



AC BRUSHLESS SERVOMOTORS - **DSM5.5x**



DSM5 - size **FIVE** 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.

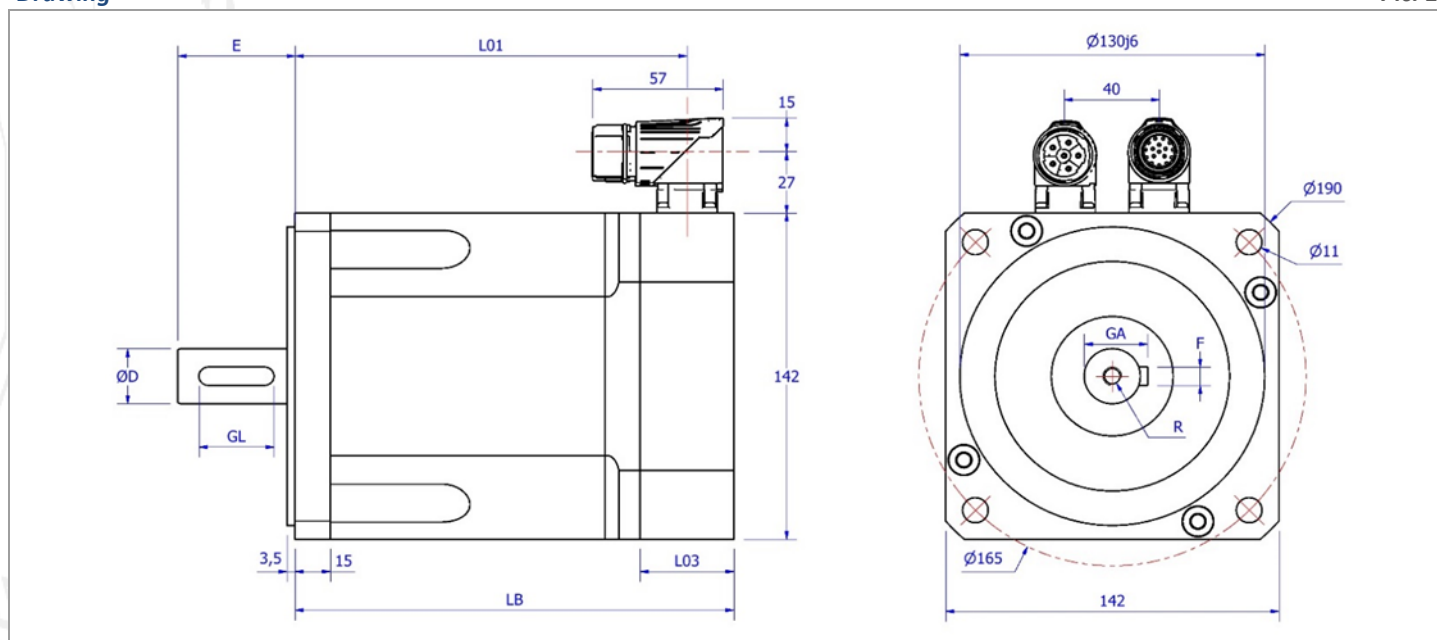
Their main characteristics are:

- Frame size 142 mm
- 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	DSM5.51		DSM5.52		DSM5.53		DSM5.54	
		Units	1	2	1	2	1	2	1	2
Stall Torque	M_0	Nm	10		19		27		35	
Maximum Torque	M_{pk}	Nm	35		64		94		118	
Stall current	I_0	A	9,8	6,5	16	12	21	15	25	20
Peak current	I_{pk}	A	41	27	64	50	84	62	100	80
Maximum mechanical revs	N_{mec}	min^{-1}	6500		6500		5500		5500	
Maximum revs @ 230Vac	N_{MAX}	min^{-1}	3000	1900	2600	2000	2400	1700	2200	1800
Maximum revs @ 400Vac	N_{MAX}	min^{-1}	5000	3000	4500	3000	4500	3000	4000	3000
Voltage constant	K_E	V/krpm	62	93	72	93	78	106	85	106
Torque constant	K_T	Nm/A	1,03	1,54	1,19	1,54	1,29	1,75	1,41	1,75
Rotor Inertia	J_R	$kg\ cm^2$	22		43		65		87	
Resist. @ 20°C	R_{U-V}	Ohm	0,65	1,61	0,34	0,61	0,25	0,46	0,18	0,32
Induct. @ 1 kHz	L_{U-V}	mH	2,6	7	1,9	3,3	1,7	2,7	1,7	1,9
Mass	m	kg	11		16		21		26	



Dimension in mm

Tab. 2

Feedback device	EQI1131, TTL 2048ppr, Resolver			SinCos, SKM36		
Dimension	LB	L01	L03	LB	L01	L03
DSM5.51	174	154	27	187	167	40
DSM5.52	224	204		237	217	
DSM5.53	274	254		287	267	
DSM5.54	324	304		337	317	
DSM5.51 Brake	227,5	207,5		240,5	220,5	
DSM5.52 Brake	277,5	257,5		290,5	270,5	
DSM5.53 Brake	327,5	307,5		340,5	320,5	
DSM5.54 Brake	377,5	357,5		390,5	370,5	

Dimension in mm

Tab. 3

Shaft	Dimension	
D	24j6	32k6
E	50	58
GL	32	45
GA	27	35
F	8	10
R	M8 x 15	M12 x 22

INFORMATION - Bold data refers to standard version dimensions.

The following accessories are available on request:

- 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 $\pm 10\%$
- 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
D	S	M	5	5	3	2	0	4	7	x	x

POS. DESCRIPTION

- 1-3 **Product**
 DSM = 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 Five
- 6 **Motor length**
 1 = Mo 10 Nm
 2 = Mo 19 Nm
 3 = Mo 27 Nm
 4 = Mo 35 Nm
- 7 **Voltage**
 1 = Winding code 1
 2 = Winding code 2
- 8 **Holding brake**
 0 = Without brake
 1 = Permanent Magnet Brake $24 \pm V_{DC}$ $M_{br} = 40 \text{ Nm}$ 24 W $J_{br} = 13,7 \text{ kgcm}^2$ $m = 3,1 \text{ kg}$
- 9 **Feedback**
 0 = Sensorless
 3 = Heidenhain Encoder EQI1131 Endat Multi Turn 2.2
 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
 W = Sick encoder EKS36 18bit 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**
 7 = M23 90° 6 poles power connector / M23 90° feedback
 9 = M40 90° 6 poles power connector / M23 90° feedback connector (Currents >20A)
- 11-12 **Special version** (Below some examples, for further details please contact our technical support.)
 26 = Shaft without key
 32 = Shaft 32 x 58 without key
 66 = IP65 Shaft Protection
 90 = Thermal Protection PT1000
 xx = Special Shaft and Flanges (on request)



SANGALLI SERVOMOTORI

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



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