

# Permanent Magnet DC Servomotors E-Series with Tach



- High performance motors with exceptional efficiency
- Rated torque from 0,2 Nm up to 3,6 Nm rms
- Rated power from 90 W up to 940 W
- High overload capability, peak torques from 1,34 Nm up to 21,6 Nm
- Compact size through optimized torque to inertia ratio
- Developed for high dynamic applications
- Best price performance ratio by cost improved design
- Various options to meet your specific needs

## Description

The E-series with tacho generators are a family of permanent magnet DC servomotors designed to satisfy the demands of a broad range of industrial and professional applications, where highly precise speed and/or positioning performance are required.

E-series permanent magnet DC servomotors can match most of the applications in terms of precision and speed. The high level of technological know-how and the extreme accuracy of quality control make these servomotors highly reliable.

## Technical Data (at ambient temperatures of 25°C)

		E586MG <sub>-</sub>	E588A-MG <sub>-</sub>	E588A-MG <sub>-</sub> -8	E589MG <sub>-</sub>	E642A-MG <sub>-</sub> -K	E642B-MG <sub>-</sub> -K	E644A-MG <sub>-</sub> -K	E644B-MG <sub>-</sub> -k	E644C-MG <sub>-</sub> -K	E726MG <sub>-</sub>	E728MG <sub>-</sub>
<b>Motor Data</b>												
Rated power $P_N$	W	90	140	140	170	275	275	420	230	125	550	940
Stall torque $a M_b$	Nm	0,22	0,34	0,34	0,40	0,72	0,72	1,25	1,25	1,25	2,50	4,25
Rated torque $M_N$	Nm	0,19	1,28	0,28	0,34	0,67	0,67	1,05	1,05	1,05	2,10	3,60
Stall current $I_b$	A	3,7	3,2	3,2	3,4	9,0	5,7	9,8	5,2	3,1	7,1	11,8
Rated current $I_N$	A	3,4	2,8	2,8	2,8	8,4	5,3	8,2	4,4	2,6	6,0	10,0
Peak current	A	24	21	21	20	39	25	50	24	15	45	60
Rated speed	rpm	5300	5000	5000	4700	4000	4000	4000	2100	1200	2500	2500
Max. speed	rpm	6000	6000	6000	5500	5000	4500	4500	2300	1400	3000	3000
Armature inertia $J_M$	kgm <sup>2</sup> 10 <sup>-3</sup>	0,040	0,055	0,055	0,068	0,13	0,13	0,25	0,25	0,25	0,75	1,20
Torque constant $k_T$	Nm/A	0,056	0,105	0,105	0,12	0,08	0,13	0,13	0,24	0,40	0,35	0,36
Voltage constant $k_E$	krms	5,85	11,0	11,0	12,7	8,6	13,4	13,4	26,1	42,0	36,0	38,0
Winding resistance $R_A$	Ω	0,80	1,60	1,60	2,15	0,38	0,94	0,25	1,00	3,20	0,80	0,52
Terminal resistance $R_K$	Ω	1,15	2,00	2,00	2,40	0,50	1,10	0,40	1,10	3,70	0,95	0,67
Weight	kg	1,30	1,70	1,70	2,10	2,70	2,70	4,50	4,50	4,50	6,50	7,50
Mechanical time constant $t_m$	ms	12,5	10,0	10,0	8,0	7,5	8,7	5,3	5,3	5,3	8,5	5,0
Static friction loss $M_R$	Nm	0,021	0,021	0,021	0,021	0,057	0,057	0,057	0,057	0,18	0,18	0,18
Electrical time constant $t_e$	ms	2,9	2,8	2,8	2,0	0,8	0,8	1,6	1,7	1,4	2,0	1,6
Inductance L	mH	3,39	5,60	5,60	4,80	0,42	0,86	0,64	1,90	5,20	1,90	1,10
<b>Tach Data</b>												
Voltage constant	krpm	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0	14,0
Armature resistance R	Ω	720	720	720	720	110	110	110	110	110	110	110
Armature inductance	mH	138	138	138	138	8	8	8	8	8	8	8
Load resistance $R_L$	kΩ	5	5	5	5	5	5	5	5	5	5	5
Voltage ripple	%	5,0	5,0	5,0	5,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0
Temperature coefficient	%/°C	-0,05	-0,05	-0,05	-0,05	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01	-0,01

## Standard Specifications

- Insulation class F
- Flange mounting IMB5 according to IEC 34-7
- Vibration class N (DIN 45665)
- Ambient temperature 0 – 40°C without derating
- Manufactured according to EN 60034-1: 1995-02
- Flying leads
- PG clamps (except 500 series)
- Protection class IP 44 (except 500 series: IP 23)
- Ball bearings with lifetime lubrication
- Black coating

## Standard Options

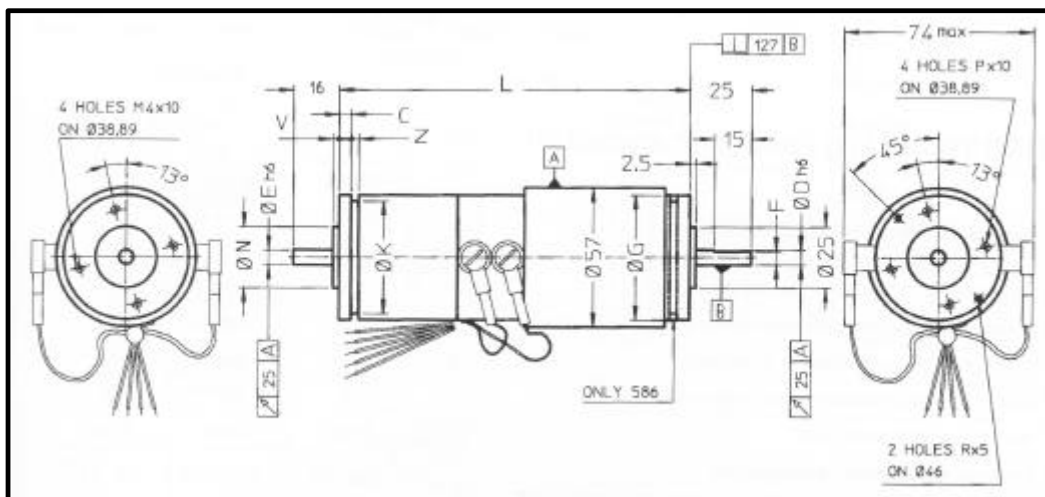
- Fail safe brake
- Encoder
- Second shaft extension
- Connectors

## Special Options

- Terminal box
- Various connectors
- Gearboxes
- Shaft extensions

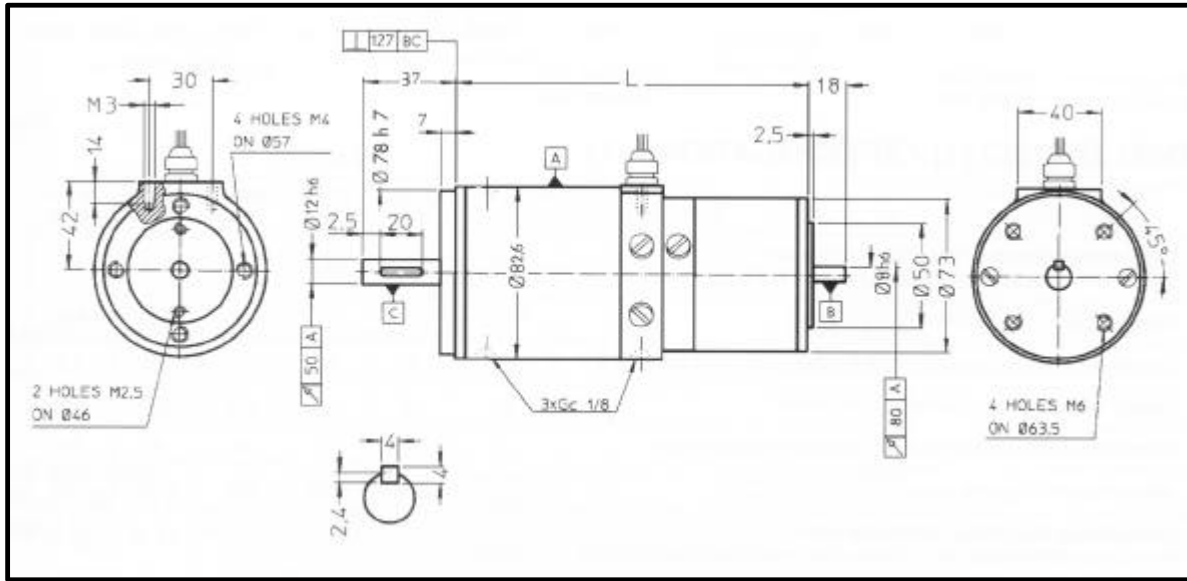
## Dimensions

### 500 Series with Tach



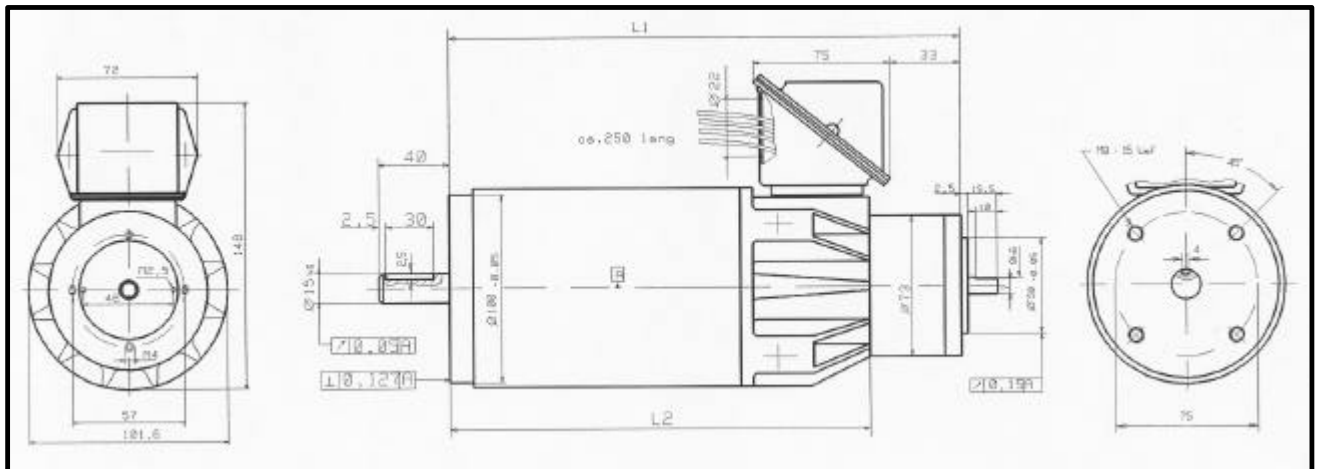
Motor type	E586 MG_	E588 A-MG_	E588 A-MG_-8	E589 MG_
L	142	168	168	180

**600 Series with Tach**



Motor type	E 642 A-MG_-K	E642 B-MG_-K	E644 A-MG_-K	E644 B-MG_-K	E644 C-MG_-K
L	176	176	243	243	243

**700 Series with Tach**



Motor type	E726MG_	E728MG_
L1	250	201
L2	306	257