

AC BRUSHLESS SERVOMOTORS - M5.2x



M5 - Brushless Servomotors are AC PM Synchronous servomotors. They have been designed using 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.

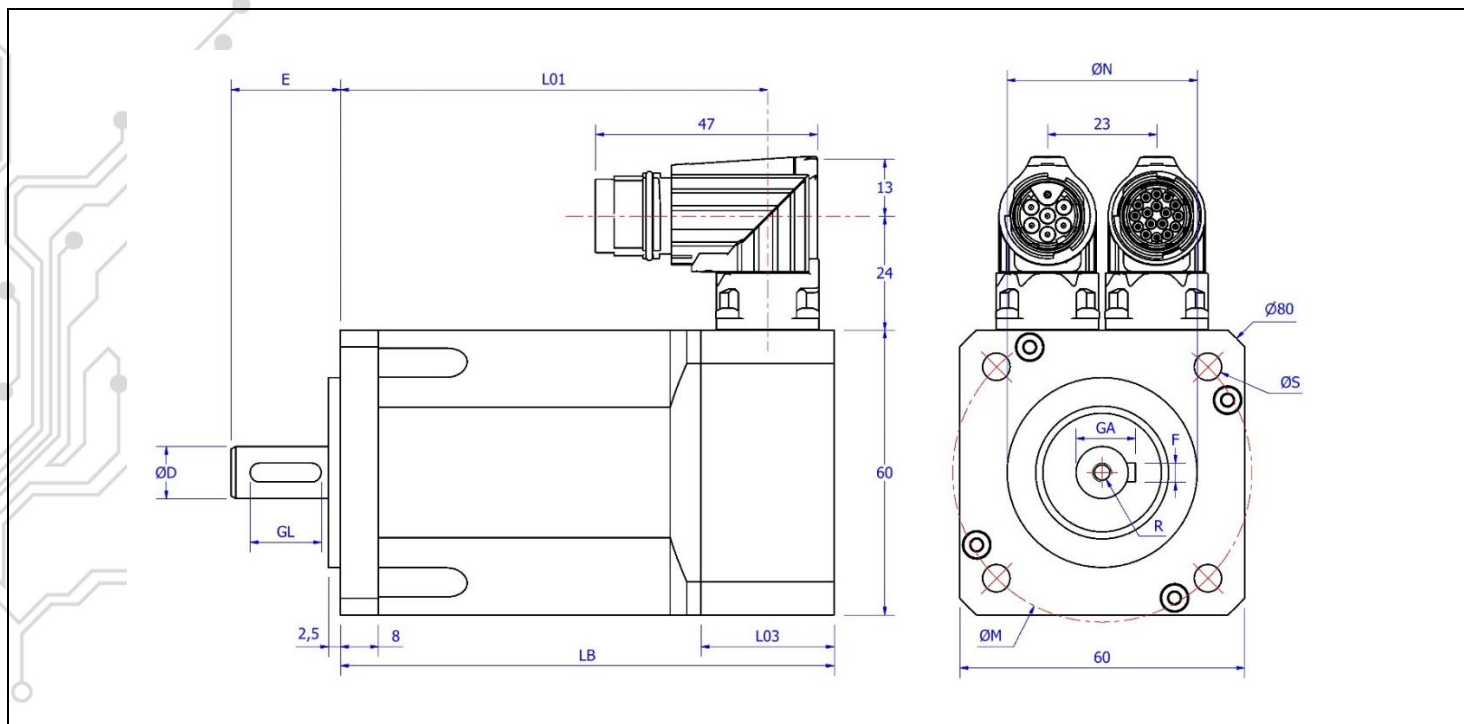
Their main characteristics are:

- Frame size 60mm
- 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 <i>Winding code</i>	Symbol	Motor	M5.21		M5.22	
			UM	1	2	1
Stall Torque	M ₀	Nm	0,7		1,4	
Maximum Torque	M _{pk}	Nm	2,5	2,5	4,7	4,9
Stall Current	I ₀	A	1,6	1	2,8	1,7
Peak current	I _{pk}	A	6,4	4	11	7
Maximum mechanical revs	N _{mec}	min ⁻¹	8500		8500	
Maximum revs @ 230Vac	N _{MAX}	min ⁻¹	6200	3600	6300	3900
Maximum revs @ 400Vac	N _{MAX}	min ⁻¹	8000	6000	8000	6000
Voltage constant	K _E	V/krpm	27	44	30	49
Torque constant	K _T	Nm/A	0,45	0,73	0,5	0,82
Rotor Inertia	J _R	kg cm ²	0,13		0,23	
Resist. @ 20°C	R _{U-V}	Ohm	8,6	23	3,2	8,4
Induct. @ 1 kHz	L _{U-V}	mH	10	27	5,6	13
Mass	m	kg	1,2		1,7	



Dimension in mm

Tab. 2

Feedback device	EQI1130, TTL 2048ppr, Resolver,			EKS36		
Dimension	LB	L01	L03	LB	L01	L03
M5.21	104	90	28	118	104	42
M5.22	132	118		146	132	
M5.21 Brake	134,5	120,4		148,4	134,4	
M5.22 Brake	162,4	148,4		176,4	162,4	

Dimensions in mm

Tab. 3

Flange	40/63	56B14	50/70
N	40j6	50j6	50j6
M	63	65	70
S	5,8	M5	5,5

Dimensions in mm

Tab. 4

Shaft	Dimension		
D	9j6	11j6	14j6
E	20	23	30
GL	12	15	20

Values in this catalogue are true for the following conditions:

- Max Temperature ambient 40° C
- Min temperature ambient 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 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 254 x 254 x 8mm

Producer 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	5	2	2	1	1	4	8	x	x

POS.	DESCRIPTION
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- | | |
|-------|---|
| 1-3 | <p>Product
M= PM synchronous motor, self-cooled</p> |
| 4 | <p>Motor type
Series 5</p> |
| 5 | <p>Motor size
Size Two</p> |
| 6 | <p>Motor length
1 = Mo 0,70 Nm
2 = Mo 1,40 Nm</p> |
| 7 | <p>Voltage
1 = Winding code 1
2 = Winding code 2</p> |
| 8 | <p>Holding brake
0 = Without brake
1 = With holding brake Mb = 2 Nm - 24VDC - 11 W - Jb = 0,1 kgcm² - mb = 0,3 kg</p> |
| 9 | <p>Feedback
0 = Sensor-less
1 = Heidenhain encoder EQI1130 EnDat Multi-turn
4 = Encoder 2048ppr TTL LD + hall sensors
9 = Resolver size 15 2p 7V 10KHz
L = Sick encoder SEL37 Hiperface Multi-turn
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 128i PPT Multi-turn</p> |
| 10 | <p>Connection type
1 = Cable glands
8 = 90° rotatable connectors M17
B = 90° rotatable connector M15 I-tec single 9 pin (DSL Hiperface)</p> |
| 11-12 | <p>Special version
48 = Shaft 14 x 30mm and Flange 50/70mm (spigot/PCD)
62 = Shaft 9 x 20mm
66 = IP65 Shaft Protection
90 = Thermal protection PT1000</p> |



MOTORS & MOTION CONTROL

- **M5 BRUSHLESS SERVOMOTORS**
- **DSG SYNCHRONOUS PM GENERATORS**
- **RARE EARTH SC DC SERVOMOTORS**
- **DSW WATER-COOLED**
- **LOW-COST SOLUTIONS**
- **PLANETARY GEARS**
- **CUSTOMISED SOLUTIONS**
- **TORQUE MOTORS**
- **FRAMELESS SPINDLE MOTORS**



ISD : E220486

