



AC BRUSHLESS SERVOMOTORS - DSM5.3x



DSM5 - size THREE 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.

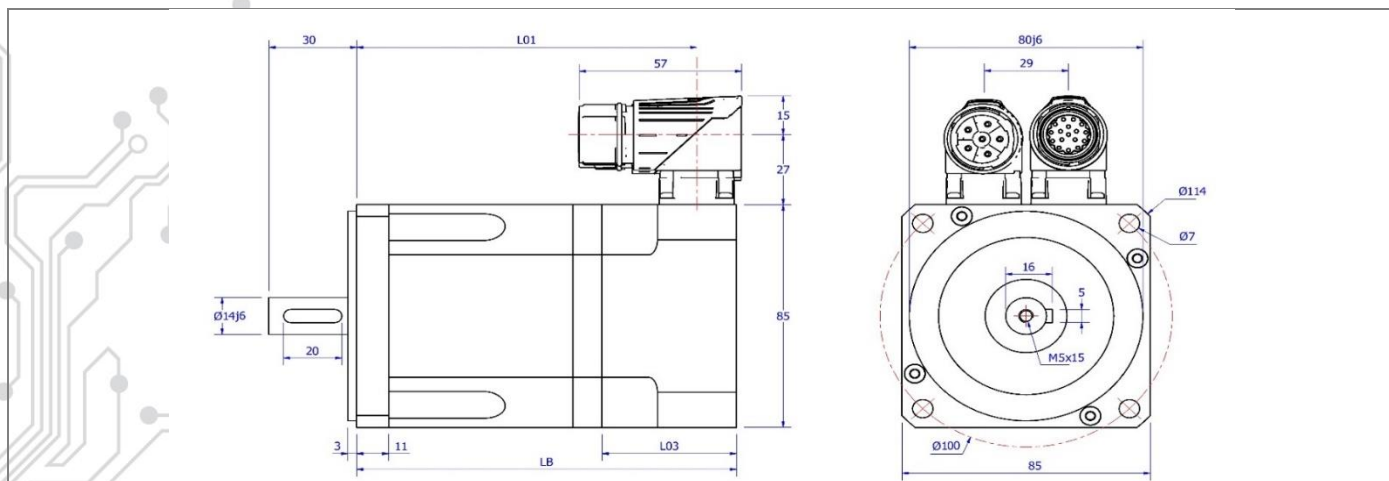
Their main characteristics are:

- Frame size 85mm
- 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	DSM5.31		DSM5.32		DSM5.33		DSM5.34	
		Units	1	2	1	2	1	2	1	2
Stall Torque	M_0	Nm	1,5		2,9		4,2		5,3	
Maximum Torque	M_{pk}	Nm	5,2		10		14		18	
Stall Current	I_0	A	1,65	1,1	3,2	2	4,6	2,9	5,8	3,4
Peak current	I_{pk}	A	6,6	4,0	12,8	8	18	11	23	14
Maximum mechanical revs	N_{mec}	min ⁻¹	7000		7000		7000		6000	
Maximum revs @ 230Vac	N_{MAX}	min ⁻¹	3100	1800	3200	1900	3300	2000	3300	1900
Maximum revs @ 400Vac	N_{MAX}	min ⁻¹	6000	3500	6000	3500	6000	3500	5000	3000
Voltage constant	K_E	V/krpm	55	86	55	88	55	88	55	93
Torque constant	K_T	Nm/A	0,91	1,42	0,91	1,46	0,91	1,46	0,91	1,54
Rotor Inertia	J_R	kg cm ²	0,92		1,72		2,53		3,33	
Resistance @ 20°C	R_{U-V}	Ohm	9	23	3,4	8,3	1,9	5	1,4	4
Inductance @ 1 kHz	L_{U-V}	mH	16	35	7	18	4,5	12	3,5	11
Mass	m	kg	2,4		3,5		4,6		5,7	



Dimension in mm

Tab. 2

Feedback device	EQI1130, TTL 2048ppr, Resolver				SinCos, SKM36					
Dimension	LB		L01		L03	LB		L01		L03
Shaft - ØD	14	19	14	19		14	19	14	19	
DSM5.31	115	125	101	111	31	130	140	116	126	46
DSM5.32	145	155	131	141		160	170	146	156	
DSM5.33	175	185	161	171		190	200	176	186	
DSM5.34	205	215	191	201		220	230	206	216	
DSM5.31 Brake	163	163	149	149		178	178	164	164	
DSM5.32 Brake	193	193	179	179		208	208	194	194	
DSM5.33 Brake	223	223	209	209		238	238	224	224	
DSM5.34 Brake	253	253	283	283		268	268	254	254	

Dimension in mm

Tab. 3

Flange	56B5	63B5
N	80j6	95j6
M	100	115
S	7	9
AC	85	100

Dimension in mm

Tab. 4

Shaft	Dimension	
D	14j6	19j6
E	30	40
GL	20	32
GA	16	21,5
F	5	6
R	M5 x 15	M6 x 16

Information Bold data refers to standard version dimensions.

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 IC410
- Typical tolerance value ±10%
- Continuous ratings apply with a rise of Δ 100K on the windings when fitted on an aluminium plate with dimensions 254 x 254 x 8mm

Sangalli 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
D	S	M	5	3	2	2	0	4	7	x	x

POS. DESCRIPTION

- 1-3 **Product**
DSM= PM synchronous motor, self-cooled
- 4 **Motor type**
Series 5
- 5 **Motor size**
Size Three
- 6 **Motor length**
1 = Mo 1,5 Nm
2 = Mo 2,9 Nm
3 = Mo 4,2 Nm
4 = Mo 5,3 Nm
- 7 **Voltage**
1 = Winding code 1
2 = Winding code 2
- 8 **Holding brake**
0 = Without brake
1 = Permanent Magnet Brake $24V_{DC} \pm 6\%$ $M_{br} = 9Nm$ $18W$ $J_{br} = 0,6kgcm^2$ $m=1,0$ kg
- 9 **Feedback**
0 = Sensorless
1 = Heidenhain Encoder EQI1130 Endat Multi Turn
4 = Incremental Encoder 2048 PPR + hall
6 = Incremental Encoder 4096 PPR + hall
7 = Encoder sin-cos 1 Vpp 2048 with CD channels
9 = Resolver 2p 7V 10KHz
C = Encoder Sangalli Servomotori ME29 Biss-C MT at battery cell
W = Sick encoder EKS36 17bit NO SIL, DSL
Y = Sick encoder EKM36 18bit Multi turn NO SIL, DSL
Z = Sick encoder SKM36 Hiperface 128i PPT Multi turn

Available on request SIL option on some types of encoders
- 10 **Connection type**
1 = Cable gland + cable 30-40 cm
7 = M23 90° 6 poles power connector / M23 90° feedback
- 11-12 **Special version** *(Below some examples, for further details please contact our technical support.)*
23 =Shaft 19 x 40mm Flange 63B5
66 = IP65 Shaft Protection
90 = Thermal protection PT1000
xx = Special Shaft and Flanges (on request)

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MOTORS & MOTION CONTROL

- **DSM5 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

