

AC BRUSHLESS SERVOMOTORS - M5.8x



M5 - Brushless Servomotors are AC PM Synchronous servomotors with 16 poles. They have been designed using latest generation of magnets and construction techniques to provide very high performance, low cogging and torque ripple. The high number of poles provide very high torque values. The motors can be supplied with resolver or Incremental / absolute encoder.

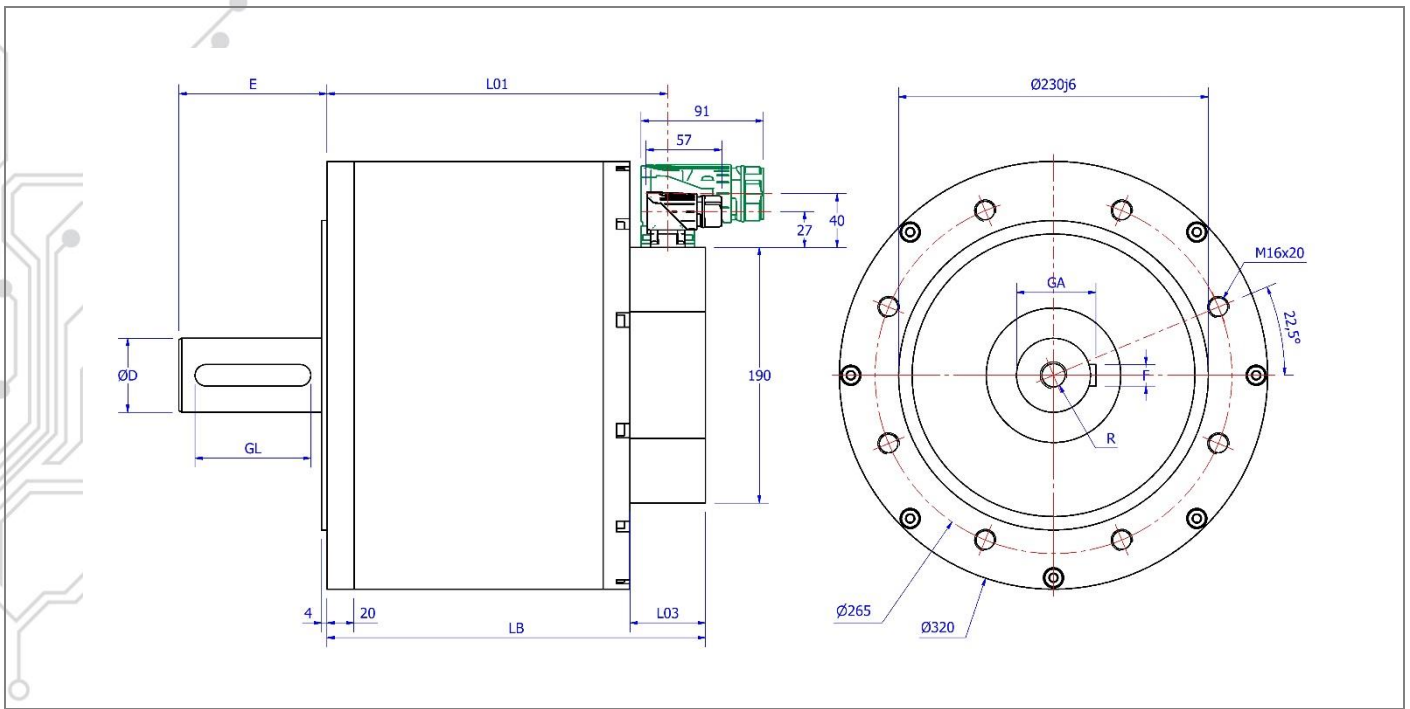
Their main characteristics are:

- Frame size \varnothing 320mm
- Rare earth magnets for high performance
- 16 pole construction for very 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 UM	M5.81		M5.82		M5.83		M5.84	
			1	2	1	2	1	2	1	2
Stall Torque	M_0	Nm	125		220		320		410	
Maximum Torque	M_{pk}	Nm	322	321	657	562	821	824	1042	1056
Stall Current	I_0	A	39	19	46	24	63	33	60	38
Peak current	I_{pk}	A	117	57	138	72	189	100	180	114
Maximum mechanical revs	N_{mec}	min-1	1700		1700		1700		1700	
Maximum revs @ 230Vac	N_{MAX}	min ⁻¹	1000	450	650	300	600	300	500	300
Maximum revs @ 400Vac	N_{MAX}	min ⁻¹	1500	850	1200	600	1100	600	800	500
Voltage constant	K_E	V/krpm	196	401	288	555	309	586	412	658
Torque constant	K_T	Nm/A	3,24	6,63	4,76	9,18	5,11	9,69	6,81	10,9
Rotor Inertia	J_R	kg cm ²	1130		2220		3310		4410	
Resist. @ 20°C	R_{U-V}	Ohm	0,14	0,5	0,1	0,38	0,08	0,26	0,09	0,24
Induct. @ 1 kHz	L_{U-V}	mH	1,4	5,8	1,5	5,4	1,1	4,1	1,5	3,9
Mass	m	kg	70		110		160		210	



Dimensions in mm

Tab. 2

Feedback device	Resolver, SinCos		
Dimension	LB	L01	L03
M5.81	281	253	56
M5.82	356	328	
M5.83	431	403	
M5.84	506	478	
M5.81 Brake	341	283	116
M5.82 Brake	416	358	
M5.83 Brake	491	433	
M5.84 Brake	566	508	

Dimensions in mm

Tab. 3

Shaft	Dimension
D	56k6
E	110
GL	90
GA	59
F	16
R	M20 x 30

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 15mm

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	8	2	2	0	9	9	x	x

POS.	DESCRIPTION
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1-3 **Product**

M = PM synchronous motor, self-cooled
 DSF = PM synchronous motor, forced air-cooled
 DSW = PM synchronous motor, water-cooled

4 **Motor type**

Series 5

5 **Motor size**

Size Eight

6 **Motor length**

1 = Mo 125Nm
 2 = Mo 220Nm
 3 = Mo 320Nm
 4 = Mo 410Nm

7 **Voltage**

1 = Winding code 1
 2 = Winding code 2

8 **Holding brake**

0 = No brake
 1 = Holding Brake Mb = 46 Nm – 40 W - 24VDC PM - Jb = 5 kgcm² - mb = 8 kg

9 **Feedback**

7 = Encoder 2048ppr sin-cos 1Vpp + position
 9 = Resolver size 21 2p 7V 10KHz
 P = Sick absolute encoder SRM50 Hiperface multi-turn

10 **Connection type**

9 = M40 connector 90° rotatable power, feedback M23

11-12 **Special version**

26 = Smooth Shaft
 66 = IP65 shaft output 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

