

AC BRUSHLESS SERVOMOTORS - M5.7x



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.

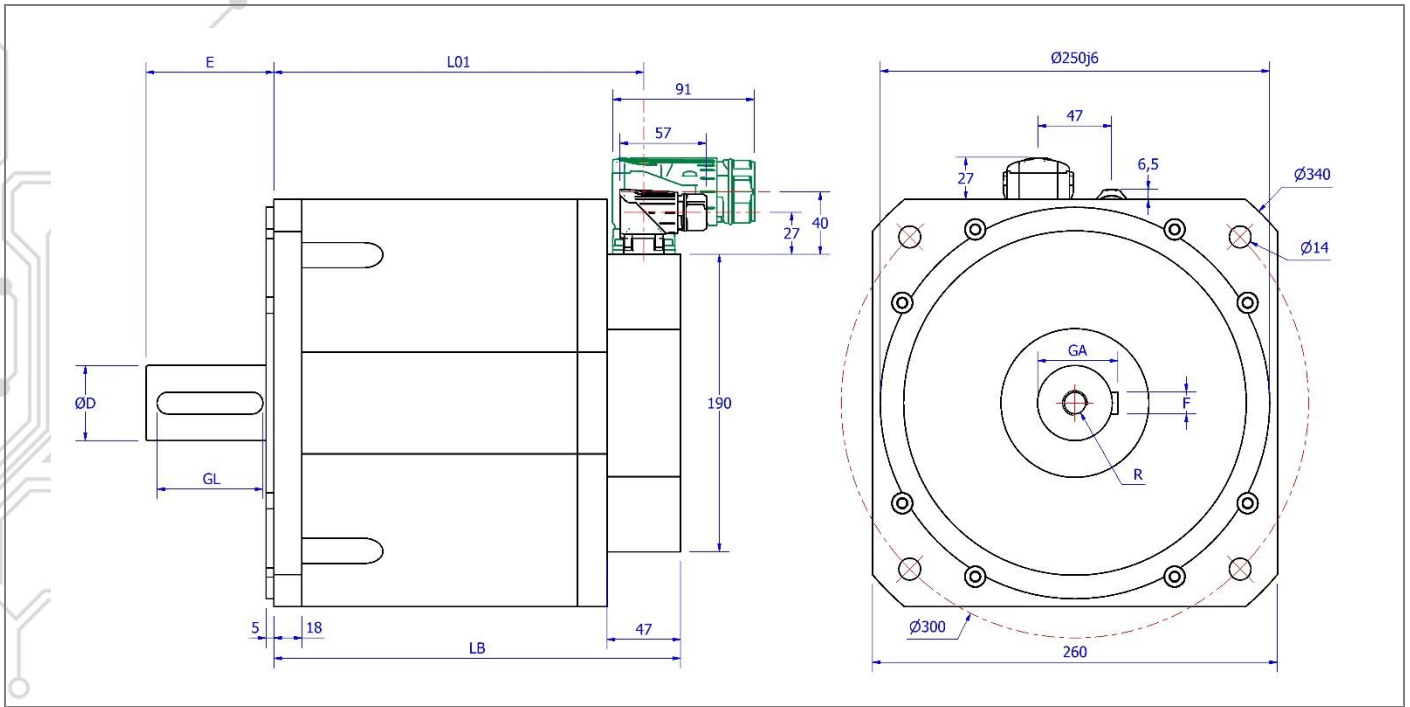
Their main characteristics are:

- Frame size 260mm
- 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	M5.71		M5.72		M5.73	
		UM	1	2	1	2	1	2
Stall Torque	M ₀	Nm	76		145		230	
Maximum Torque	M _{pk}	Nm	210	203	408	399	618	632
Stall Current	I ₀	A	37	25	70	41	104	65
Peak current	I _{pk}	A	111	75	210	123	312	195
Maximum mechanical revs	N _{mec}	min-1	4000		4000		4000	
Maximum revs @ 230Vac	N _{MAX}	min ⁻¹	1500	1000	1500	900	1400	900
Maximum revs @ 400Vac	N _{MAX}	min ⁻¹	2600	1800	2600	1500	2500	1500
Voltage constant	K _E	V/krpm	126	183	126	216	135	216
Torque constant	K _T	Nm/A	2,1	3	2,1	3,6	2,2	3,6
Rotor Inertia	J _R	kg cm ²	484		941		1398	
Resist. @ 20°C	R _{U-V}	Ohm	0,14	0,28	0,05	0,12	0,03	0,08
Induct. @ 1 kHz	L _{U-V}	mH	1,5	3,1	0,8	2,2	0,6	1,5
Mass	m	kg	50		81		112	



Dimensions in mm

Tab. 2

Feedback device	EQI1130, TTL 2048i/g, Resolver, SEL52, SinCos, EKS36		
Dimension	LB	L01	L03
M5.71	261	214	47
M5.72	341	294	
M5.73	421	374	
M5.71 Brake	314	267	
M5.72 Brake	394	347	
M5.73 Brake	474	427	

Dimensions in mm

Tab. 3

Dimension	Shaft
D	48k6
E	82
GL	70
GA	51.5
F	14
R	M16 x 25

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 457 x 457 x 15 mm

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	7	2	2	0	4	9	x	x

POS.	DESCRIPTION
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1-3	Product
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M = PM synchronous motor, self-cooled
 DSF = PM synchronous motor, forced air-cooled
 DSW = PM synchronous motor, water-cooled

4	Motor type
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Series 5

5	Motor size
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Size Seven

6	Motor length
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1 = Mo 76Nm
 2 = Mo 145Nm
 3 = Mo 230Nm

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

8	Holding brake
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0 = Without Brake
 1 = Holding Brake Mb = 120 Nm - 37W - 24VDC PM - Jb = 79 kgcm² - mb = 10 kg

9	Feedback
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0 = Sensor-less
 1 = Heidenhain encoder EQ11130 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
 G = Sick encoder SEL52 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 128ppr multi-turn

10	Connection type
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9 = M40 connector 90° rotatable power, feedback M23

11-12	Special version
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26 = Smooth Shaft
 66 = IP65 Shaft Protection
 90 = Thermal Protection PT1000



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

