

AC BRUSHLESS SERVOMOTORS - MBM0x



MBM0 -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.

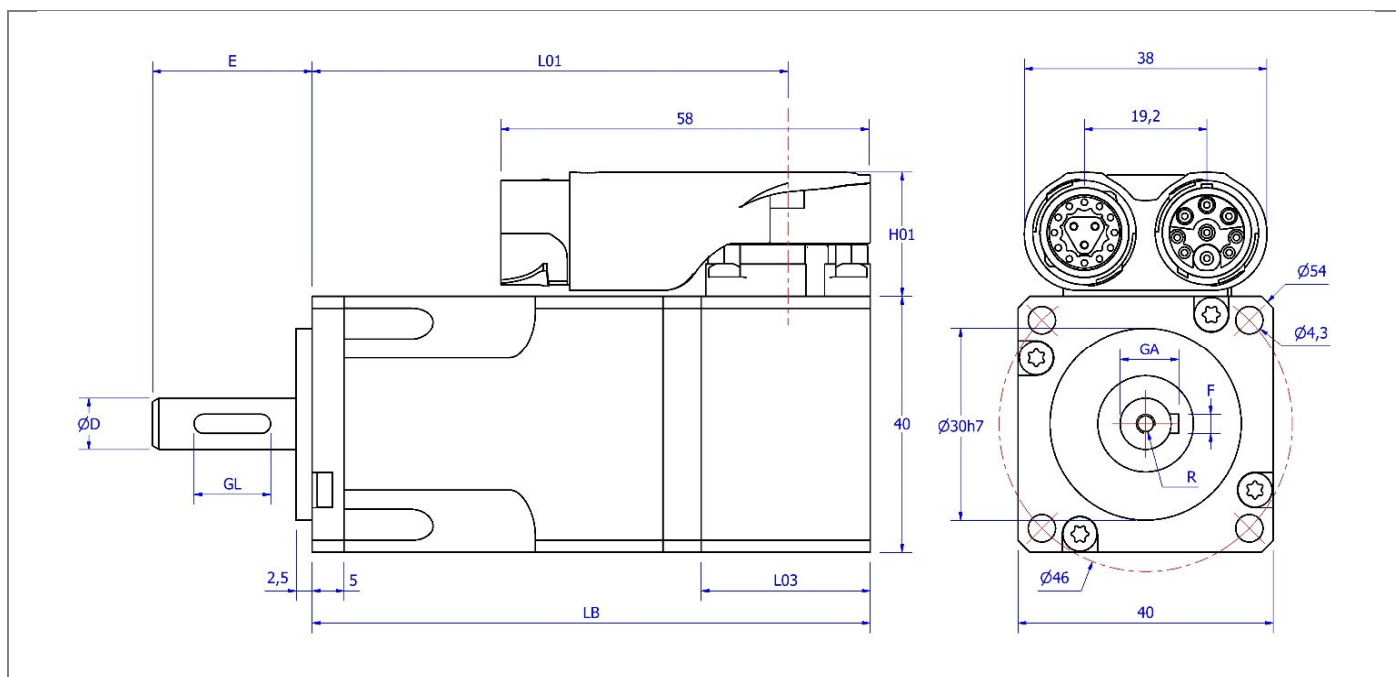
Their main characteristics are:

- Frame size 40mm
- 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	MBM04		MBM05	
		Units	1	3	1	3
Standstill Torque	M_0	Nm	0,19		0,38	
Maximum Torque	M_{pk}	Nm	0,6	0,6	1,3	1,3
Standstill Current	I_0	A	0,78	1,52	1,2	3
Peak current	I_{pk}	A	3,1	6,1	4,8	12
Maximum mechanical revs	N_{mec}	min^{-1}	8500		8500	
Maximum revs @ 230Vac	N_{max}	min^{-1}	8000	-	8000	-
Maximum revs @ 50Vac	N_{max}	min^{-1}	-	3600	-	4100
Voltage constant	K_E	V/krpm	14,7	7,4	19	7,7
Torque constant	K_T	Nm/A	0,25	0,12	0,32	0,13
Rotor Inertia	J_R	kg cm^2	0,037		0,061	
Resistance @ 20°C	R_{U-V}	Ohm	27	6,8	14	2,4
Inductance @ 1 kHz	L_{U-V}	mH	11	2,6	7,9	1,25
Mass	m	kg	0,53		0,68	



Dimensions in mm

Tab. 2

Feedback device	EQI1130				TTL 1024ppr, Resolver				EKS36			
Dimension	LB	L01	L03	H01	LB	L01	L03	H01	LB	L01	L03	H01
MBM04	91	78	30	25,5	87,5	74,5	26,5	19,4	104	91	43	25,5
MBM05	109	96			105,5	92,5			122	109		
MBM04 Brake	123	110			119,5	106,5		25,5	136	123		
MBM05 Brake	141	128			137,5	124,5			154	141		

Dimensions in mm

Tab. 3

Shaft	Dimension
D	8h6
E	25
GL	12
GA	9,2
F	3
R	M3 x 8

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 $\pm 10\%$
 Continuous ratings apply with a rise of $\Delta T = 100K$
 on the windings when fitted on an aluminium
 plate with dimensions 254 x 254 x 8mm

PART NUMBER COMPOSITION

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

POS. DESCRIPTION

1-3 **Product**

DSM= PM synchronous motor, self-cooled

4 Blank

5 **Motor Size**

Size 0

6 **Motor length**

4 = Mo 0,19 Nm

5 = Mo 0,38 Nm

7 **Voltage**

1 = Winding code 1

3 = Winding code 3

8 **Holding brake**

0 = No brake

1 = Permanent Magnet Brake 24VW $M_r=0,4Nm$ - $J=0,019 kgcm^2$ $m=200g$

2 = Spring applied Brake 24VW $M_r=0,3Nm$ - $J=1,14e-3 kgcm^2$ $m=130g$

9 **Feedback**

0 = Sensor-less

1 = Heidenhain encoder EQI1130 absolute multi-turn 12+18 bit EnDat

5 = Magnetic Encoder 1024 ppr LD 5V with Hall sensors

9 = Resolver size 10 2p 7V 10KHz

C = Encoder Biss-C MT at battery cell

W = Sick encoder EKS36 Hiperface DSL Single-turn no SIL 17bit

Y = Sick encoder EKM36 Hiperface DSL Multi-turn no SIL 17bit

10 **Connection type**

B = 90° rotatable connector M15 I-tec single 9 pin (DSL Hiperface)

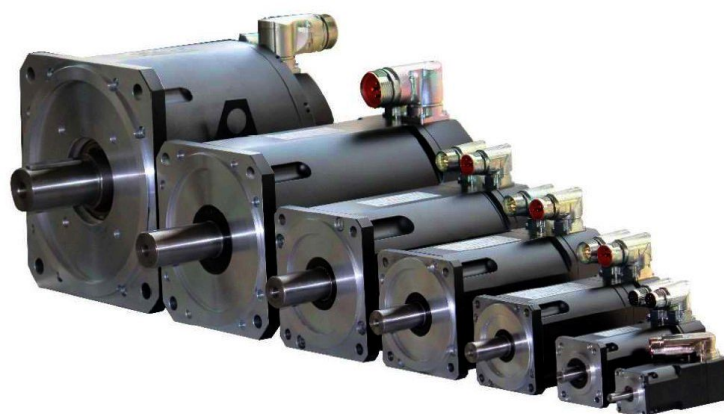
D = 90° rotatable connector M15 Y-tec 9 pin power and 12+3 pin feedback

11-12 **Special version**

66 = IP65 Shaft Protection

90 = Thermal protection PT1000

xx = Special Shaft and Flanges (on request)



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