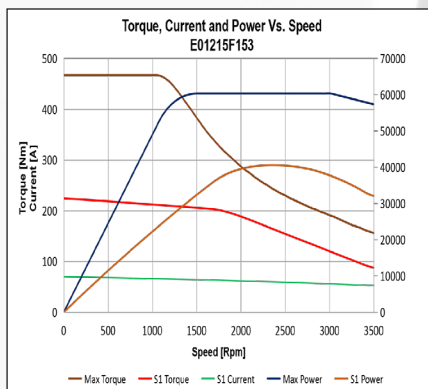
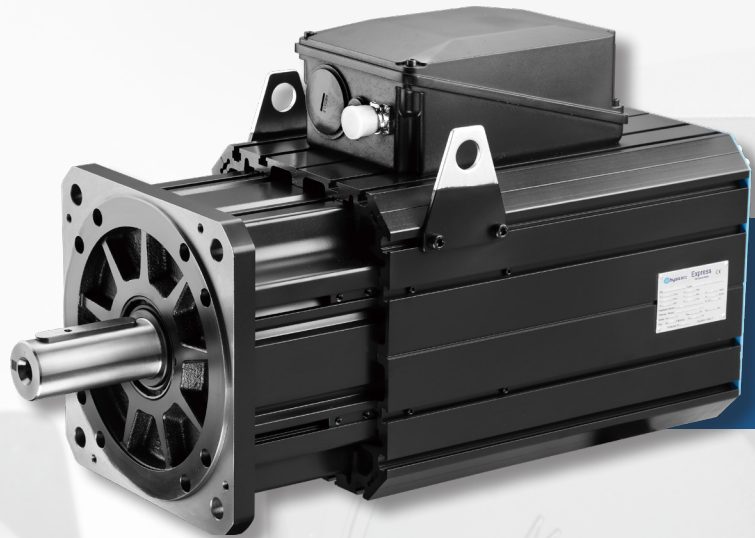
驱动器电压 Vdrive: 380Vac

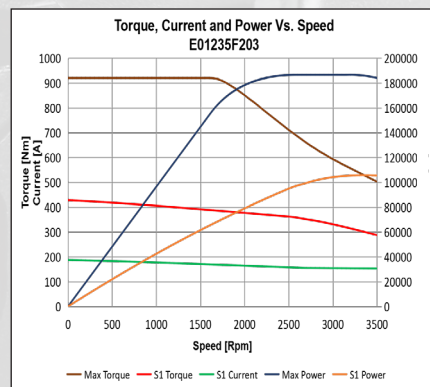
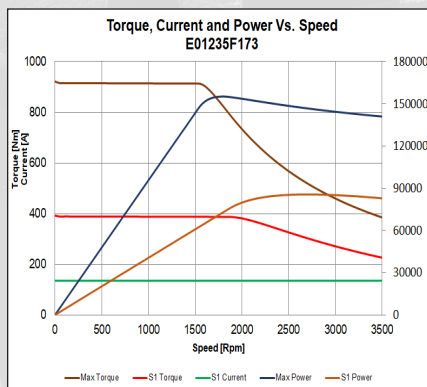
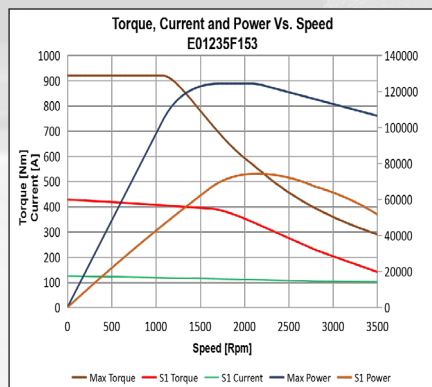
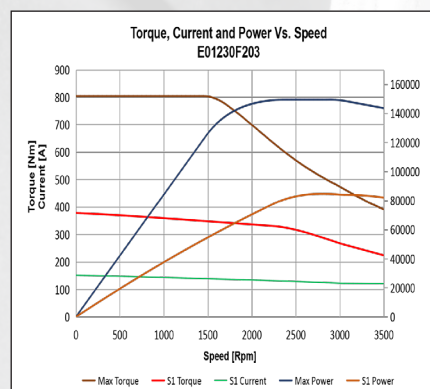
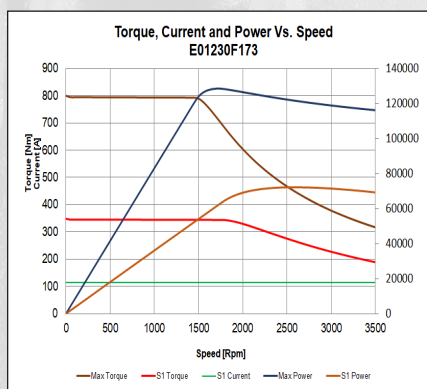
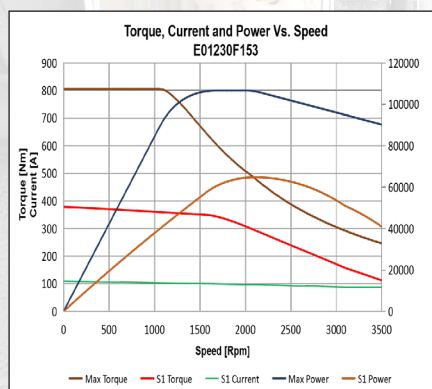
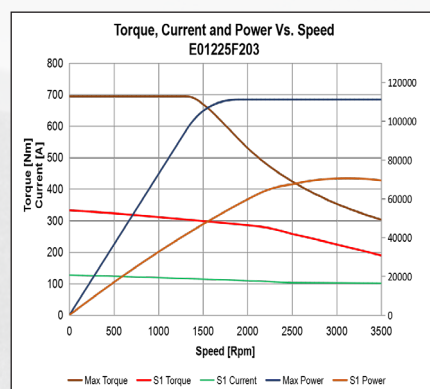
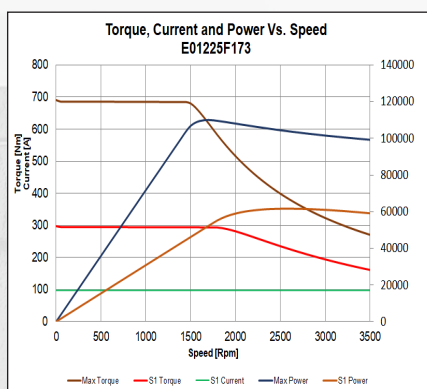
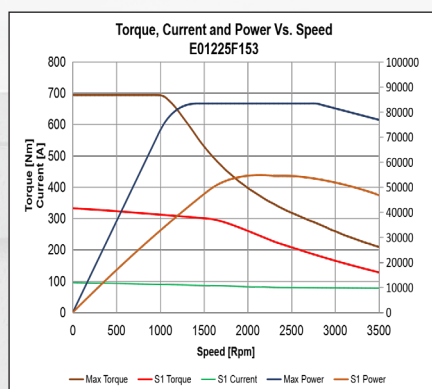
直流母线电压 Vdcbus: 537Vdc

载波频率 PWM frequency: $\geq 4\text{kHz}$

温升 DT: 100K

环境温度 Tamb: 30°C





Express 系列伺服电机规格 (E018_F)

电机型号 Motor Code		E01806F			E01808F			E01809F			E01811F			E01813F			E01815F		
额定转速 Rated Speed	wn [rpm]	1000	1200	1500	1000	1200	1500	1000	1200	1500	1000	1200	1500	1000	1200	1500	1000	1200	1500
额定频率 Rated Freq	Fn [Hz]	100	120	150	100	120	150	100	120	150	100	120	150	100	120	150	100	120	150
最大速度 Max Speed	wmax [rpm]	2000	2500	3000	2000	2500	3000	2000	2500	3000	2000	2500	3000	2000	2500	3000	2000	2500	3000
最大频率 Max Freq	Fmax [Hz]	200	250	300	200	250	300	200	250	300	200	250	300	200	250	300	200	250	300
堵转电流 Stall Current	Io [A]	132	152	177	162	187	223	193	218	261	222	267	325	264	325	360	281	353	396
额定电流 Rated Current	In [A]	120	138	161	147	170	203	175	198	237	202	243	295	240	295	327	255	321	360
堵转扭矩 Stall Torque	To [Nm]	651	642	629	829	827	774	966	930	926	1169	1161	1122	1343	1320	1293	1478	1448	1403
额定扭矩 Rated Torque	Tn [Nm]	592	584	572	754	752	704	878	845	842	1063	1055	1020	1221	1200	1175	1344	1316	1275
额定功率 Rated Power	Pn [kW]	62	73	90	79	95	110	92	106	132	111	137	160	128	151	185	141	165	200
扭矩常数 Torque Constant	Kt [Nm/A]	4.76	3.58	3.40	4.83	4.23	3.32	4.76	4.08	3.40	4.97	4.14	3.41	4.90	3.92	3.44	5.09	3.96	3.40
反电动势 Back EMF	EMF [V/krpm]	288	217	206	292	256	201	288	247	206	301	251	207	297	237	208	308	240	206
绕组线电阻 Winding Resistance	Rw [ohm]	0.0903	0.0667	0.05	0.0643	0.0484	0.03	0.0524	0.0384	0.0267	0.044	0.031	0.0198	0.035	0.0224	0.0171	0.032	0.0194	0.015
直轴线电感 Direct Inductance	Ld [mH]	1.66	1.22	0.84	1.26	0.96	0.59	1.09	0.80	0.56	0.95	0.66	0.42	0.79	0.50	0.37	0.73	0.44	0.33
交轴线电感 Quadrature Inductance	Lq [mH]	4.20	3.11	2.17	3.33	2.52	1.56	2.84	2.09	1.45	2.49	1.72	1.10	2.02	1.30	1.00	1.90	1.15	0.86
最大电流 Max Current	Imax [A]	275	315	332	285	330	408	347	405	485	402	483	603	550	685	650	600	765	721
最大扭矩 Max Torque	Tmax [Nm]	1270	1254	1141	1420	1434	1400	1680	1680	1677	2040	2043	2040	2660	2627	2303	2999	3000	2550
转动惯量 Rotor Inertia	Jm [kgcm ²]	3890			5060			5650			6850			7980			9170		
电机重量 Weight	M[kg]	315			357			377			418			460			498		

驱动器电压 Vdrive : 380Vac

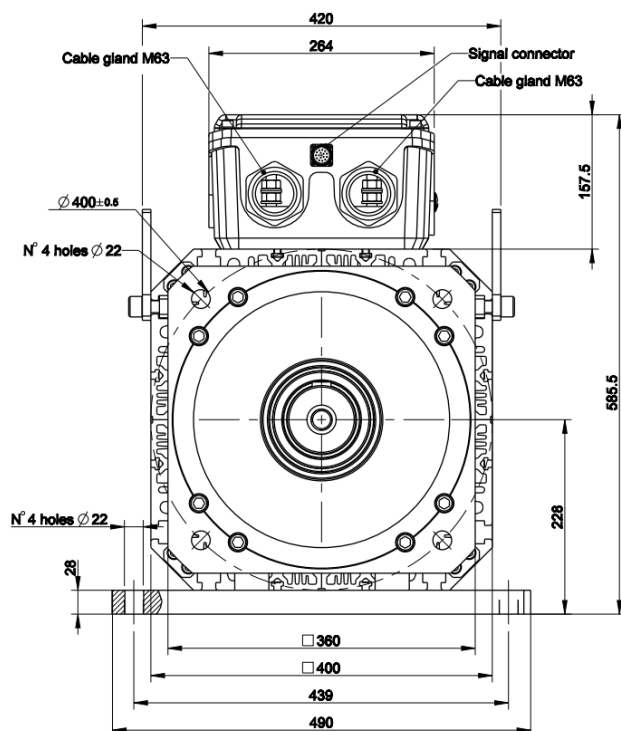
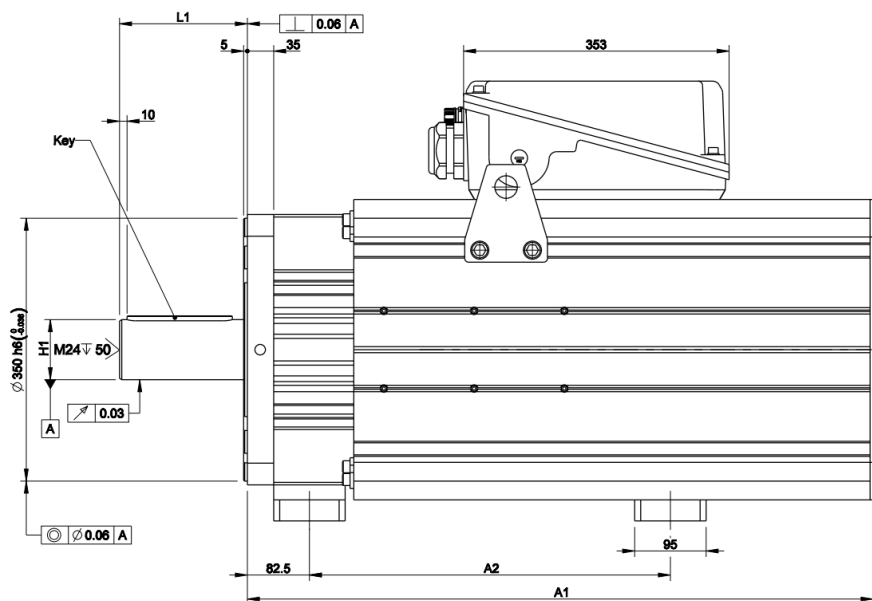
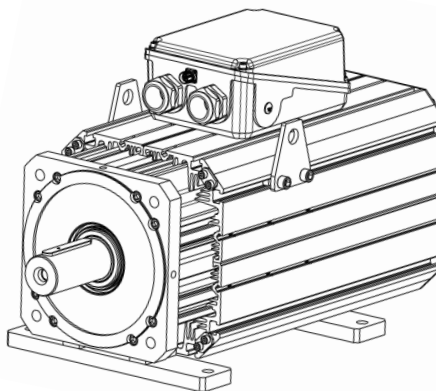
直流母线电压 Vdcbus : 537Vdc

载波频率 PWM frequency: ≥ 4kHz

温升 DT : 100K

环境温度 Tamb : 30°C

	A1 (mm)	A2 (mm)	L1 (mm)	H1 (mm)	Key (mm)
E01806F	682	330	170	80m6	22x14x140
E01808F	742	390	170	80m6	22x14x140
E01809F	772	420	170	80m6	22x14x140
E01811F	832	480	170	80m6(90m6)	22x14x140(25x14x140)
E01813F	892	540	170	90m6	25x14x140
E01815F	962	610	170	90m6	25x14x140



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