



## AC BRUSHLESS SERVOMOTORS - DSM7.3x



**DSM7 – size THREE** Brushless Servomotors are AC PM synchronous servomotors. They have been designed using the latest generation of magnets and are characterized by a high performance/price ratio. The use of quality materials allows high torque/volume ratios and provides excellent dynamic performance, with low cogging torque and low torque ripple. DSM7 is available with resolver, incremental, absolute or sin-cos type encoder feedback.

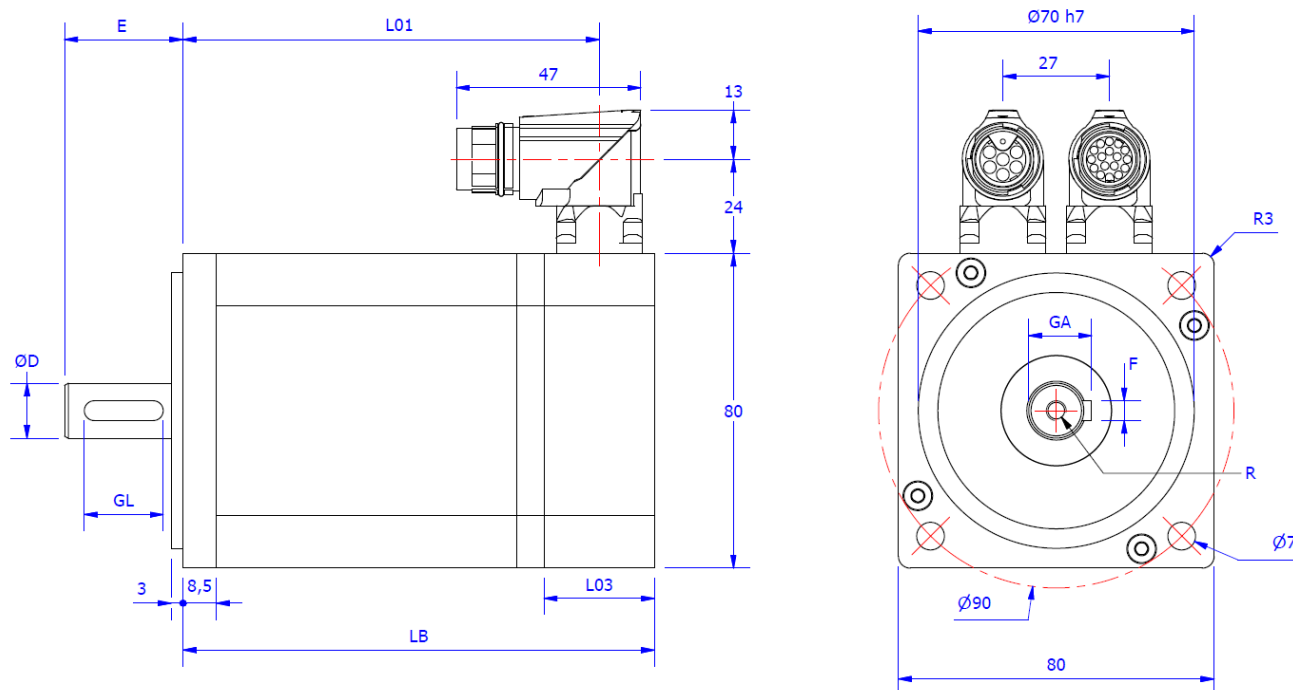
### Their main characteristics are:

- Rare earth magnets for high performance
- 8 poles construction, 80 x 80mm frame size.
- Sinusoidal back E.M.F.
- Integrated PTC or PT1000 thermal protection
- Rotatable connectors
- Compact design, low weight
- High IP rating, smooth finish
- High efficiency

Technical Data

Tab. 1

| Description<br><br>Winding code | Symbol    | Motor      | DSM7.31 |       | DSM7.32 |       | DSM7.33 |       |
|---------------------------------|-----------|------------|---------|-------|---------|-------|---------|-------|
|                                 |           | Unit       | 1       | 2     | 1       | 2     | 1       | 2     |
| <b>Stall Torque</b>             | $M_0$     | Nm         | 1,4     |       | 2,8     |       | 3,9     |       |
| <b>Maximum Torque</b>           | $M_{pk}$  | Nm         | 5,0     |       | 9,5     |       | 13,0    |       |
| <b>Stall current</b>            | $I_0$     | A          | 1,7     | 1,1   | 3,5     | 2,1   | 4,9     | 3     |
| <b>Peak current</b>             | $I_{pk}$  | A          | 7,2     | 4,6   | 14      | 8,6   | 20      | 12    |
| <b>Max mechanical revs</b>      | $N_{mec}$ | $min^{-1}$ | 7000    |       | 7000    |       | 7000    |       |
| <b>Max revs @ 230Vac</b>        | $N_{max}$ | $min^{-1}$ | 3500    | 2000  | 3500    | 2000  | 3500    | 2000  |
| <b>Max revs @ 400Vac</b>        | $N_{max}$ | $min^{-1}$ | 6000    | 3500  | 6000    | 3500  | 6000    | 3500  |
| <b>Voltage constant</b>         | $K_E$     | V/krpm     | 49      | 80    | 48      | 79    | 48      | 80    |
| <b>Torque constant</b>          | $K_T$     | Nm/A       | 0,81    | 1,323 | 0,794   | 1,307 | 0,794   | 1,323 |
| <b>Rotor inertia</b>            | $J_R$     | $kg\ cm^2$ | 0,77    |       | 1,42    |       | 2,1     |       |
| <b>Resistance @ 20°C</b>        | $R_{U-V}$ | Ohm        | 9,6     | 24,2  | 3,4     | 9,2   | 2,0     | 5,3   |
| <b>Inductance @ 1 kHz</b>       | $L_{U-V}$ | mH         | 14,8    | 36,9  | 6,8     | 18,0  | 4,3     | 11,4  |
| <b>Mass (without brake)</b>     | m         | kg         | 1,9     |       | 2,7     |       | 3,5     |       |
| <b>Electric time constant</b>   | $\tau_e$  | msec       | 1,54    |       | 2,0     |       | 2,15    |       |



Dimension in mm

Tab. 2

| FEEDBACK DEVICE | ABS, M29, TTL, RESOLVER |       |       |       | AD36 - SKM36 |       |       |       |       |     |
|-----------------|-------------------------|-------|-------|-------|--------------|-------|-------|-------|-------|-----|
| DIMENSION       | LB                      |       | L01   |       | L03          | LB    |       | L01   |       | L03 |
| SHAFT - ØD      | 14                      | 16/19 | 14    | 16/19 |              | 14    | 16/19 | 14    | 16/19 |     |
| DSM7.31         | 94,5                    | 104,5 | 80,5  | 90,5  | 28           | 112,5 | 122,5 | 87,5  | 97,5  | 46  |
| DSM7.32         | 119,5                   | 129,5 | 105,5 | 115,5 |              | 137,5 | 147,5 | 112,5 | 122,5 |     |
| DSM7.33         | 144,5                   | 154,5 | 130,5 | 140,5 |              | 162,5 | 172,5 | 137,5 | 147,5 |     |
| DSM7.31 BRAKE   | 146,1                   | 146,1 | 132,1 | 132,1 |              | 164,1 | 164,1 | 139,1 | 139,1 |     |
| DSM7.32 BRAKE   | 171,1                   | 171,1 | 157,1 | 157,1 |              | 189,1 | 189,1 | 164,1 | 164,1 |     |
| DSM7.33 BRAKE   | 196,1                   | 196,1 | 182,1 | 182,1 |              | 214,1 | 214,1 | 189,1 | 189,1 |     |

Dimension in mm

Tab. 3

| TG3 | Shaft |       |       |
|-----|-------|-------|-------|
| D   | 14j6  | 16j6  | 19j6  |
| E   | 30    | 40    | 40    |
| GL  | 20    | 25    | 32    |
| GA  | 16    | 18    | 21,5  |
| F   | 5     | 5     | 6     |
| R   | M5x15 | M5x15 | M6x16 |

**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 fitted
- Motor Installation B5 – V5
- Cooling IC410
- Typical tolerance value  $\pm 10\%$
- Continuous ratings apply with a rise of  $\Delta 100K$  on the windings when fitted on an aluminium plate with dimensions 305mm x 305mm x 15mm

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 | 7 | 3 | 2 | 2 | 0 | 4 | 8  | 2  | 6  |

### POS. DESCRIPTION

#### 1-3 Product

DSM= PM synchronous motor, self-cooled

#### 4 Motor type

Series 7

#### 5 Motor size

Size Three

#### 6 Motor length

1= Mo 1,4Nm

2= Mo 2,8Nm

3= Mo 3,9Nm

#### 7 Voltage

1= Winding code 1

2= Winding code 2

#### 8 Holding brake

0= Without brake

1= Brake 24V<sub>DC</sub>±6% (M<sub>br</sub> = 9Nm; P<sub>br</sub>=18W; m = 1,0kg; J<sub>br</sub>=0,6kg cm<sup>2</sup>)

#### 9 Feedback

0 = Sensorless

3 = Heidenhain Encoder EQI1130 Endat Multi Turn 2.2

4 = Incremental Encoder 2048 PPR + hall

9 = Resolver size 15 2p 7V 10KHz

A = Hengstler absolute Encoder AD36 Biss-B 31 bit Multi turn

C = Encoder Sangalli Servomotori ME29 Biss-C MT at battery cell

Z = Sick encoder SKM36 Hiperface 128i PPT Multi turn

*Available on request SIL option on some types of encoders*

#### 10 Connection type

8= M17 7 poles power connector / M17 90° feedback

#### 11-12 Special versions (Below some examples, for further details please contact our technical support.)

26= Smooth Shaft

66= IP65 Shaft Protection

90= Thermal protection PT1000

xx= special version on request

# SANGALLI SERVOMOTORI



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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

