



# AC SERVO MOTOR -FKM-

**ORDERING HANDBOOK**

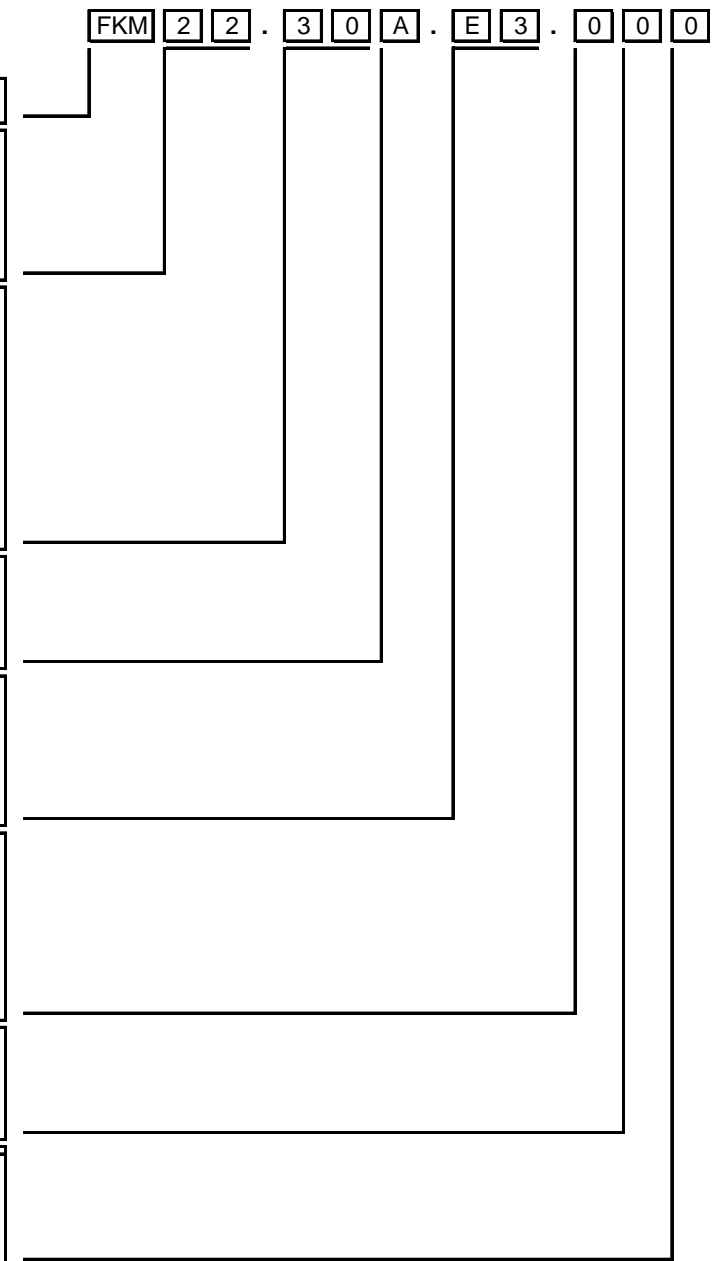


Ref. 0712

# Denominations

FKM 2 2 . 3 0 A . E 3 . 0 0 0

FAGOR FKM Motor		FKM
Model		
	21	22
	42	44
62	64	66
Maximum Speed		
2000 rpm		20
3000 rpm		30
4000 rpm		40
4500 rpm		45
5000 rpm		50
6000 rpm		60
Winding		
400 Vac		A
220 Vac		F
Feedback Tipe		
Absolute Sincos Encoder		A3
Sinusoidal Sincos Encoder		E3
Square Encoder		I0
Shaft		
Shaft with standard keyway		0
Keyless shaft		1
Shaft with standard keyway and seal		2
Keyless shaft and seal		3
Brake option		
Without brake		0
With brake		1
Connection		
Rotating angled connectors		0
Cable exit without connectors (not available)		1



## Models and Characteristics

Motor model (400 V AC)	n <sub>N</sub> rpm	M <sub>O</sub> Nm	M <sub>N</sub> Nm	I <sub>O</sub> A <sub>rms</sub>	P <sub>cal</sub> kW	Power cable Nr of wires x mm <sup>2</sup>	Power cable with brake option
FKM 22.30A.xx.xxx	3000	3.2	2.6	2.4	1	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 42.30A.xx.xxx	3000	6.3	4.6	4.6	1.9	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 44.30A.xx.xxx	3000	11.6	7.5	8.2	3.6	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 62.30A.xx.xxx	3000	8.9	7.3	7.1	2.8	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 64.30A.xx.xxx	3000	16.5	11.4	12.1	5.2	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 66.30A.xx.xxx	3000	23.5	12.0	16.4	7.4	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 44.40A.xx.xxx	4000	11.6	4.8	10.7	4.9	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 62.40A.xx.xxx	4000	8.9	6.9	9.3	3.7	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 64.40A.xx.xxx	4000	16.5	6.5	16.2	6.9	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 42.45A.xx.xxx	4500	6.3	3.5	6.9	2.9	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 22.50A.xx.xxx	5000	3.2	2.0	4.0	1.7	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 21.60A.xx.xxx	6000	1.7	0.8	2.8	1.1	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)

Motor model (220 V AC)	n <sub>N</sub> rpm	M <sub>O</sub> Nm	M <sub>N</sub> Nm	I <sub>O</sub> A <sub>rms</sub>	P <sub>cal</sub> kW	Power cable Nr of wires x mm <sup>2</sup>	Power cable with brake option
FKM 64.20F.xx.xxx	2000	16.5	13.7	14.3	3.4	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 22.30F.xx.xxx	3000	3.2	2.5	4.5	1	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 42.30F.xx.xxx	3000	6.3	4.6	8.5	1.9	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 44.30F.xx.xxx	3000	11.6	7.4	15.6	3.6	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 62.30F.xx.xxx	3000	8.9	11.4	13.1	2.8	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 42.45F.xx.xxx	4500	6.3	3.2	12.4	2.9	MPC - 4 x 2.5	MPC - 4 x 2.5 + (2x1)
FKM 22.50F.xx.xxx	5000	3.2	1.9	7.2	1.7	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)
FKM 21.60F.xx.xxx	6000	1.7	0.8	4.7	1.1	MPC - 4 x 1.5	MPC - 4 x 1.5 + (2x1)

## Recommended Motor - Drive Combination

The drive selecting procedure always depends on the application.

- The rated current of the drive must be higher than the rated current of the motor.
- If the application is going to demand from the motor a rated duty cycle or lower than 100%, it will suffice to have the drive provide the rated torque of the motor.
- Usually, in particular moments and during very short periods of time, a higher torque than the rated value is required (for example during a rapid approach in G00). In these cases, a drive must be selected whose peak torque is between 2 and 3 times the rated torque motor.
- The peak torque that the drive can provide must never exceed the peak torque of the motor. When this occurs, the peak torque of the drive must be limited.

The peak torque (Mp) to be provided by the drive is = Kt of the motor x peak current (Ip) of the drive, where Kt of the motor = Peak torque (Mp) of the motor / Peak current (Ip) of the motor.

Motor model (400 Vac)	Stal torque [Nm]	Peak torque [Nm]	Rated speed [RPM]	Stall current [Arms]	Peak current [Arms]	AXD							ACSD / MCS				
						1.08	1.15	1.25	1.35	2.50	2.75	3.100	3.150	04H	08H	16H	
						I nom. Amp.	4	7,5	12,5	17,5	23,5	31,5	50	62	2	4	8
						I peak (0.5 sec.) Amp.	8	15	25	35	47	63	100	124	4	8	16

Motor model (400 Vac)	Stal torque [Nm]	Peak torque [Nm]	Rated speed [RPM]	Stall current [Arms]	Peak current [Arms]	Drive Mp / Motor Mo												
						AXD							ACSD / MCS					
						1.08	1.15	1.25	1.35	2.50	2.75	3.100	3.100	04H	08H	16H		
FKM 22.30 A	3,2	13	3.000	2,4	10	3,25											3,25	
FKM 42.30 A	6,3	25	3.000	4,6	19		3,13											3,34
FKM 44.30 A	11,6	47	3.000	8,2	33			3,07										1,96
FKM 62.30 A	8,9	35	3.000	7,1	28		2,11	3,51										2,25
FKM 64.30 A	16,5	66	3.000	12,1	48			2,08	2,92	3,92								
FKM 66.30 A	23,5	94	3.000	16,4	66				2,12	2,85	3,82							
FKM 44.40 A	11,6	47	4.000	10,7	43			2,36	3,30									
FKM 62.40 A	8,9	35	4.000	9,3	37			2,56	3,72									
FKM 64.40 A	16,5	66	4.000	16,2	64				2,19	2,94	3,94							
FKM 42.45 A	6,3	25	4.500	6,9	28			2,13	3,54									2,27
FKM 22.50 A	3,2	13	5.000	4	16		2,03	3,81									2,03	4,06
FKM 21.60 A	1,7	7	6.000	2,8	11		2,99										2,99	

**AC Servo Motors FKM**

	ACSD / MCS			
	05L	10L	20L	30L
I nom. Amp.	2,5	5	10	15
I peak (0.5 sec.) Amp.	5	10	20	30

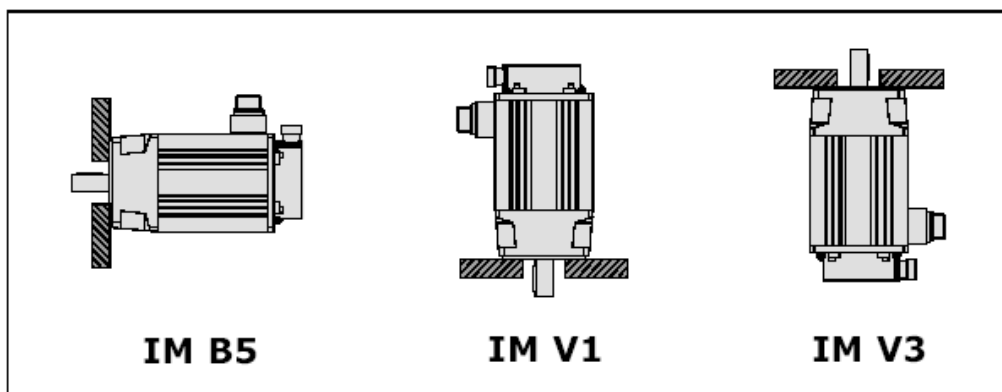
Motor model (220 Vac)	Stal torque [Nm]	Peak torque [Nm]	Rated speed [RPM]	Stall current [Arms]	Peak current [Arms]	Drive Mp / Motor Mo			
						ACSD / MCS			
						05L	10L	20L	30L
FKM 64.20 F	16,5	66	2.000	14,3	57				2,11
FKM 22.30 F	3,2	13	3.000	4,5	18		2,26		
FKM 42.30 F	6,3	25	3.000	8,5	34			2,33	3,50
FKM 44.30 F	11,6	47	3.000	15,6	62				1,96
FKM 62.30 F	8,9	35	3.000	13,1	52				2,27
FKM 42.45 F	6,3	25	4.500	12,4	50				2,38
FKM 22.50 F	3,2	13	5.000	7,2	29			2,80	
FKM 21.60 F	1,7	7	6.000	4,7	19		2,17		

**Encoder - Drive Cable.**

5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
EEC-5	EEC-10	EEC-15	EEC-20	EEC-25	EEC-30	EEC-35	EEC-40	EEC-45	EEC-50
EEC-SP-5	EEC-SP-10	EEC-SP-15	EEC-SP-20	EEC-SP-25	EEC-SP-30	EEC-SP-35	EEC-SP-40	EEC-SP-45	EEC-SP-50
IECD-5	IECD-10	IECD-15	IECD-20	IECD-25					
REC-5	REC-10	REC-15	REC-20	REC-25					

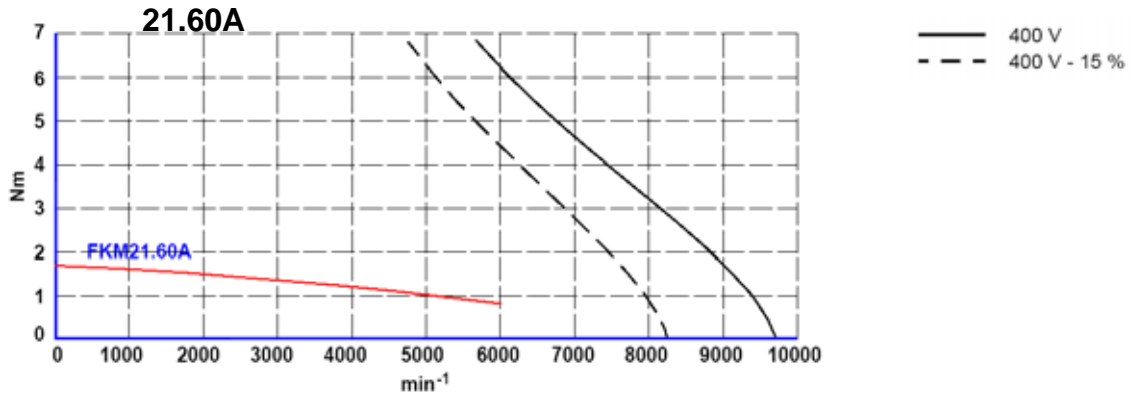
The EEC-FM7 and EEC-SP cables are indicated for A2 and E3 encoders.  
 The EEC-SP cables improves more flexibility and system immunity against disturbances.  
 The IECD cables are indicated for I0 encoders  
 The REC cables are indicated for R0 resolvers  
 All connections cables have incorporated the HD SubD connector M26 to connect to the drive.

**Mounting Methods Key**

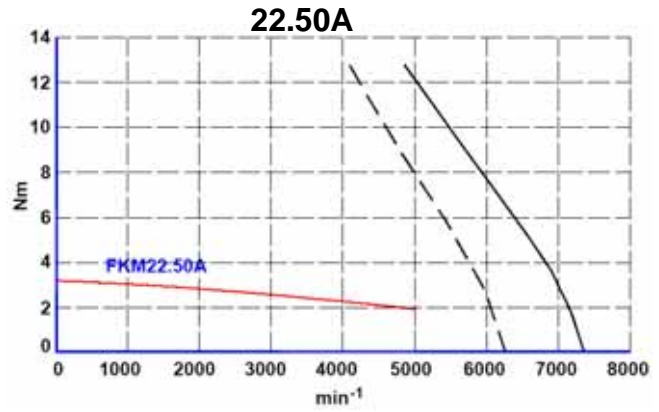
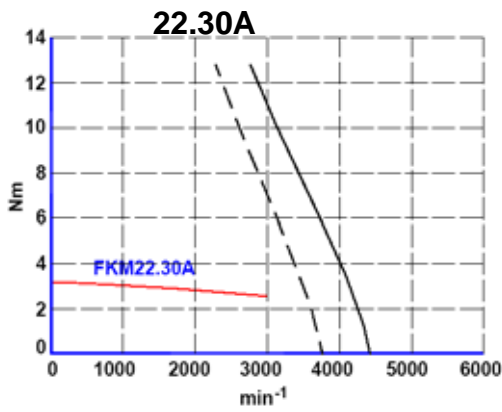


# Torque-Speed Curves. FKM Series at 400 V AC

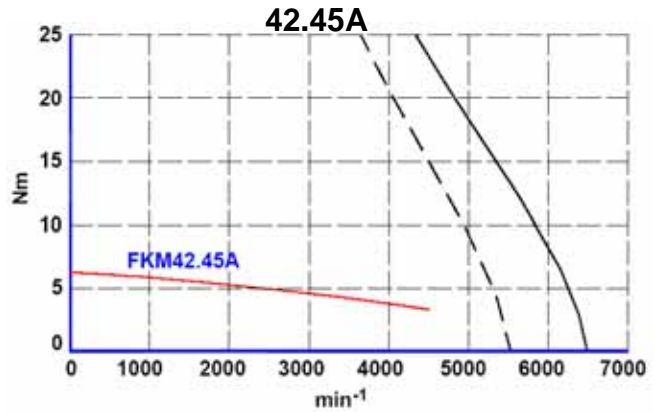
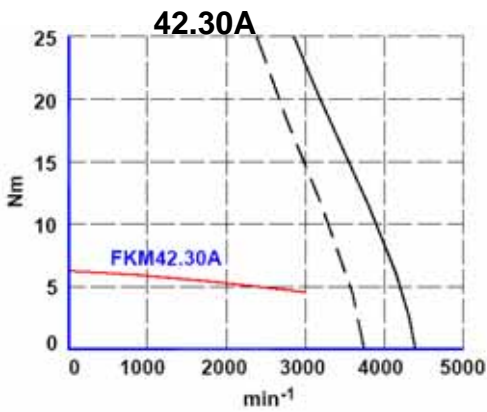
## FKM 21 series



## FKM 22 series

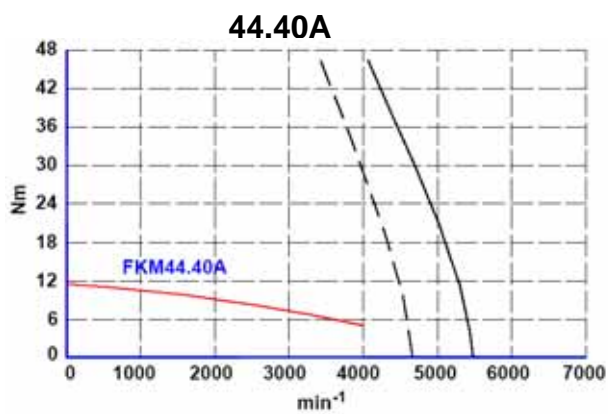
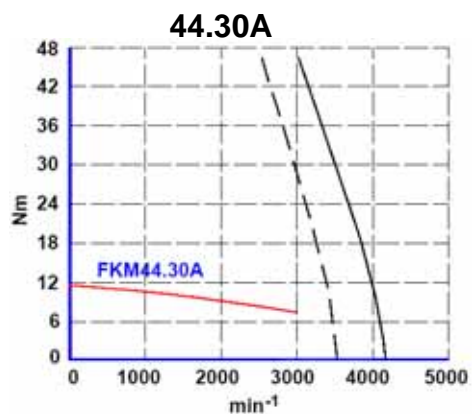


## FKM 42 series

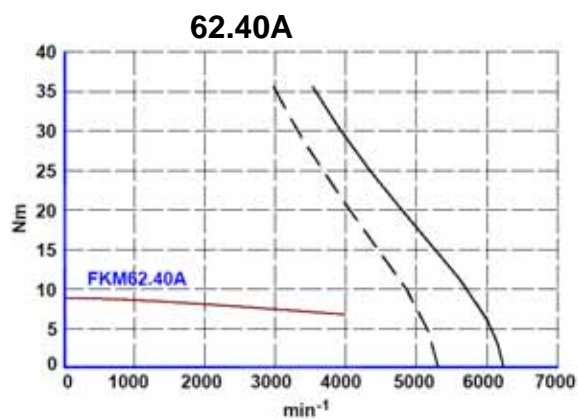
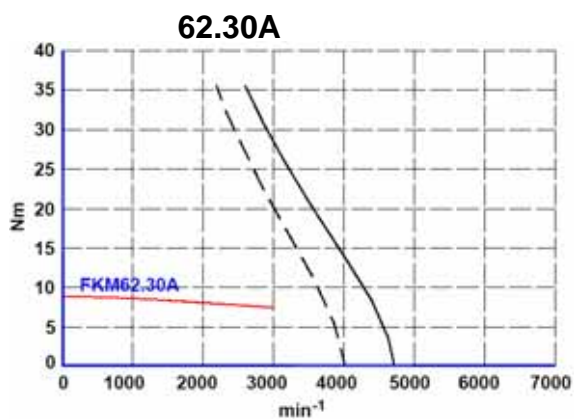


**AC Servo Motors FKM**

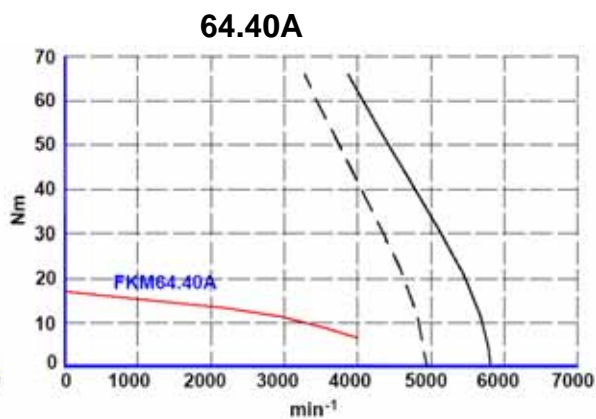
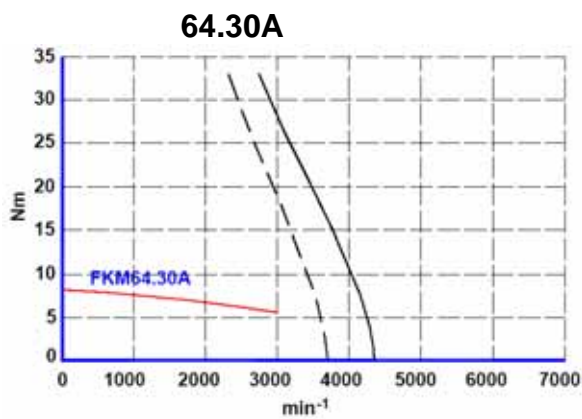
**FKM 44 series**



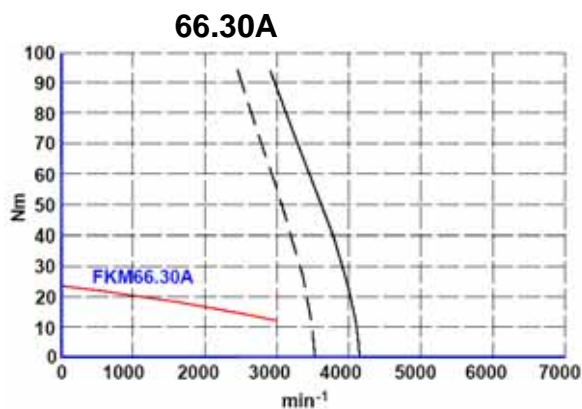
**FKM 62 series**



**FKM 64 series**

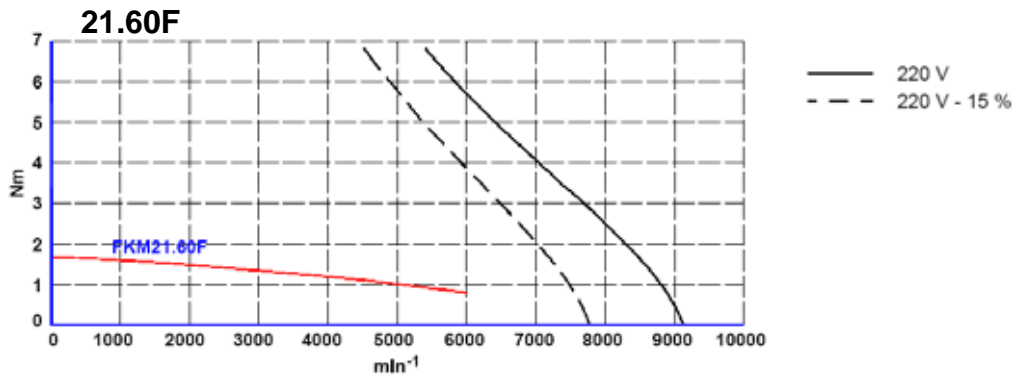


**FKM 66 series**

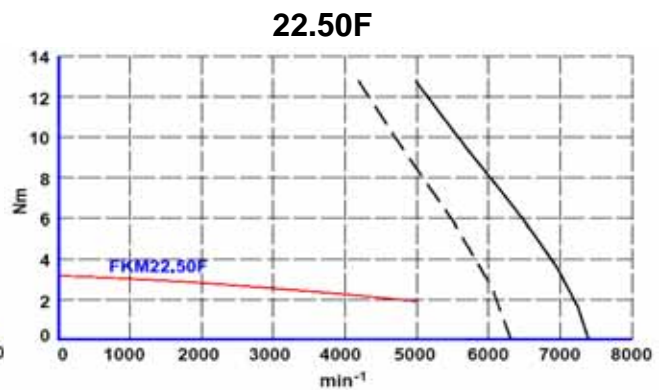
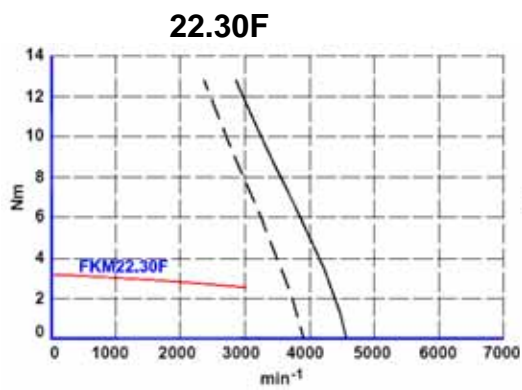


# Torque-Speed Curves. FKM Series at 220 V AC

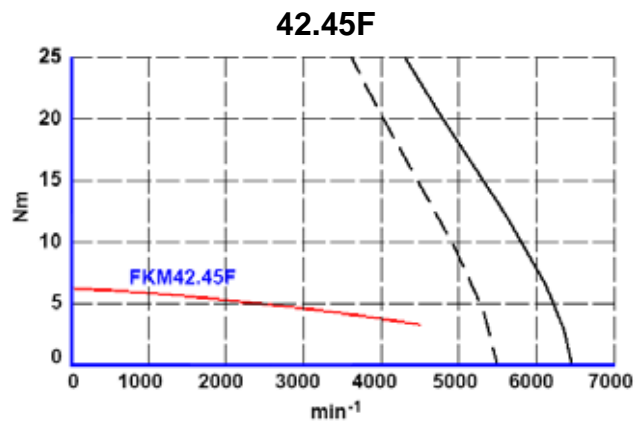
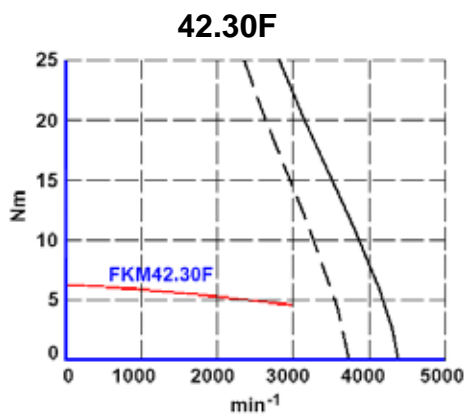
## FKM 21 series



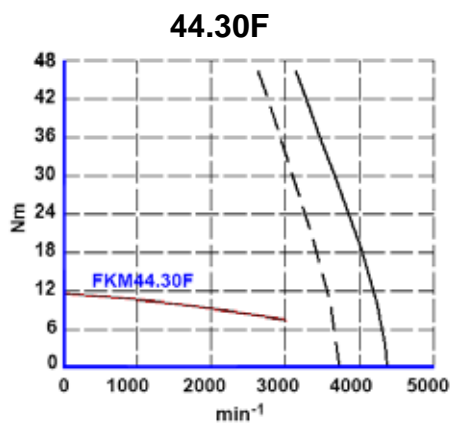
## FKM 22 series



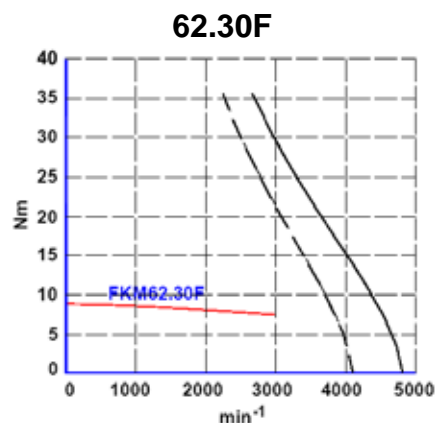
## FKM 42 series



## FKM 44 series

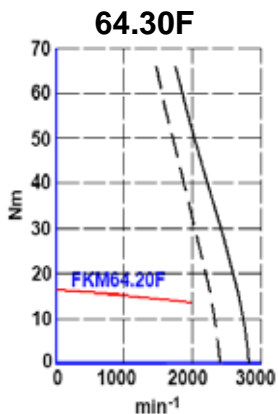


## FKM 62 series

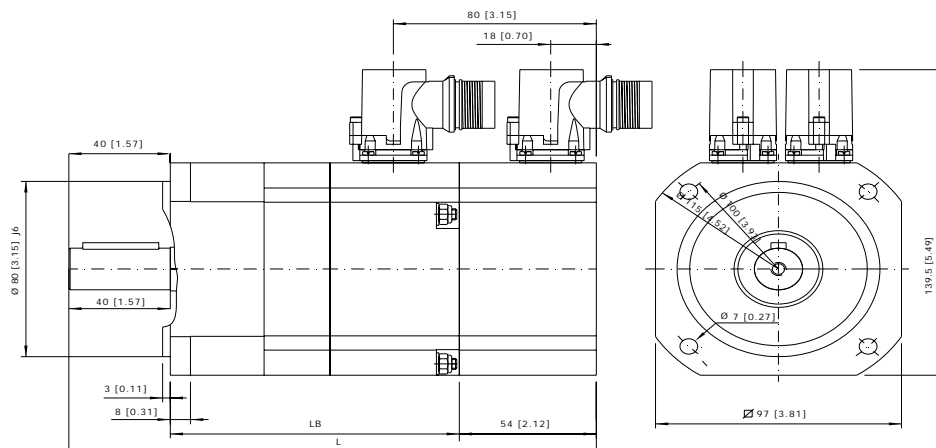


**AC Servo Motors FKM**

**FKM 64 series**

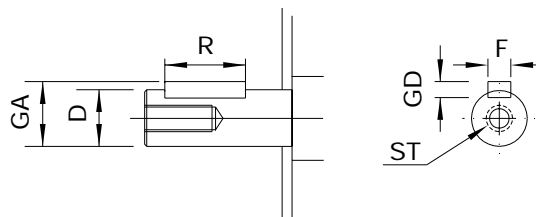


**Dimensions FKM2 Series mm - [inches]**



TIPO	F	GD	R	D	GA	ST
FKM2	6 [0.23]	6 [0.23]	30 [1.18]	19 [0.74] j6	21.5 [0.84]	M6 x 16 [0.63]

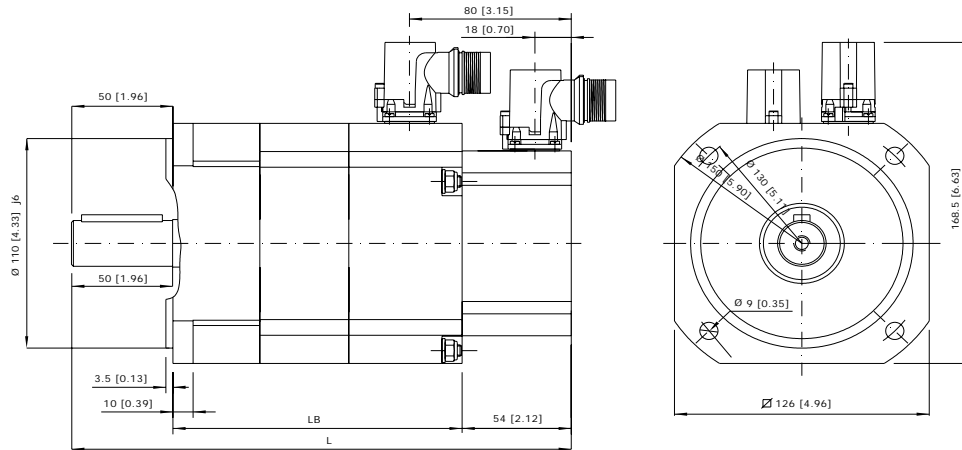
TIPO	LB	L
FKM21	168 [6.61]	208 [8.19]
FKM22	192 [7.55]	232 [9.13]



Having the brake option does not modify the dimensions shows in this drawing.

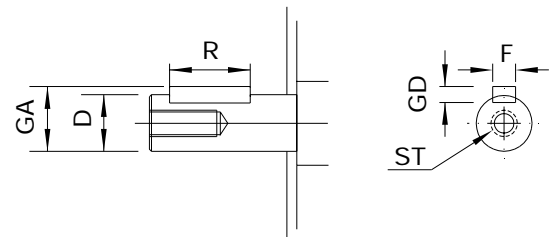


## Dimensions FKM4 Series mm - [inches]



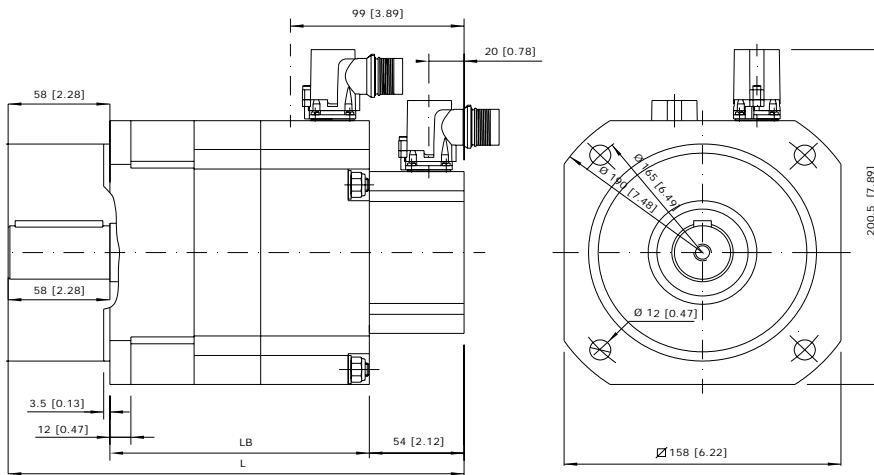
TIPO	F	GD	R	D	GA	ST
FKM4	8 [0.31]	7 [0.27]	40 [1.57]	24 [0.94] j6	27 [1.06]	M8 x 19 [0.75]

TIPO	LB	L
FKM42	197 [7.75]	247 [9.72]
FKM44	239 [9.41]	289 [11.38]



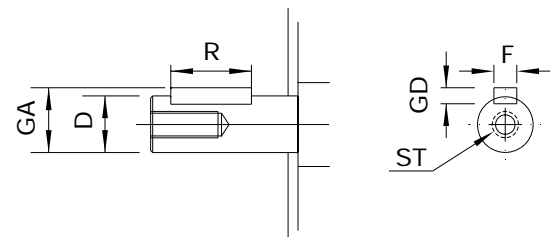
Having the brake option does not modify the dimensions shows in this drawing.

## Dimensions FKM6 Series mm - [inches]



TIPO	F	GD	R	D	GA	ST
FKM6	10 [0.39]	8 [0.31]	50 [1.96]	32 [1.26] k6	35 [1.37]	M10 x 22 [0.86]

TIPO	LB	L
FKM62	202 [7.95]	260 [10.24]
FKM64	238 [9.37]	296 [11.65]



Having the brake option does not modify the dimensions shows in this drawing.