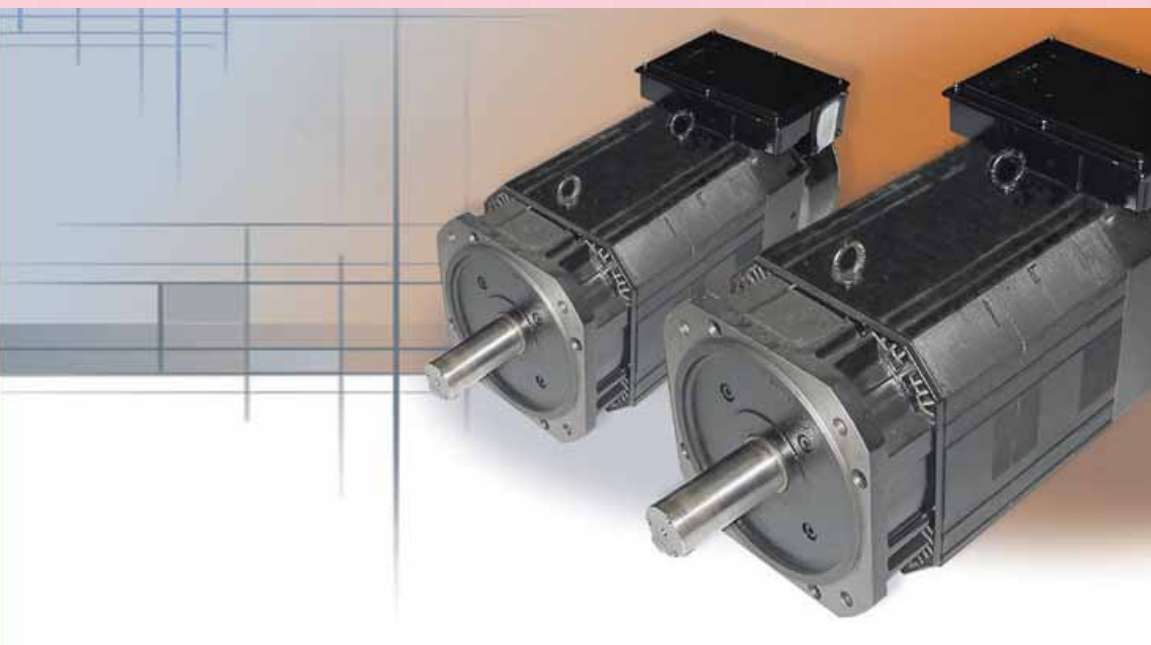




AC SPINDLE MOTOR -FM7-

ORDERING HANDBOOK



Ref. 0712

AC Spindle Motors FM7

Denominations

		FM7	A	1	1	0	S	1	C	1	E	0	1
FAGOR FM7 Motor	FM7												
1500 rpm Base Speed . Single winding	A												
1000 rpm Base Speed . Single winding	B												
500 rpm Base Speed . Single winding	C												
1500/4000 rpm Base Speed . Double winding	D												
1250 rpm Base Speed . Single winding	E												
Motor Power													
3.7 Kw	037												
5.5 Kw	055												
7.5 Kw	075												
9.0 Kw	090												
11.0 Kw	110												
12.0 Kw	120												
15.0 Kw	150												
17.0 Kw	170												
18.5 Kw	185												
21.5 Kw	215												
22.0 Kw	220												
27.0 Kw	270												
28.0 Kw	280												
30.0 Kw	300												
37.0 Kw	370												
51.0 Kw	510												
60.0 Kw	600												
Standard Encoder	S												
"C" axis encoder	C												
Flange mounting	1												
Foot mounting	3												
Flange & Foot mounting (*)	5												
Vibration Severity grade V10	B												
Vibration Severity grade V5	C												
Vibration Severity grade V3	D												
Plain Shaft (No keyway)	0												
Keyway: half key balancing	1												
Motor version	E01												
	E03												
	HS3												

(*) Flange & Foot mounting is valid for all models except A037, A055, A075 and A090.

Available Models

Series E01	FM7	E01	A 037	A 055	A 075	A 090	A 110	A 150	A 185	A 220	A 300	A 370	A 500
			B 120	B 170	B 220	B 280							
			C 215	C 270									
			E600										
Series E03	FM7	E03	D055	D075	D110	D150	D185	D220					
Series HS3	FM7	HS3	D075	D110	D185	D220							

FM7-E600__E01 motors have a single winding with a base speed of 1250 rpm, they always carry a C axis encoder and they withstand a vibration degree of V10. Consequently, FM7-E600-Cx-Bx-E01.

The FM7-E600-C1 flange mounting, only with the shaft facing down (V1 construction), B5 is not allowed.

E01 Series

Models and Characteristics

AC Spindle motor	Rated power		Rated Speed n_N rpm	Maxi- mum Speed n_{MAX} -E01 rpm	Rated Torque $M - S1$ Nm	Rated Current $I_N - S1$ A_{rms}	Inertia J kg.cm ²	Weight		Vibration severity		Power cable Nr of wires x mm2	Spindle Modular Drive	Spindle Compact Drive
	P_N							Flange mounting	Foot mounting					
	S1 kW	S6-40% kW								Standard	Option			
FM7-A037-xxxx-E01	3.7	5.5	1500	9000	23.5	12.4	140	47	49	V5	V3	MPC-4x2.5	SPD 1.25	SCD 1.25A
FM7-A055-xxxx-E01	5.5	7.7	1500	9000	35.0	14.6	210	52	56	V5	V3	MPC-4x2.5	SPD 1.25	SCD 1.25A
FM7-A075-xxxx-E01	7.5	11.0	1500	9000	47.7	19.8	260	59	64	V5	V3	MPC-4x4	SPD 1.35	SCD 2.35
FM7-A090-xxxx-E01	9.0	13.0	1500	9000	57.4	25.0	330	68	73	V5	V3	MPC-4x6	SPD 2.50	SCD 2.50
FM7-A110-xxxx-E01	11.0	15.5	1500	9000	70.0	28.0	690	94	110	V5	V3	MPC-4x6	SPD 2.50	SCD 2.50
FM7-A150-xxxx-E01	15.0	22.0	1500	8000	95.5	39.4	690	94	110	V5	V3	MPC-4x10	SPD 2.75	-----
FM7-A185-xxxx-E01	18.5	26.0	1000	8000	117.8	35.0	890	120	130	V5	V3	MPC-4x16	SPD 2.85	-----
FM7-A220-xxxx-E01	22.0	33.0	1500	8000	140.0	47.5	890	120	130	V5	V3	MPC-4x25	SPD 3.100	-----
FM7-B120-xxxx-E01	12.0	18.5	1500	8000	114.6	61.4	1080	135	145	V5	V3	MPC-4x10	SPD 2.75	-----
FM7-B170-xxxx-E01	17.0	25.0	1000	8000	162.3	47.3	1080	135	145	V5	V3	MPC-4x16	SPD 2.85	-----
FM7-A300-xxxx-E01	30.0	45.0	1500	6500	191.0	82.1	2310	220	230	V10	V5	MPC-4x35	SPD 3.150	-----
FM7-B220-xxxx-E01	22.0	33.0	1000	6500	210.0	64.9	2310	220	230	V10	V5	MPC-4x25	SPD 3.100	-----
FM7-A370-xxxx-E01	37.0	56.0	1500	6500	235.0	90.0	2660	250	260	V10	V5	MPC-4x50	SPD 3.200	-----
FM7-B280-xxxx-E01	28.0	42.0	1000	6500	267.4	78.2	2660	250	260	V10	V5	MPC-4x35	SPD 3.150	-----
FM7-A510-xxxx-E01	51.0	71.0	1500	5000	325.0	115.2	4730	340	350	V10	V5	MPC-4x50	SPD 3.200	-----
FM7-C215-xxxx-E01	21.5	29.0	500	5000	410.6	87.9	4730	340	350	V10	V5	MPC-4x50	SPD 3.150	-----
FM7-C270-xxxx-E01	27.0	37.0	500	5000	515.7	117.0	5480	380	390	V10	V5	MPC-4x50	SPD 3.200	-----
FM7-E600-xxxx-E01	60.0	80.0	1250	5000	458.4	117.4	8720	525	540	V10	----	MPC-4x50	SPD 3.200	-----

Encoder - Drive Cable.

5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
EEC-FM7-05	EEC-FM7-10	EEC-FM7-15	EEC-FM7-20	EEC-FM7-25					
EEC-FM7S-05	EEC-FM7S-10	EEC-FM7S-15	EEC-FM7S-20	EEC-FM7S-25	EEC-FM7S-30	EEC-FM7S-35	EEC-FM7S-40	EEC-FM7S-45	EEC-FM7S-50
EEC-FM7CS-05	EEC-FM7CS-10	EEC-FM7CS-15	EEC-FM7CS-20	EEC-FM7CS-25	EEC-FM7CS-30	EEC-FM7CS-35	EEC-FM7CS-40	EEC-FM7CS-45	EEC-FM7CS-50

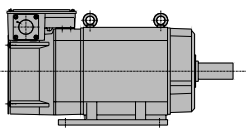
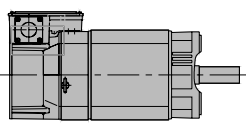
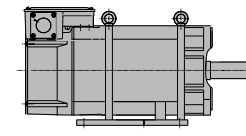
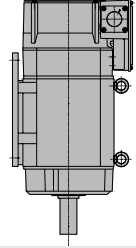
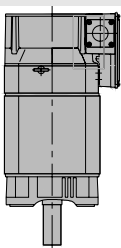
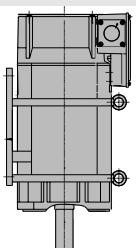
The EEC-FM7 and EEC-FM7S cables are indicated for Standard encoders.

The EEC-FM7S cable improves more flexibility and system immunity against disturbances.

The EEC-FM7CS cables are indicated for C axis encoder

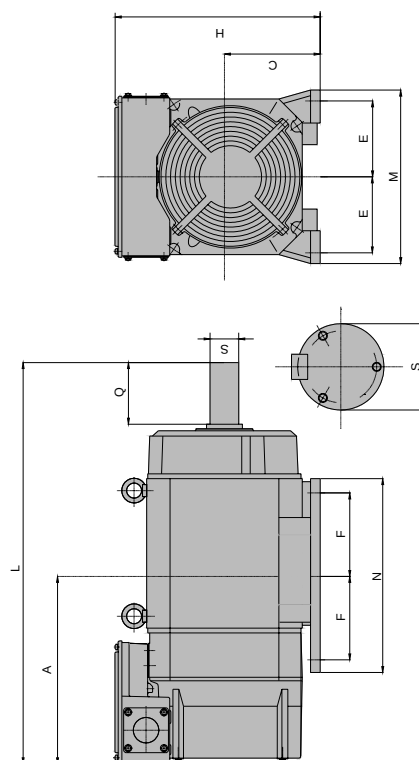
All connections cables have incorporated the HD SubD connector M26 to connect to the drive.

Mounting possibilities

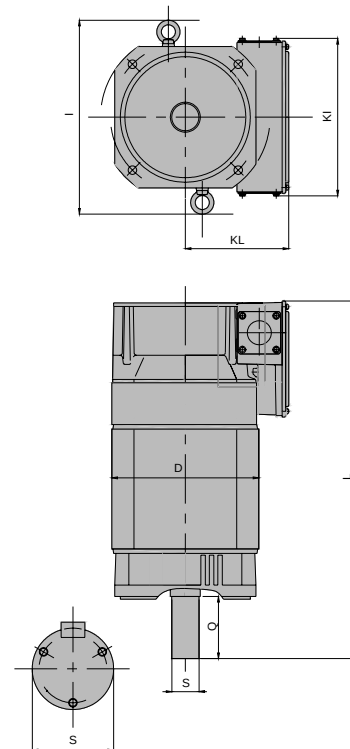
		
Foot mounting B3	Flange mounting B5	Foot & Flange mounting B35
		
Foot mounting V5	Flange mounting V1	Foot & Flange mounting V15

AC Spindle Motors FM7**Foot mounting dimensions (mm).**

MOTORS	A	C	E	F	H	L	M	N	Q	S
FM7-A037-S3XX-E01	324	100	80	70	250	499	188	168	60	28 h6
FM7-A055-S3XX-E01	286	112	95	50	269	486	220	129	80	32 h6
FM7-A075-S3XX-E01	296	112	95	70	269	546	220	177	110	48 h6
FM7-A090-S3XX-E01	317	112	95	89	269	586	220	215	110	48 h6
FM7-A110-S3XX-E01	264	160	127	89	343	571	290	223	110	48 h6
FM7-A150-S3XX-E01	264	160	127	89	343	571	290	223	110	48 h6
FM7-A185-S3XX-E01	310	160	127	105	343	633	290	255	110	48 h6
FM7-A220-S3XX-E01	313.5	160	127	139.5	343	671	290	324	110	48 h6
FM7-A300-S3XX-E01	381	180	139.5	127	407	769	320	298	140	60 m6
FM7-A370-S3XX-E01	421	180	139.5	127	407	809	320	298	140	60 m6
FM7-A510-S3XX-E01	398	225	178	155.5	540	842.5	420	425	140	70 m6
FM7-B120-S3XX-E01	310	160	127	105	343	633	290	255	110	48 h6
FM7-B170-S3XX-E01	313.5	160	127	139.5	343	671	290	324	110	48 h6
FM7-B220-S3XX-E01	381	180	139.5	127	407	769	320	298	140	60 m6
FM7-B280-S3XX-E01	421	180	139.5	127	407	809	320	298	140	60 m6
FM7-C215-S3XX-E01	398	225	178	155.5	540	842.5	420	425	140	70 m6
FM7-C270-S3XX-E01	429	225	178	174.5	540	892.5	420	465	140	70 m6
FM7-E600-S3XX-E01	589	225	178	228.5	540	1065.5	420	590	140	65 m6

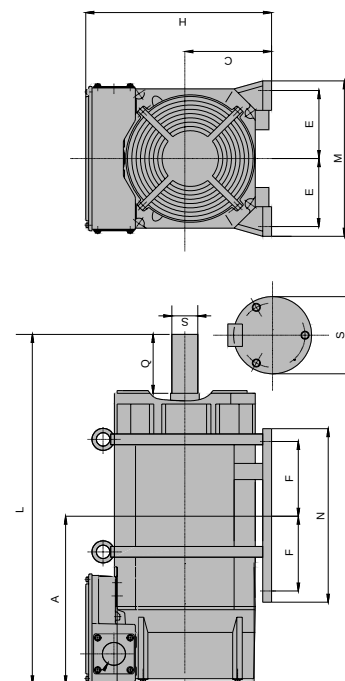
**Flange mounting dimensions (mm)**

MOTORS	D	I	KL	KI	L	Q	S
FM7-A037-S1XX-E01	174	---	150	174	499	60	28 h6
FM7-A055-S1XX-E01	204	270	158	204	486	80	32 h6
FM7-A075-S1XX-E01	204	270	158	204	546	110	48 h6
FM7-A090-S1XX-E01	204	270	158	204	586	110	48 h6
FM7-A110-S1XX-E01	260	343	183	279	571	110	48 h6
FM7-A150-S1XX-E01	260	343	183	279	571	110	48 h6
FM7-A185-S1XX-E01	260	343	183	279	633	110	48 h6
FM7-A220-S1XX-E01	260	343	183	279	671	110	48 h6
FM7-A300-S1XX-E01	320	440	227	320	769	140	60 m6
FM7-A370-S1XX-E01	320	440	227	320	809	140	60 m6
FM7-A510-S1XX-E01	380	504	315	388	847	140	70 m6
FM7-B120-S1XX-E01	260	343	183	279	633	110	48 h6
FM7-B170-S1XX-E01	260	343	181	250	671	110	48 h6
FM7-B220-S1XX-E01	320	440	227	320	769	140	60 m6
FM7-B280-S1XX-E01	320	440	227	320	809	140	60 m6
FM7-C215-S1XX-E01	380	504	315	388	847	140	70 m6
FM7-C270-S1XX-E01	380	504	315	388	897	140	70 m6
FM7-E600-S1XX-E01	380	526	315	388	1065.5	140	65 m6



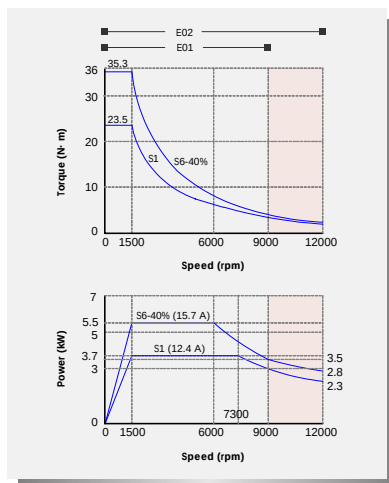
Foot & Flange mounting dimensions (mm)

MOTORS	A	C	E	F	H	L	M	N	Q	S
FM7 - A110 - S5XX- E01	264	160	127	89	343	571	290	223	110	48 h6
FM7 - A150 - S5XX- E01	264	160	127	89	343	571	290	223	110	48 h6
FM7 - A185 - S5XX- E01	310	160	127	105	343	633	290	255	110	48 h6
FM7 - A220 - S5XX- E01	313.5	160	127	139.5	343	671	290	324	110	48 h6
FM7 - A300 - S5XX- E01	381	180	139.5	127	407	769	320	298	140	60 m6
FM7 - A370 - S5XX- E01	421	180	139.5	127	407	809	320	298	140	60 m6
FM7 - A510 - S5XX- E01	398	225	178	155.5	540	847	420	425	140	70 m6
FM7 - B120 - S5XX- E01	310	160	127	105	343	633	290	255	110	48 h6
FM7 - B170 - S5XX- E01	313.5	160	127	139.5	343	671	290	324	110	48 h6
FM7 - B220 - S5XX- E01	381	180	139.5	127	407	769	320	298	140	60 m6
FM7 - B280 - S5XX- E01	421	180	139.5	127	407	809	320	298	140	60 m6
FM7 - C215 - S5XX- E01	398	225	178	155.5	540	847	420	425	140	70 m6
FM7 - C270 - S5XX- E01	429	225	178	174.5	540	897	420	425	140	70 m6
FM7 - E600 - S5XX- E01	589	225	178	228.5	540	1065.5	420	590	140	65 m6

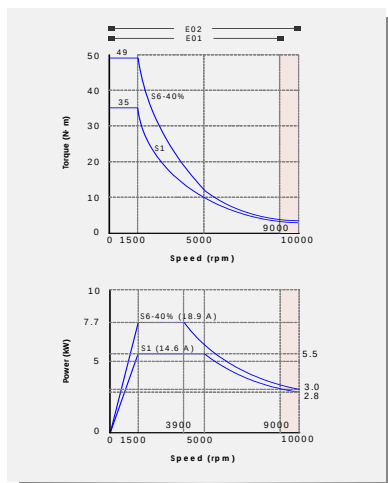


Power / Torque-Speed graphics - E01 Series

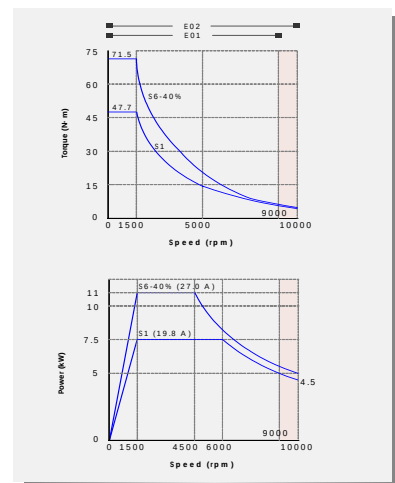
FM7-A037



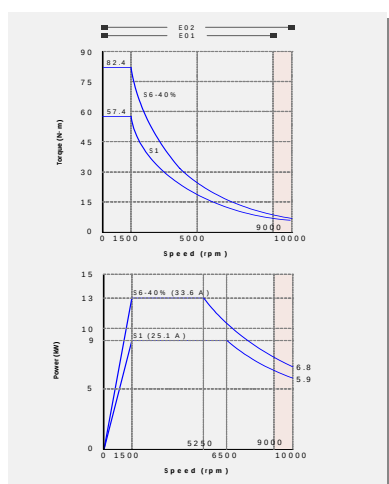
FM7-A055



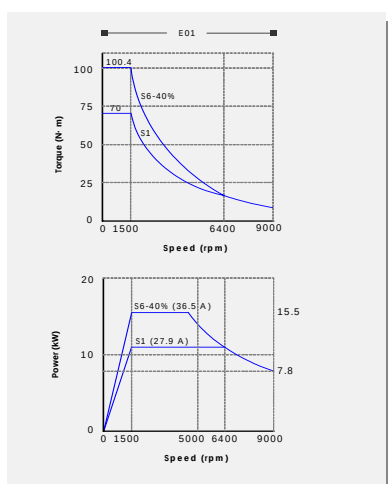
FM7-A075



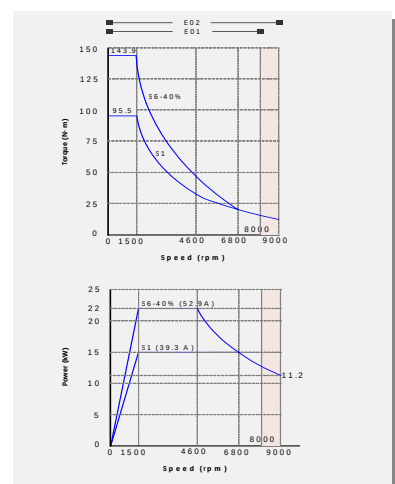
FM7-A090



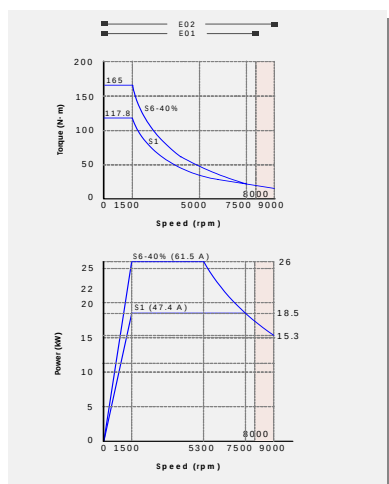
FM7-A110



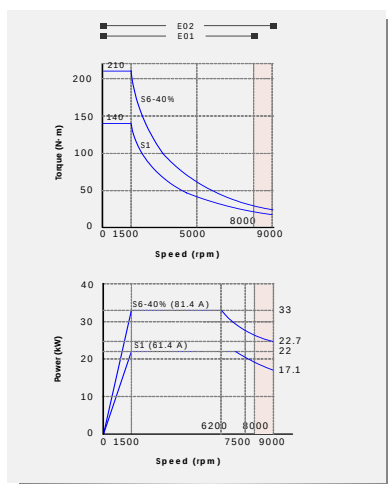
FM7-A150



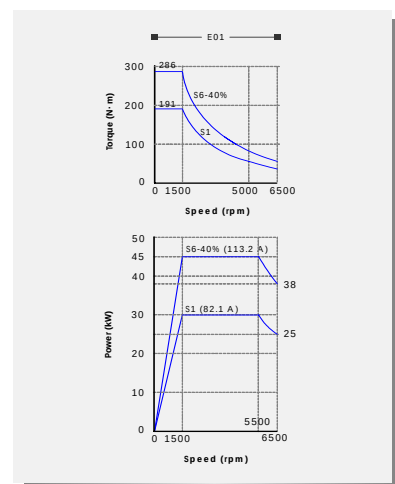
FM7-A185

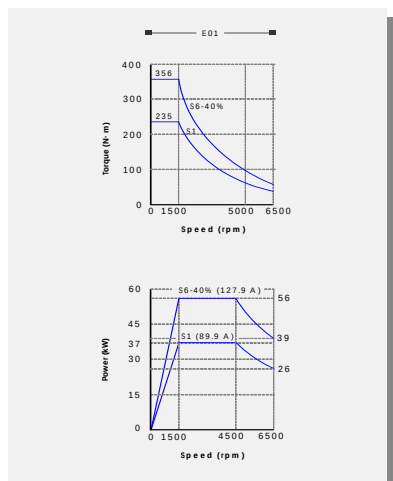
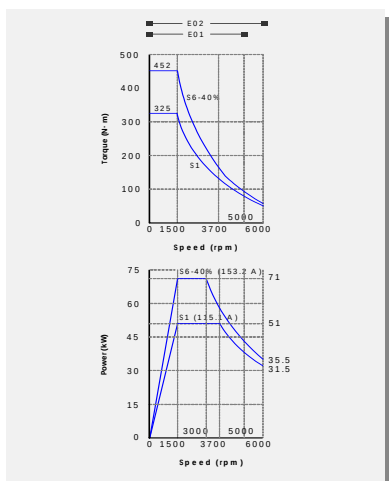
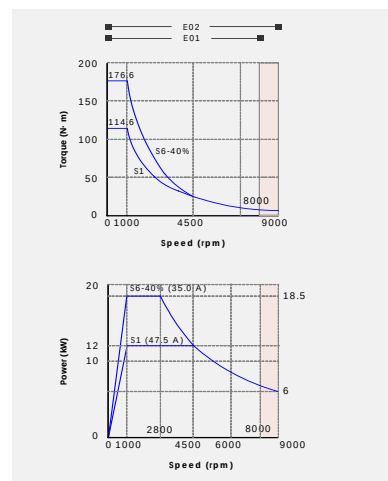
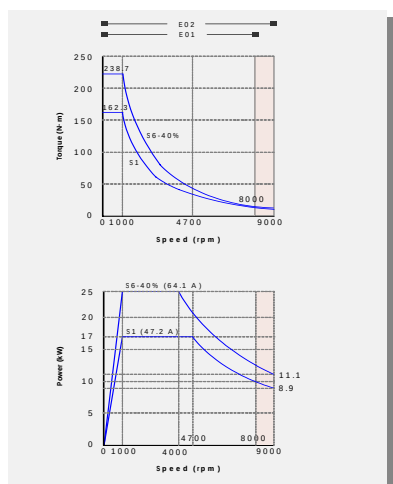
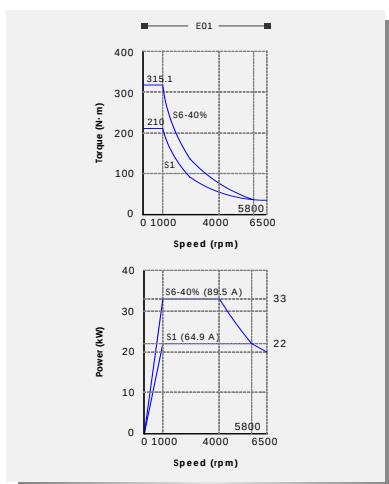
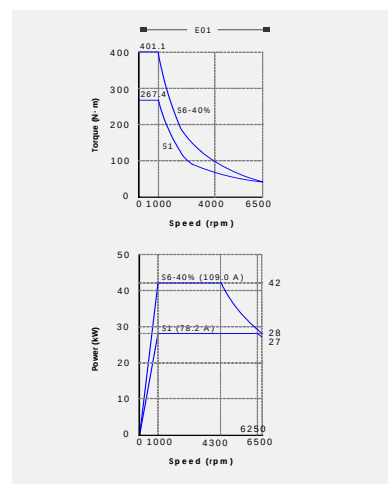
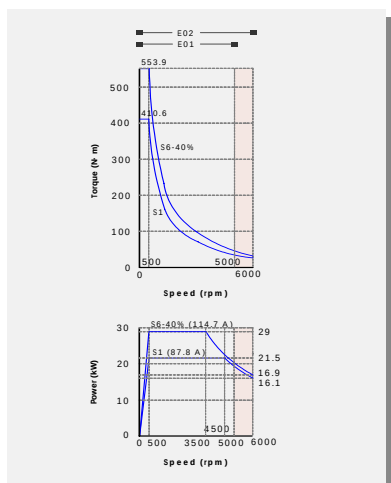
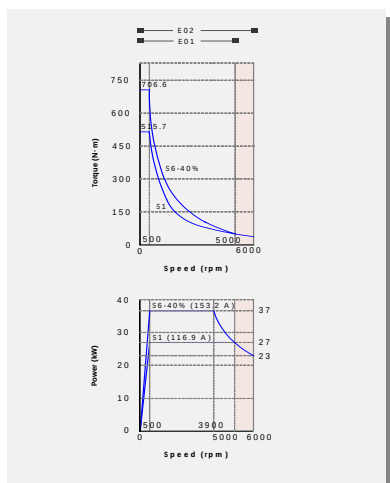
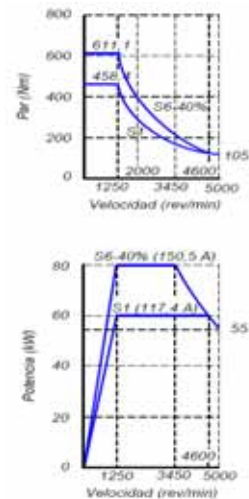


FM7-A220



FM7-A300



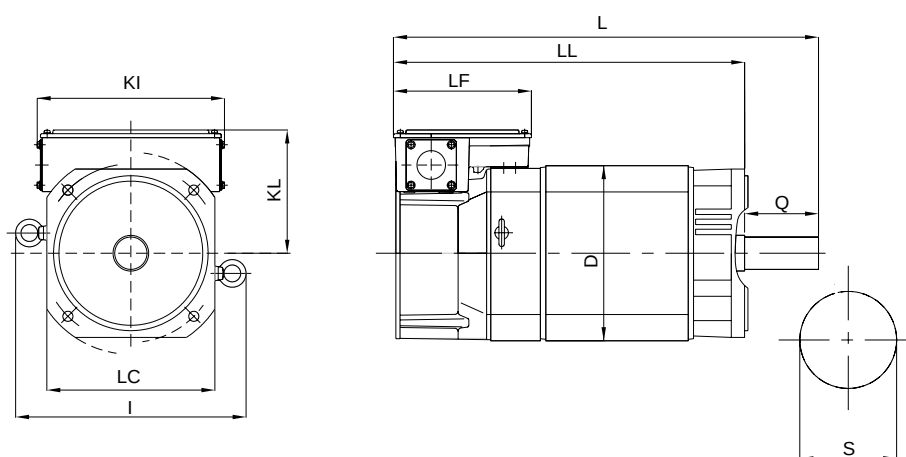
FM7-A370**FM7-A510****FM7-B120****FM7-B170****FM7-B220****FM7-B280****FM7-C215****FM7-C270****FM7-E600**

AC Spindle Motors FM7**E03 Series****Models and Characteristics**

AC Spindle motor	Rated power P_N			Required Power P_m		Rated Speed n_N		Maximum Speed n_{MAX}	Rated Torque $M - S1$		Rated Current $I_N - S1$		Inertia J	Weight	Vibration severity	Power cable Nr of wires x mm ²	Spindle Modular Drive
	S1 kW	S6-40% kW		Pm kW		n_N rpm		n_{MAX} rpm	M - S1 Nm		$I_N - S1$ A_{rms}		J kg.cm ²	kg			
		Star	Triangle	Star	Triangle	Star	Triangle		Star	Triangle	Star	Triangle					
FM7-D055-S1D0-E03	5.5	7.7	10.0	10.1	13.1	1500	4000	15000	35.0	13.1	20.3	20.7	210	67	V3	MPC-4x4	SPD 1.35
FM7-D075-S1D0-E03	7.5	11	13.0	14.4	17.1	1500	4000	15000	47.7	17.9	26.5	25.8	260	74	V3	MPC-4x6	SPD 2.50
FM7-D110-S1D0-E03	11.0	15.5	20.0	19.3	24.9	1500	4000	12000	70.0	26.3	38.0	40.0	690	110	V3	MPC-4x10	SPD 2.70
FM7-D150-S1D0-E03	15.0	22.0	26.0	27.4	32.4	1500	4000	12000	95.5	35.8	246.4	45.7	690	110	V3	MPC-4x16	SPD 2.85
FM7-D185-S1D0-E03	18.5	26.0	32.0	31.6	38.9	1500	4000	12000	117.8	44.2	49.2	49.2	890	135	V3	MPC-4x16	SPD 2.85
FM7-D220-S1D0-E03	22.0	33.0	40.0	41.6	50.4	1500	4000	12000	140.1	52.5	62.3	61.7	1080	150	V3	MPC-4x25	SPD 3.100

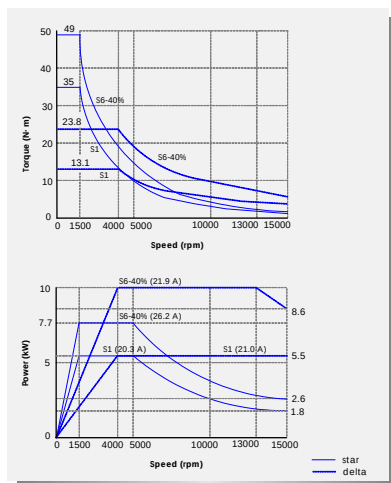
Foot & Flange mounting dimensions (mm)

MOTORS	D	I	L	Q	KI	KL	LC	LF	LL	S
FM7 - D055 - S1D0 - E03	204	270	475	60	204	158	204	171	415	28 h6
FM7 - D075 - S1D0 - E03	204	270	506	60	250	164	204	190	446	28 h6
FM7 - D110 - S1D0 - E03	260	343	556	80	279	183	250	205	476	38 h6
FM7 - D150 - S1D0 - E03	260	343	556	80	279	183	250	205	476	38 h6
FM7 - D185 - S1D0 - E03	260	343	618	80	279	183	250	205	538	38 h6
FM7 - D220 - S1D0 - E03	260	343	656	80	279	183	250	205	576	38 h6

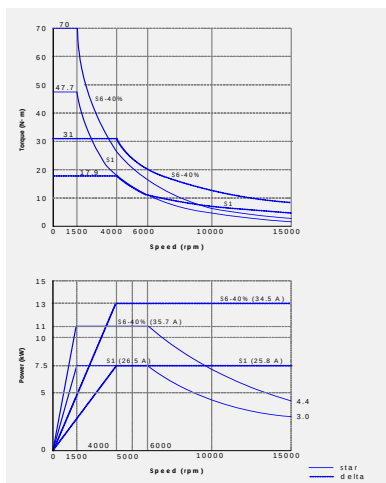


Power / Torque-Speed graphics - E03 Series

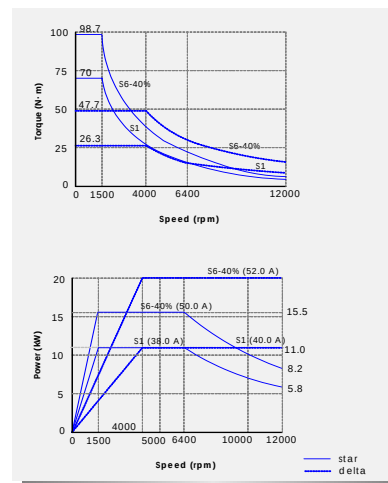
FM7-D055



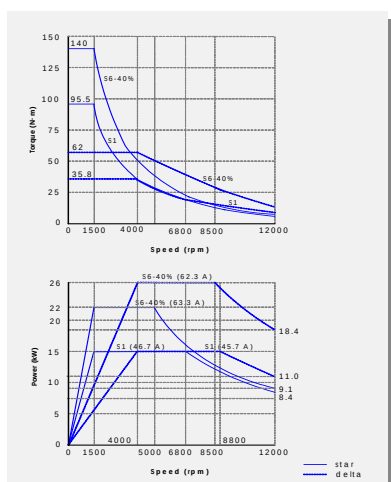
FM7-D075



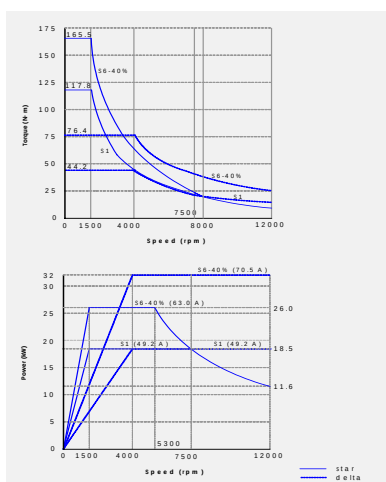
FM7-D110



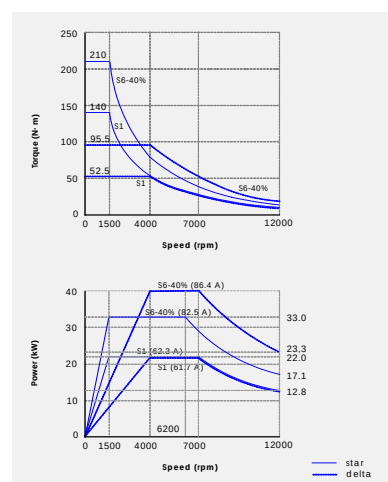
FM7-D150



FM7-D185



FM7-D220



AC Spindle Motors FM7

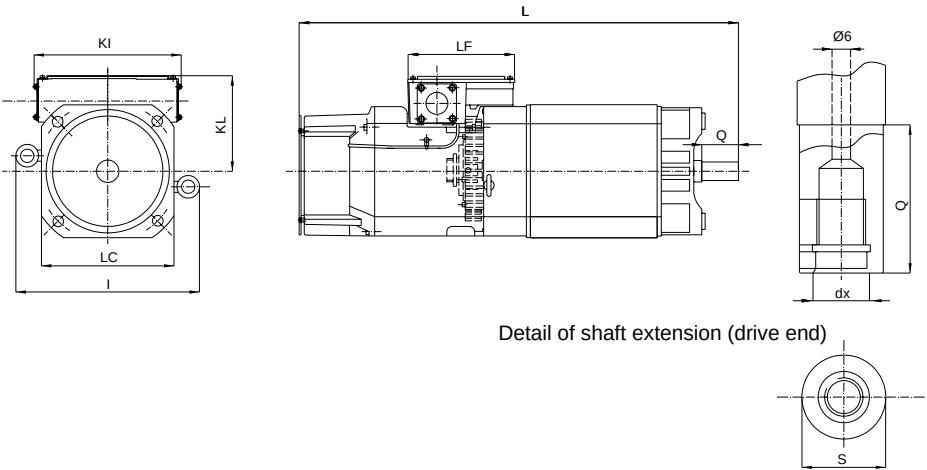
HS3 Series

Models and Characteristics

AC Spindle motor	Rated power P_N			Required Power		Rated Speed		Maximum Speed	Rated Torque		Rated Current		Inertia	Weight	Vibration severity	Power cable	Spindle Modular Drive
	S1 kW	S6-40% kW		Pm kW		n_N rpm		n_{MAX} rpm	M - S1 Nm		I_N - S1 A_{rms}		J kg.cm ²	kg	Standard	Nr of wires x mm2	
		Star	Triangle	Star	Triangle	Star	Triangle		Star	Triangle	Star	Triangle					
FM7-D075-S1D0-HS3	7.5	11.0	13.0	14.4	14.4	1500	4000	15000	47.7	17.9	26.5	25.8	260	77	V3	MPC-4x6	SPD 2.50
FM7-D110-S1D0-HS3	11.0	15.5	20.0	19.3	17.4	1500	4000	12000	70.0	26.3	38.0	40.0	690	116	V3	MPC-4x10	SPD 2.75
FM7-D185-S1D0-HS3	18.5	26.0	32.0	31.6	28.4	1500	4000	12000	117.8	44.2	49.2	49.2	890	140	V3	MPC-4x16	SPD 2.85
FM7-D220-S1D0-HS3	22.0	33.0	40.0	41.6	37.5	1500	4000	12000	140.1	52.2	62.3	61.7	1080	155	V3	MPC-4x25	SPD 3.100

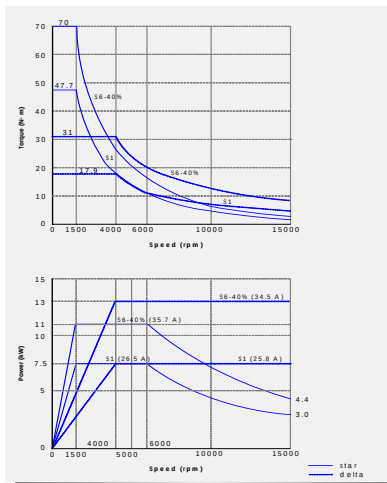
Foot & Flange mounting dimensions (mm)

MOTORS	I	L	Q	KI	KL	LC	LF	dx	S
FM7 - D075 - S1D0- HS3	271	715	60	250	158	204	190	16	28 h6
FM7 - D110 - S1D0- HS3	343	751	70	279	183	250	205	20	38 h6
FM7 - D185 - S1D0- HS3	343	813	70	279	183	250	205	20	38 h6
FM7 - D220 - S1D0- HS3	343	851	70	279	183	250	205	20	38 h6

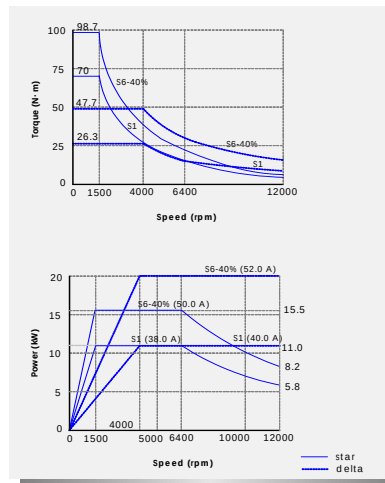


Power / Torque-Speed graphics - HS3 Series

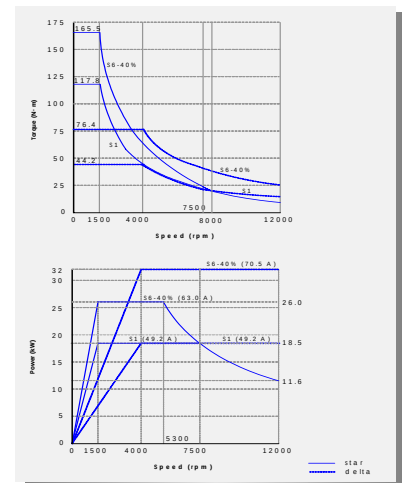
FM7-D075



FM7-D110



FM7-D185



FM7-D110

