AC BRUSHLESS SERVOMOTORS - MBM4x

MBM4x Brushless Servomotors are AC PM Synchronous servomotors. They have been designed using the latest generation of magnets and construction techniques to provide very high performance, low cogging and torque ripple. They can be supplied with resolver or Incremental / absolute encoder.

Their main characteristics are:

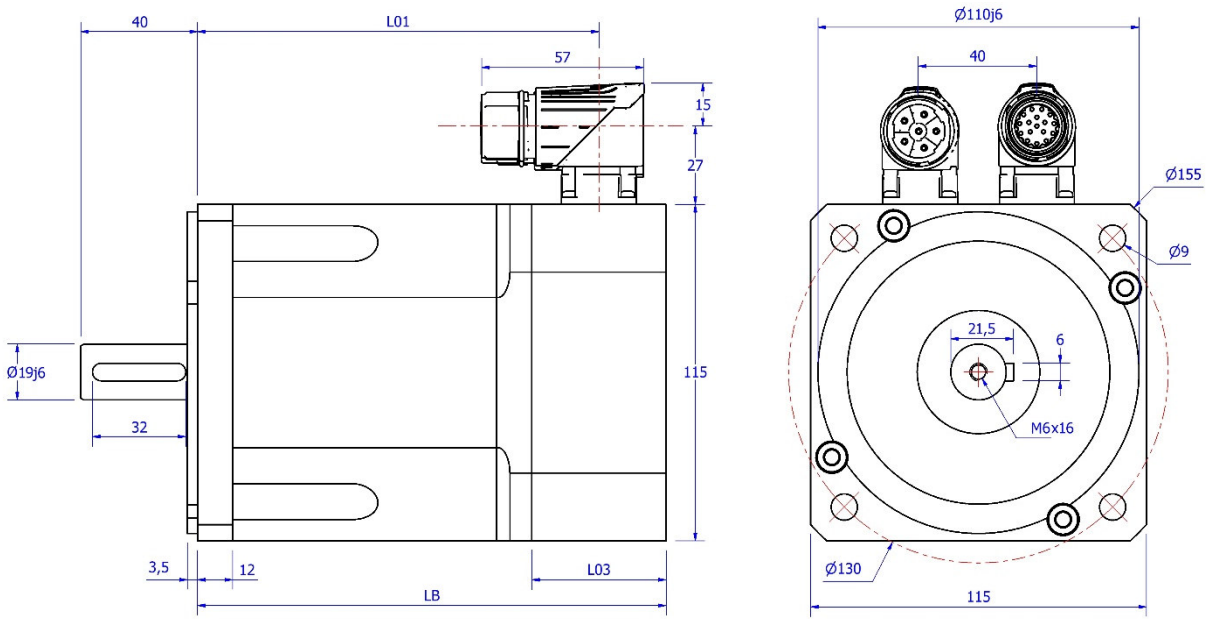
Frame size 115mm
Rare earth magnets for high performance
8 pole construction for high torque density
Low cogging and torque ripple
Sinusoidal back EMF
Integrated PTC thermal protection
Rotatable connectors
Compact design
High IP rating
Smooth finish

Technical Data

Tab. 1

Description / Winding code	Symbol	Motor	MBM41		MBM42		MBM43	
		Units	1	2	1	2	1	2
Stall Torque	M_0	Nm	4		7,6		11,3	
Maximum Torque	Mpk	Nm	13	13	26	26	40	39
Stall Current	I_0	A	4,4	2,5	7,8	4,7	11,9	7
Peak current	I_{pk}	A	18	10	31	19	48	28
Maximum mechanical revs	N_{mec}	min^{-1}	6500		6500		6500	
Maximum revs @ 230Vac	N_{MAX}	min^{-1}	3200	1800	3100	1800	3200	1800
Maximum revs @ 400Vac	N_{MAX}	min^{-1}	6000	3000	5000	3000	5000	3000
Voltage constant	K_E	V/krpm	55	96	59	98	59	98
Torque constant	K_T	Nm/A	0,91	1,59	0,98	1,62	0,98	1,62
Rotor Inertia	J_R	kg cm^2	5		9,6		14	
Resist. @ 20°C	R_{U-V}	Ohm	2,3	6,9	0,95	2,7	0,5	1,5
Induct. @ 1 kHz	L_{U-V}	mH	5,6	16	2,9	7,5	1,6	4,9
Mass	m	kg	5,6		8,5		11,4	

Drawing Pic. 2



Dimensions in mm Tab. 2

Feedback device	EQI1130, TTL 2048ppr, Resolver			SinCos, EKS36		
Dimension	LB	L01	L03	LB	L01	L03
MBM41	146,5	123,5	32	160,5	137,5	46
MBM42	186,5	163,5		200,5	177,5	
MBM43	226,5	203,5		240,5	217,5	
MBM41 Brake	195,5	172,5		209,5	186,5	
MBM42 Brake	235,5	212,5		249,5	226,5	
MBM43 Brake	275,5	232,5		289,5	246,5	

Dimensions in mm Tab. 3

Shaft	Dimension	
D	19j6	24j6
E	40	50
GL	32	32
GA	21,5	27
F	6	8
R	M6 x 16	M8 x 15

Values in this catalogue are true for the following conditions:

Max ambient temperature 40° C
Min ambient temperature 0 °C
Max Altitude 1000 m (above sea level)
Insulation class F (materials F & H)
RMS values
Insulation system conforms to UL
IP65 enclosure protection with shaft seal

Motor Installation B5 – V5
Cooling IC0041
Typical tolerance value ±10%
Continuous ratings apply with a rise of ΔT= 100K on the windings when fitted on an aluminium plate with dimensions 305 x 305 x 15mm

NiLAB reserves the right to amend the specification of this product without prior notification.

PART NUMBER COMPOSITION

1	2	3	4	5	6	7	8	9	10	11	12
M	B	M		4	2	2	0	4	7	x	x

POS. DESCRIPTION

1-3 Product
MBM = PM synchronous motor, self-cooled

4 Blank

5 Motor size
Size Four

6 Motor length
1 = Mo 4 Nm
2 = Mo 7,6 Nm
3 = Mo 11,3 Nm

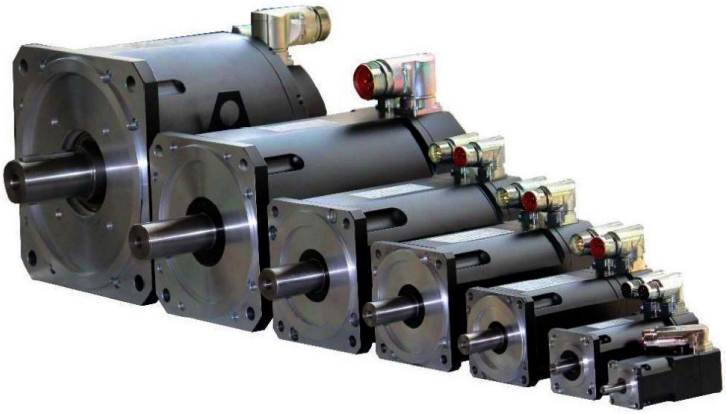
7 Voltage
1 = Winding code 1
2 = Winding code 2

8 Holding brake
0 = Without brake
1 = Permanent Magnet Brake $24V_{DC}$±6% M_{br} =22Nm 18W J_{br} = 3,6 $kgcm^2$ m=1,1kg

9 Feedback
0 = Sensor-less
1 = Heidenhain encoder EQI1130 Endat Multi Turn
4 = Encoder 2048ppr TTL LD + hall sensors
6 = Encoder 4096ppr TTL LD + hall sensors
7 = Encoder 1Vpp + position sin-cos
9 = Resolver size 15 2p 7V 10KHz
W = Sick encoder EKS36 Hiperface DSL single-turn no SIL 17bit
Y = Sick encoder EKM36 Hiperface DSL multi-turn no SIL 17bit
Z = Sick encoder SKM36 Hiperface 128ppr multi-turn

10 Connection type
7 = M23 connectors 90° rotatable

11-12 Special version
24 = Shaft 24 x 50
26 = Shaft without key
66 = IP65 Shaft Protection
90 = Thermal protection PT1000
xx = Special Shaft and Flanges (on request)



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