

FAGOR Digital Servo Drive System



FAGOR 

FAGOR AUTOMATION

Servo drive systems

Modular system

It is a configurable system that controls several axes and the spindle.

The Power supply module (PS, XPS or RPS) is connected directly to 400-460Vac mains and it supplies to the servo drive modules installed:

- ▣ Axis drives (AXD)
- ▣ Spindle drives (SPD)

Power supplies

MODEL	Non-regenerative		Regenerative		Regenerative regulated		
	PS-65A	PS-25B4	XPS-25	XPS-65	RPS-20	RPS-45	RPS-75
Mains	Three-phase from 360 to 506 VAC						
Voltage supply for the drive's control circuit	24 VDC (between 21-28 VDC)						
Output voltage (power BUS)	565-650 VDC				600, 625 or 725 VDC. They are programmable.		
Rated (peak) output power	65 Kw (195 kw, 1 sec)	25 Kw (75 Kw, 1 sec)	25 Kw (55 Kw, 1 sec)	65 Kw (108 kw, 1 sec)	20 Kw (26 kw, en S6)	45 Kw (59 kw, en S6)	75 Kw (97 kw, en S6)
Rated (peak) output current	120 A (360 A, 1 sec)	45 A (135 A, 1 sec)	45 A (135 A, 1 sec)	120 A (120 A, 1 sec)	32 A (41.6 A, en S6)	72 A (95 A, en S6)	120 A (156 A, en S6)
Output voltage for drive control signals	24 VDC /240 W		24 VDC /192 W				
Internal crowbar Resistance (Ballast)	9 Ohms / 600 w	16,5 Ohms / 500 w	18 Ohms / 520 w	9 Ohms / 1800 w			
Rated regenerative power			20 Kw	54 Kw			
Associated chokes			Choke XPS-25	Choke XPS-65	Choke RPS-20	Choke RPS-45	Choke RPS-75
Dimensions	Size 2	Size 1	Size 3	Size 4	Size 3	Size 5	Size 6

Modular drives for synchronous and asynchronous motors

MODEL	AXD (for axis)								SPD (for spindle)							
	1.08	1.15	1.25	1.35	2.50	2.75	3.100	3.150	1.25	1.35	2.50	2.75	2.85	3.100	3.150	3.200
I nom. Amp.	4	7.5	12.5	17.5	23.5	31.5	50	62								
I peak (0.5 sec) Amp.	8	15	25	35	47	63	100	124								
I nom (S1) 4 kHz									16	23.1	31	42	50	70	90	121
I nom (S1) 8 kHz									13	18	27	32	37	56	71	97
I S6 - 40% 4 kHz									20.8	30	40.3	54.6	65	91	117	157.3
I S6 - 40% 8 kHz									16.9	23.4	35.1	41.6	48.1	72.8	92.3	126.1
Control circuit voltage supply	24 VDC (between 21-28 VDC)															
Control circuit consumption	0.9 A		1.25 A		2 A		0.9 A		1.25 A		2 A					
Dimensions	Size 1			Size 2			Size 4		Size 1		Size 2			Size 4		

Compact system

They are independent drives with an integrated power supply and may be connected directly to mains.

There are compact drives to control a single axis (ACD) or a single spindle (SCD).

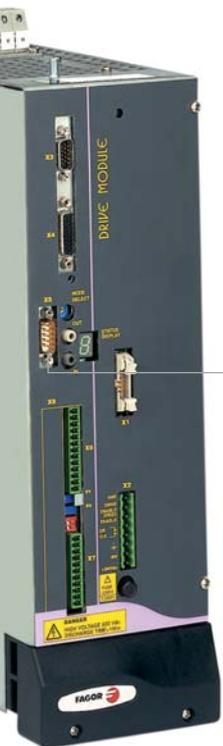


Compact servo drive

MODEL	ACD (for axis)				SCD (for spindle)			
	1.08	1.15	1.25	2.35	1.15	1.25	2.35	2.50
I nom. (Amp.)	4	7.5	12.5	17.5				
I peak (0.5 sec) (Amp.) 4 kHz	8	15	25	35				
I peak (0.5 sec) (Amp.) 8 kHz	8	15	19	35				
I máx. (Amp.) 4 kHz					10.6	17.5	28	38
I máx. (Amp.) 8 kHz					10.6	12.5	19.5	27.0
Mains display	Three-phase from 360 to 506 VAC							
Internal ballast resistance (Ohms)	75	75			75			
Power (W)	(150)	(150)			(150)			
Service voltage (output)	24 VDC (5%), 110 mA							
Dimensions	Size 1			Size 2		Size 1		Size 2



Drive configuration



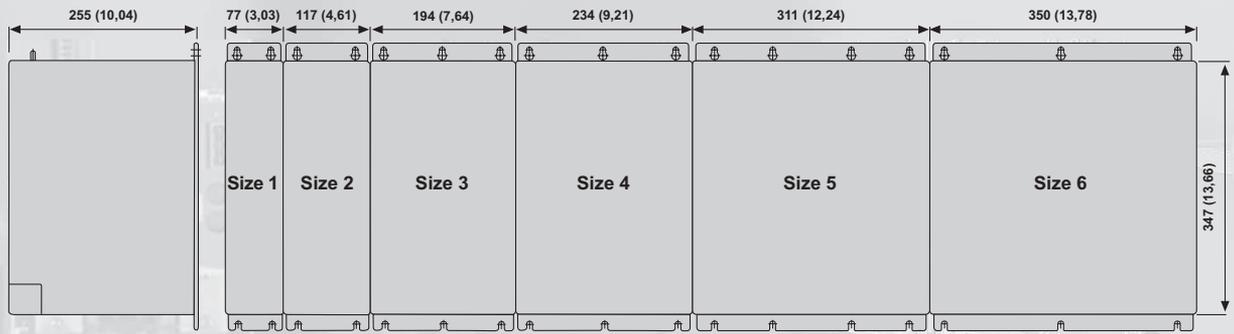
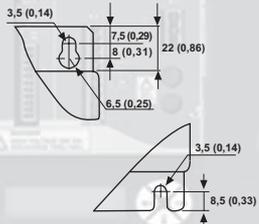
- **DIRECT FEEDBACK (optional)**
Real axis position feedback, usually through a linear or rotary encoder.
- **ENCODER SIMULATOR BOARD (optional)**
It outputs a number of pulses per motor turn that can be set by parameter (any value between 1 and 16,384 ppt, programmable reference mark (Io), differential TTL).
- **MOTOR FEEDBACK BOARD**
It reads the feedback signals coming from the encoder mounted on the motor in order to know the exact rotor position and speed.
- **“RS-232 C” BOARD**
To connect it with a PC or a programming module for parameter setting and system monitoring (between 9,600 Baud and 19,200 Baud).
- **DIGITAL SERCOS INTERFACE BOARD (optional)**
Precise and efficient fiber optic interface using the SERCOS communications standard to transmit position, velocity and torque commands. The use of fiber optics ensures full immunity against noise and extremely simple cabling between modules.
- **DIGITAL CAN INTERFACE CARD (optional)**
Standard CAN communications interface to transmit position, velocity and torque commands..
- **ANALOG INTERFACE BOARD (optional)**
It offers 2 +10V analog inputs and 2 analog outputs to connect the CNC velocity commands and to monitor internal parameters respectively. It also offers 4 digital inputs and 4 digital outputs, all of them fully programmable.

Properties of the drive modules

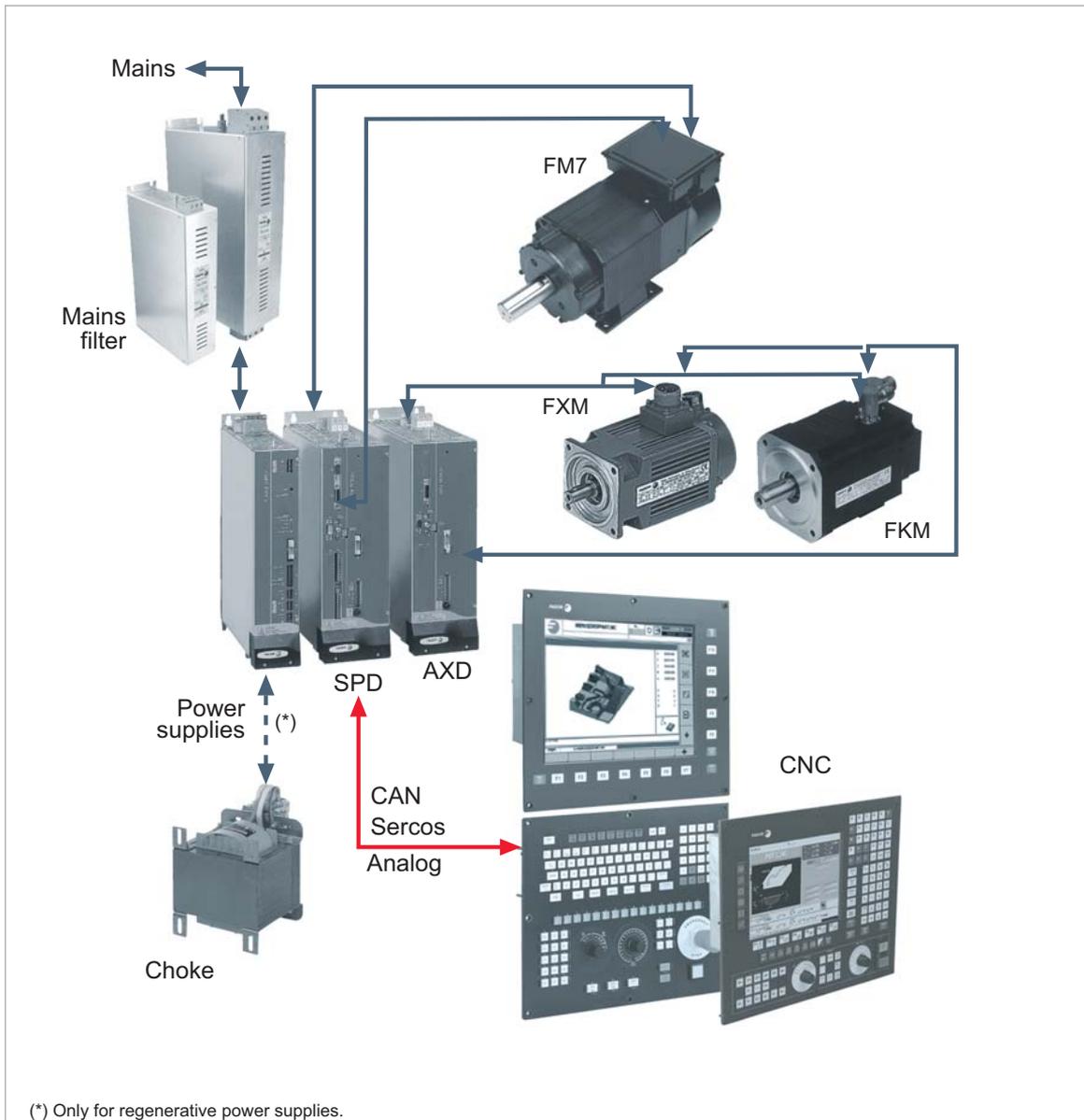
- Either Sercos or analog interface.
- Velocity feedback high resolution Sincos encoder.
- Protections: overvoltage, overcurrent, overspeed, overtemperature, hardware errors, overload, etc.
- Control of high speed spindles.
- Control of electros spindles and built-in motors.
- Direct position feedback: differential TTL, Vpp, Distance-coded Io, FAGOR absolute.

Servo drive systems

Dimensions in mm (inches)



Electrical connection





Accessory modules

Auxiliary power supply module, APS 24

It generates the 24Vdc required by power supply and drive modules to supply their control circuits.



Input voltage	from 400 Vac -10% to 460 Vac +10% 50 / 60 Hz.
Mains consumption	0.72 Amp (400 Vac) 0.63 Amp (460 Vac)
Output voltage, maximum current	24 Vdc [5%] 10 Amp.
Dimensions	Size 1

Resistor modules



Model	Ω	W
ER+TH-24 / 750	24	650
ER+TH-18 / 1100	18	950
ER+TH-18 / 1800	18	1300
ER+TH-18 / 2200	18	2000

Only to be used with PS , XPS power supplies and ACD, SCD compact servo drives.

They are designed to dissipate the excess energy generated while braking when it exceeds the one dissipated by the internal Ballast resistor.

Capacitor module, CM 1.60

It stores the energy returned by the motors while braking when using PS (non-generative) power supplies.

It has a capacity of 4mF and it provides a maximum voltage of 797 Vdc at the power bus.



Mains filter

The European Directive 92/31/CE on electromagnetic compatibility requires inserting a mains filter between mains and the drive system (modular or compact).

Available models:

- ▣ Mains filter 42A for "PS / XPS-25" power supplies
- ▣ Mains filter 130A for "PS / XPS-65" power supplies



Chokes for XPS power supplies

When using regenerative power supplies (XPS) these chokes must be installed in the power regeneration circuit in order to comply with the established regulation.

Available models:

- ▣ CHOKE XPS-25
- ▣ CHOKE XPS-65



Chokes for RPS power supplies

Installing chokes is an absolute must when using RPS regenerative regulated power supplies and they must always be installed between the RPS power supply and the DLC mains filter.

- ▣ CHOKE RPS-20
- ▣ CHOKE RPS-45
- ▣ CHOKE RPS-75

FM7



Asynchronous AC motors

For machine-tool spindles

FAGOR asynchronous motors are small and balanced for high speed. They cover a power range between 3.7 Kw and 60 Kw with base speeds of 500, 1000, 1250 and 1500 rpm with very low noise and vibration levels.

With the FM7_E01 family it is possible to reach up to 9,000 rpm and with the FM7_E03 and FM7_HS3 families up to 15,000 rpm.

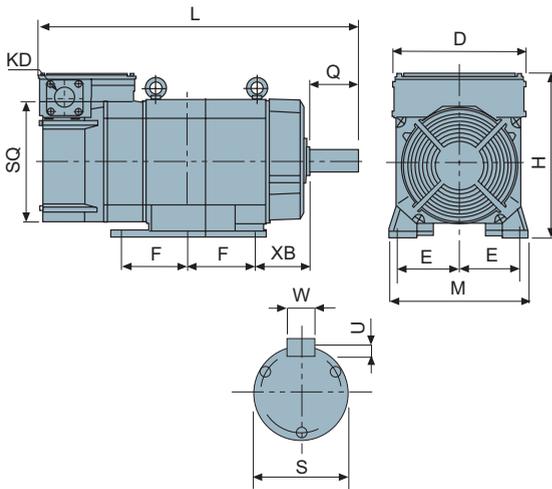
E01 Series

MODEL	Rated Power S1 (KW)	Rated Power S6, 40% (KW)	Rated Torque S1 (Nm)	Rated current (Arms)	Rated Speed (rpm)	Maximum Speed E01(rpm)	Inertia (Kg.cm2)	Weight (Kg) Flange	Weight (Kg) Foot	Spindle Modular Drive	Spindle compact Drive
FM7 A037	3.7	5.5	23.5	12.4	1500	9000	140	47	49	SPD 1.25	SCD 1.25
FM7 A055	5.5	7.7	35	14.6	1500	9000	210	52	56	SPD 1.25	SCD 1.25
FM7 A075	7.5	11	47.7	19.8	1500	9000	260	59	64	SPD 1.35	SCD 2.35
FM7 A090	9	13	57.4	25.1	1500	9000	330	68	73	SPD 2.50	
FM7 A110	11	15.5	70	27.9	1500	9000	690	94	110	SPD 2.50	
FM7 A150	15	22	95.5	39.3	1500	8000	690	94	110	SPD 2.75	
FM7 A185	18.5	26	117.8	47.4	1500	8000	890	120	130	SPD 2.85	
FM7 A220	22	33	140	61.4	1500	8000	1080	135	145	SPD 3.100	
FM7 A300	30	45	191	82.1	1500	6500	2310	220	230	SPD 3.150	
FM7 A370	37	56	235	89.9	1500	6500	2660	250	260	SPD 3.200	
FM7 A510	51	71	325	115.1	1500	5000	4730	340	350	SPD 3.200	
FM7 B120	12	18.5	114.6	35	1000	8000	890	120	130	SPD 2.75	
FM7 B170	17	25	162.3	47.2	1000	8000	1080	135	145	SPD 2.85	
FM7 B220	22	33	210	64.9	1000	6500	2310	220	230	SPD 3.100	
FM7 B280	28	42	267.4	78.2	1000	6500	2660	250	260	SPD 3.150	
FM7 C215	21.5	29	410.6	87.8	500	5000	4730	340	350	SPD 3.150	
FM7 C270	27	37	515.7	116.9	500	5000	5840	380	390	SPD 3.200	
FM7 E600	60	80	458.4	117.4	1250	5000	8720	525	545	SPD 3.200	

General characteristics

Temperature sensor	▪ NTC thermistor	
Balancing. Degree of vibration	▪ Standard: V5 (S) - V10 (R)	▪ Optional: V3 (SR) - V5 (S)
Mounting	▪ Horizontal: B3 - B5 - B35	▪ Vertical: V1 - V5 - V15
Electrical isolation of the winding	▪ Class F (155°C - 311°F)	
Degree of protection	▪ IP44	
Feedback	▪ Standard: magnetic encoder	▪ Optional: C axis encoder

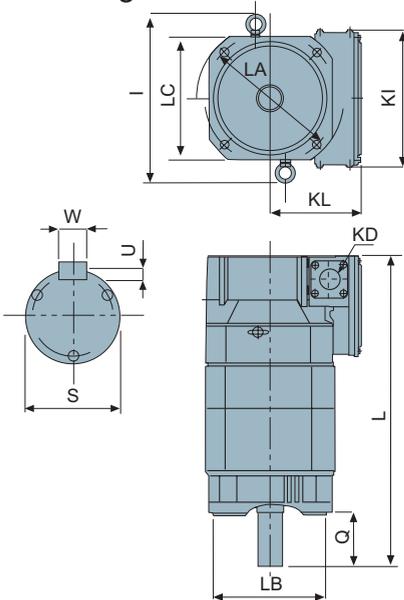
FM7 model with foot mounting



Dimensions for foot mounting (mm)

MODEL	D	E	F	H	KD	L	M	XB	SQ	Q	S	U	W
FM7 A037-S3	174	80	70	250	34	499	188	45	174	60	28 h6	4	8 h9
FM7 A055-S3	204	95	50	269	42.5	486	220	70	204	80	32 h6	5	10h9
FM7 A075-S3	204	95	70	269	42.5	546	220	70	204	110	48 h6	5.5	14 h9
FM7 A090-S3	204	95	89	269	42.5	586	220	70	204	110	48 h6	5.5	14 h9
FM7 A110-S3	279	127	89	343	42.5	571	290	108	260	110	48 h6	5.5	14 h9
FM7 A150-S3	279	127	89	343	42.5	571	290	108	260	110	48 h6	5.5	14 h9
FM7 A185-S3	279	127	105	343	42.5	633	290	108	260	110	48 h6	5.5	14 h9
FM7 A220-S3	279	127	139.5	34	42.5	671	290	108	260	110	48 h6	5.5	14 h9
FM7 A300-S3	320	139.5	127	3	61	769	320	121	320	140	60 m6	7	18 h9
FM7 A370-S3	320	139.5	127	407	61	809	320	121	320	140	60 m6	7	18 h9
FM7 A510-S3	388	178	155.5	407	61	842.5	420	149	380	140	70 m6	7.5	20 h9
FM7 B120-S3	279	127	105	540	42.5	633	290	108	260	110	48 h6	5.5	14 h9
FM7 B170-S3	279	127	139.5	343	42.5	671	290	108	260	110	48 h6	5.5	14 h9
FM7 B220-S3	320	139.5	127	343	61	769	320	121	320	140	60 m6	7	18 h9
FM7 B280-S3	320	139.5	127	407	61	809	320	121	320	140	60 m6	7	18 h9
FM7 C215-S3	388	178	155.5	407	61	842.5	420	149	380	140	70 m6	7.5	20 h9
FM7 C270-S3	388	178	174.5	540	61	892.5	420	149	380	140	70 m6	7.5	20 h9

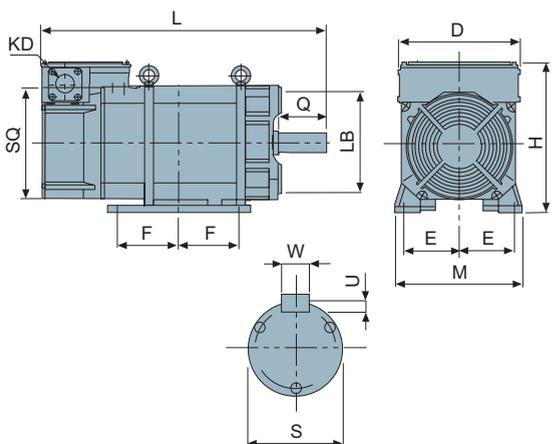
FM7 model with flange mounting



Dimensions for flange mounting (mm)

MODEL	L	LA	LB	LC	I	KD	KL	KI	Q	S	U	W
FM7 A037-S1	499	185	150 h7	174	-	34	150	174	60	28 h6	4	8 h9
FM7 A055-S1	486	215	180 h7	204	270	42.5	158	204	80	32 h6	5	10 h9
FM7 A075-S1	546	215	180 h7	204	270	42.5	158	204	110	48 h6	5.5	14 h9
FM7 A090-S1	586	215	180 h7	204	270	42.5	158	204	110	48 h6	5.5	14 h9
FM7 A110-S1	571	265	230 h7	250	343	42.5	183	279	110	48 h6	5.5	14 h9
FM7 A150-S1	571	265	230 h7	250	343	42.5	183	279	110	48 h6	5.5	14 h9
FM7 A185-S1	633	265	230 h7	250	343	42.5	183	279	110	48 h6	5.5	14 h9
FM7 A220-S1	671	265	230 h7	250	343	42.5	183	279	110	48 h6	5.5	14 h9
FM7 A300-S1	769	350	300 h7	320	440	61	227	320	140	60 m6	7	18 h9
FM7 A370-S1	809	350	300 h7	320	440	61	227	320	140	60 m6	7	18 h9
FM7 A510-S1	847	400	350 h7	370	504	61	315	388	140	70 m6	7.5	20 h9
FM7 B120-S1	633	265	230 h7	250	343	42.5	183	279	110	48 h6	5.5	14 h9
FM7 B170-S1	671	265	230 h7	250	343	42.5	181	250	110	48 h6	5.5	14 h9
FM7 B220-S1	769	350	300 h7	320	440	61	227	320	140	60 m6	7	18 h9
FM7 B280-S1	809	350	300 h7	320	440	61	227	320	140	60 m6	7	18 h9
FM7 C215-S1	847	400	350 h7	370	504	61	315	388	140	70 m6	7.5	20 h9
FM7 C270-S1	897	400	350 h7	370	504	61	315	388	140	70 m6	7.5	20 h9

FM7 model with foot and flange mounting



Dimensions for flange & foot mounting (mm)

MODEL	L	LB	D	E	F	H	M	KD	SQ	Q	S	U	W
FM7 A110-S5	571	230 h7	279	127	89	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 A150-S5	571	230 h7	279	127	89	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 A185-S5	633	230 h7	279	127	105	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 A220-S5	671	230 h7	279	127	139.5	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 A300-S5	769	300 h7	320	139.5	127	407	320	61	320	140	60 m6	7	18 h9
FM7 A370-S5	809	300 h7	320	139.5	127	407	320	61	320	140	60 m6	7	18 h9
FM7 A510-S5	847	350 h7	388	178	155.5	540	420	61	380	140	70 m6	7.5	20 h9
FM7 B120-S5	633	230 h7	279	127	105	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 B170-S5	671	230 h7	279	127	139.5	343	290	42.5	260	110	48 h6	5.5	14 h9
FM7 B220-S5	769	300 h7	320	139.5	127	407	320	61	320	140	60 m6	7	18 h9
FM7 B280-S5	809	300 h7	320	139.5	127	407	320	61	320	140	60 m6	7	18 h9
FM7 C215-S5	847	350 h7	388	178	155.5	540	420	61	380	140	70 m6	7.5	20 h9
FM7 C270-S5	897	350 h7	388	178	174.5	540	420	61	380	140	70 m6	7.5	20 h9

Dimensions in mm

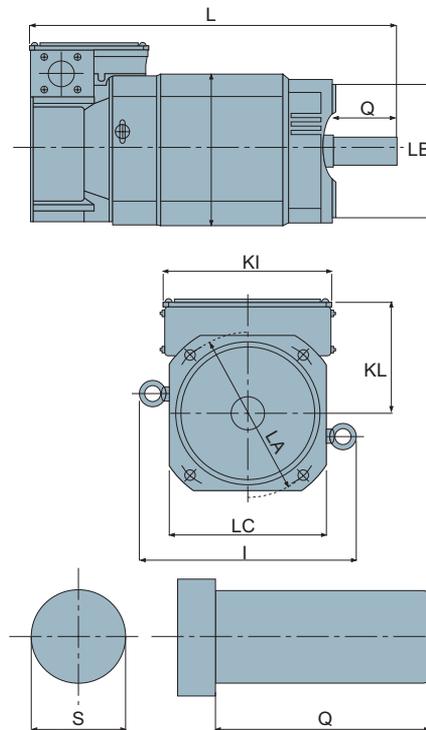
E03 series FM7 spindle motors have forced fan cooling and double winding (star / triangle) The can reach speeds of up to 12,000 rpm and 15,000 rpm.

HS3 series FM7 spindle motors are directly mounting motors and are especially designed to be mounted on the column for direct transmission without pulleys. They have forced fan cooling, double winding (star / triangle) and can reach speeds of up to 12,000 rpm and 15,000 rpm.

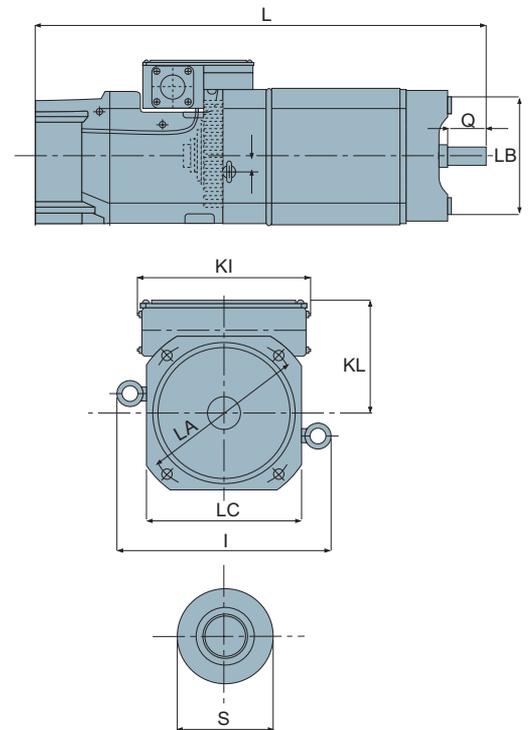
The tool is secured with a coupling and they have a hole on the shaft for tool cooling.

MODEL	L	LA	LB	LC	I	KL	KI	Shaft	
								Q	S
FM7-D055-S1D0-E03	475	215	180 h7	204	270	158	204	60	28 h6
FM7-D075-S1D0-E03	506	215	180 h7	204	270	164	250	60	28 h6
FM7-D110-S1D0-E03	556	265	230 h7	250	343	183	279	80	38 h6
FM7-D150-S1D0-E03	556	265	230 h7	250	343	183	279	80	38 h6
FM7-D185-S1D0-E03	618	265	230 h7	250	343	183	279	80	38 h6
FM7-D220-S1D0-E03	665	265	230 h7	250	343	183	279	80	38 h6
FM7-D075-S1D0-HS3	715	215	180 h7	204	271	158	250	60	28 h6
FM7-D110-S1D0-HS3	751	265	230 h7	250	343	183	279	70	38 h6
FM7-D185-S1D0-HS3	813	265	230 h7	250	343	183	279	70	38 h6
FM7-D220-S1D0-HS3	851	265	230 h7	250	343	183	279	70	38 h6

E03 Series



HS3 Series



FM7 motors characteristics- E03 and HS3 series

MODEL	Rated Power S1 (KW)	Rated Power S6, 40% (KW)		Rated Torque S1 (Nm)		Rated current (Arms)		Rated Speed (rpm)		Maximum Speed E01(rpm)	Inertia (Kg.cm2)	Weight (Kg)	Spindle Modular Drive
		Star	Triangle	Star	Triangle	Star	Triangle	Star	Triangle				
FM7 - D055-S1D0-E03	5.5	7.7	10.0	35.0	13.1	20.3	20.7	1500	4000	15.000	210	67	SPD 1.35
FM7 - D075-S1D0-E03	7.5	11.0	13.0	47.7	17.9	26.5	25.8	1500	4000	15.000	260	74	SPD 2.50
FM7 - D110-S1D0-E03	11.0	15.5	20.0	70.0	26.3	38.0	40.0	1500	4000	12.000	690	110	SPD 2.75
FM7 - D150-S1D0-E03	15.0	22.0	26.0	95.5	35.8	46.4	45.7	1500	4000	12.000	690	110	SPD 2.85
FM7 - D185-S1D0-E03	18.5	26.0	32.0	117.8	44.2	49.2	49.2	1500	4000	12.000	890	135	SPD 2.85
FM7 - D220-S1D0-E03	22.0	33.0	40.0	140.1	52.5	62.3	61.7	1500	4000	12.000	1080	150	SPD 3.100
FM7 - D075-S1D0-HS3	7.5	11.0	13.0	47.7	17.9	26.5	25.8	1500	4000	15.000	260	77	SPD 2.50
FM7 - D110-S1D0-HS3	11.0	15.5	20.0	70.0	26.3	38.0	40.0	1500	4000	12.000	690	115	SPD 2.75
FM7 - D185-S1D0-HS3	18.5	26.0	32.0	117.8	44.2	49.2	49.2	1500	4000	12.000	890	140	SPD 2.85
FM7 - D220-S1D0-HS3	22.0	33.0	40.0	140.1	52.5	62.3	61.7	1500	4000	12.000	1080	155	SPD 3.100

Synchronous AC motors

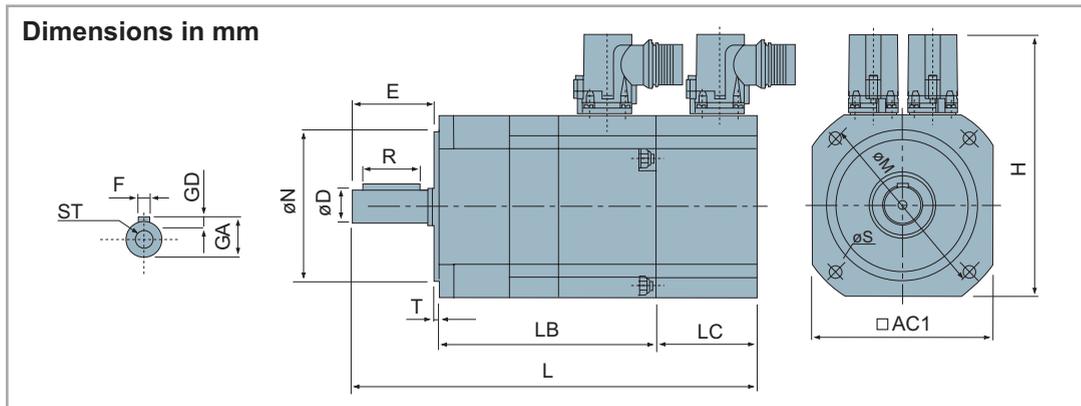
To control axes in machine-tool applications

MODEL	Stall torque (Nm)	Peak torque (Nm)	Rated speed (rpm)	Stall current (Arms)	Peak current (Arms)	Inertia (Kg.cm ²)	Weight (Kg)
FKM 21.60 A	1.7	7	6000	2.8	11	1.6	4.2
FKM 22.30 A	3.2	13	3000	2.4	10	2.9	5.3
FKM 22.50 A	3.2	13	5000	4.0	16	2.9	5.3
FKM 42.30 A	6.3	25	3000	4.6	19	8.5	7.8
FKM 42.45 A	6.3	25	4500	6.9	28	8.5	7.8
FKM 44.30 A	11.6	47	3000	8.2	33	16.7	11.7
FKM 44.40 A	11.6	47	4000	10.7	43	16.7	11.7
FKM 62.30 A	8.9	35	3000	7.1	28	16	11.9
FKM 62.40 A	8.9	35	4000	9.3	37	16	11.9
FKM 64.30 A	16.5	66	3000	12.1	48	29.5	17.1
FKM 64.40 A	16.5	66	4000	16.2	64	29.5	17.1
FKM 66.30 A	23.5	94	3000	16.4	66	43	22.3

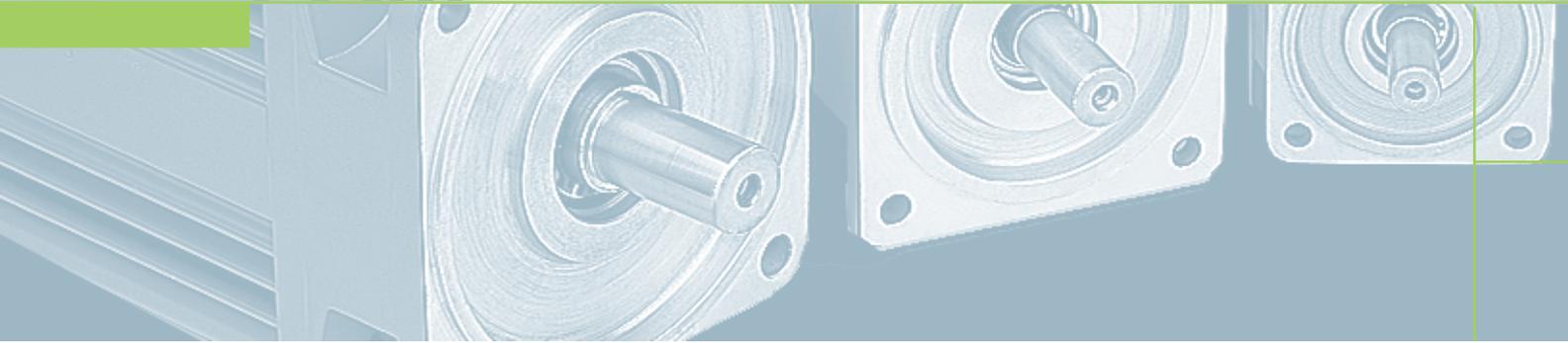
General characteristics

Temperature sensor	▪ Thermistor PTC KTY-84	
Balancing (halfkey)	▪ Standard: Class N	▪ Optional: Class R
Mounting	▪ Front flange	▪ B5-V1-V3
Electrical isolation	▪ Class F (150°C - 302°F)	
Degree of protection	▪ Standard: IP64	▪ Optional: IP 65 with seal
Brake	▪ Optional on all models	
Feedback	▪ Sinusoidal encoder or resolver	

Dimensions in mm



MODEL	L	E	LB	LC	T	AC1	M	N	H	S	D	GA	GD	F	R	ST
FKM 21	208	40	114	54	3	97	100	80 j6	139.5	7	19 j6	21.5	6	6	30	M6x16
FKM 22	232		138													
FKM 42	247	50	143	54	3.5	126	130	110 j6	168.5	9	24 j6	27	7	8	40	M8x19
FKM 44	289		185													
FKM 62	260	58	148	54	3.5	158	165	130 j6	200.5	12	32 k6	35	8	10	50	M10x22
FKM 64	296		184													
FKM 66	332		220													



Synchronous AC motors

To control axes in machine-tool applications

There are motors of 1200, 2000, 3000 and 4000 rpm and size 5 and size 7 motors offer the option of being electro-ventilated.

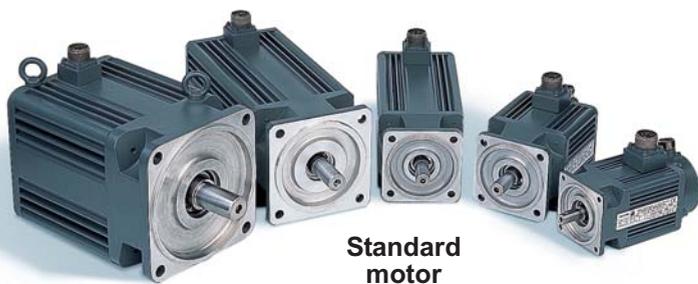
MODEL	Stall torque (Nm)	Peak torque (Nm)	Stall current (Arms) / Peak current (Arms)				Inertia (Kg.cm ²)	Weight (Kg)
			1200 rpm.	2000 rpm.	3000 rpm.	4000 rpm.		
FXM 11	1.2	6		0.45/2.2	0.67/3.4	0.90/4.5	1.2	3.3
FXM 12	2.3	11		0.86/4.1	1.29/6.2	1.72/8.2	1.9	4.3
FXM 13	3.3	16		1.23/6	1.85/9	2.50/12	2.6	6.4
FXM 14	4.1	20		1.5/7.5	2.30/11.2	2.10/15.0	3.3	7.6
FXM 31	2.6	13		0.97/4.8	1.45/7.3	1.92/9.6	3.5	5.5
FXM 32	5.1	25		1.89/9.2	2.80/14.0	3.80/18.5	6	7.5
FXM 33	7.3	36		2.70/13.4	4.10/20.0	5.50/27.0	8.5	9.6
FXM 34	9.3	46		3.40/17	5.10/25	6.90/34	11	11.5
FXM 53**	11.9(17.8)*	59	2.80(4.2)*/14	4.70(7.0)*/23	7.10(10.6)*/35	9.30(14.0)*/46	22	15.8 (20)*
FXM 54**	14.8(22.2)*	74	3.50(5.3)*/17.6	5.90(8.9)*/30.0	8.70(13.1)*/44.0	11.80(17.7)*/59.0	29	17.8 (22)*
FXM 55**	17.3(25.9)*	86	4.1(6.1)*/20	6.7(10.1)*/33	10.3(15.4)*/51	14.1(21.1)*/70	36	20 (24.2)*
FXM 73**	20.8(31.2)*	104	4.9(7.4)*/25	8.2(12.3)*/41	12.3(18.5)*/62	16.5(24.7)*/82	61	29 (33.2)*
FXM 74**	27.3(40.9)*	135	6.6(9.8)*/32	11.1(16.5)*/55	16.2(24.3)*/80	22.1(33.1)*/109	79	31.6 (35.8)*
FXM 75**	33.6(50.4)*	165	8(12.0)*/39	13.3(20.0)*/65	19.9(29.9)*/98	26.6(39.9)*/131	97	36 (40.2)*
FXM 76**	39.7(59.5)*	195	9.4(14.1)*/46	15.7(23.5)*/77	23.6(35.3)*/116	32.1(48.2)*/158	115	40 (44.2)*
FXM 77**	45.6(68.4)*	225	11.0(16.6)*/55	17.8(26.8)*/88	29.0(43.5)*/143	36.6(55.0)*/181	133	43 (47.2)*
FXM 78**	51.1(76.6)*	255	12.6(19.0)*/63	20.7(31.0)*/103	28.4(42.6)*/142	42.7(63.9)*/213	151	47 (51.2)*

(*) Values of the electro-ventilated motors in parenthesis.

(**) Motor sizes 5 and 7 can provide about 50% higher torque with their optional electro-ventilation.

General characteristics

Balancing (whole key)	■ Standard: Class N	■ Optional: Class R
Mounting	■ Front flange	■ B5-V1-V3
Electrical isolation	■ Class F (150°C - 302°F)	
Overall degree of protection	■ Standard: IP64	■ Optional: IP54 with fan
Degree of protection of the axis	■ Standard: IP64	■ Optional: IP65 with seal
Fan	■ Optional on models FXM 5... and FXM 7...	
Brake	■ Optional on all models	
Feedback	■ Sinusoidal encoder or resolver	



Standard motor



Electro-ventilated motor

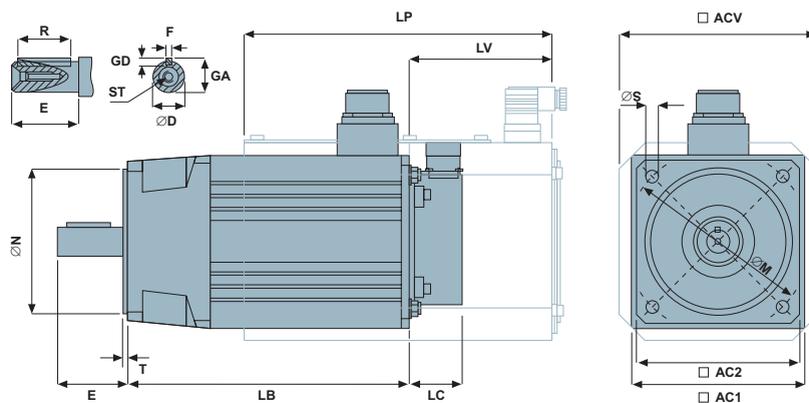
Dimensions in mm

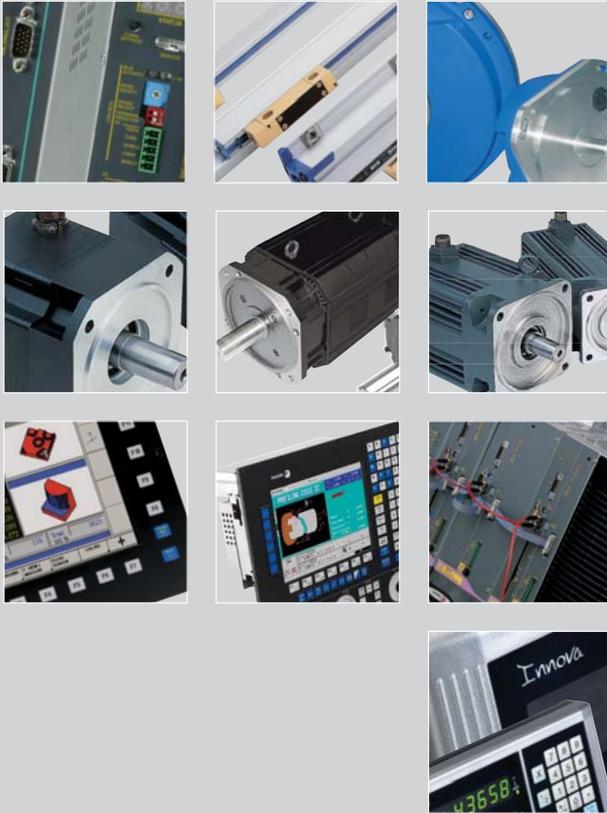
MODEL	E	LB	BR (1)	T	AC1	AC2	M	N	S	D	GA	GD	F	R	ST	LP (2)	LV (2)	ACV (2)
FXM 11	30	136	25	3	86	86	100	80 J6	7	14 J6	16	5	5	20	M5X12.5			
FXM 12		171																
FXM 13		206																
FXM 14		241																
FXM 31	40	152	23	3	114	105	115	95 J6	10	19 J6	21.5	6	6	30	M6X16			
FXM 32		187																
FXM 33		222																
FXM 34		257																
FXM 53	50	237	28	3.5	145	145	165	130 J6	12	24 J6	27	7	8	40	M8X19	259	128	165
FXM 54		272																
FXM 55		307																
FXM 73	58	256	41	4	185	185	215	180 J6	15	32 K6	35	8	10	50	M10X22	303	128	205
FXM 74		291																
FXM 75		326																
FXM 76		361																
FXM 77		396																
FXM 78	431																	

	LC
Resolver	33.5
Encoder	46

(1). Add BR to the LB dimensions for motors with a brake.

(2). Only on electro-ventilated models.





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ER-073/1994
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