



## GM Series



*A range of powerful and extremely accurate servo motors that bring all the benefits of printed armature technology to precision industrial automation applications.*

GM motors are available in three basic sizes, GM9, 12 and 16. Low voltage versions are ideally suited to battery powered and vehicle based applications. Totally enclosed in slim profile, all metal cylindrical casings, the design allows for easy attachment of ancillaries. Mountings are to international standards.

- 3 sizes
- 6 models

#### DESIGN OPTIONS

- Fixings/flange to IEC, BS or DIN standards
- Tachos, brakes, encoders, gearboxes, etc.
- Shaft extensions - front/rear
- Shaft fixings - taper, key, flat, thread, pin-hole
- Tailored performance profiles
- Custom engineered units
- Submersible versions (oil filled)

#### MATERIAL AND FINISH

<b>Casing</b>	anodised aluminium - silver
<b>End-plates</b>	mild steel - chemically blacked
<b>Bearings</b>	GM9/12 to ABEC3, GM16 to ABEC1
<b>Connectors</b>	screw, spade, or flying leads

#### STANDARD BENEFITS

- High torque
- Zero cogging
- Ultra slow/creep capability
- Low inertia
- Instant start torque
- High sensitivity
- High power output
- Low inductance
- EMC compliant

#### GM-T SERIES (WITH INTEGRAL TACHO)

A unique range of GM servo motors incorporating a second flat armature configured to provide highly accurate tachometer pulse generation. The GM-T series, GM9T, 12T and 16T, combine all the benefits of the GM series motors with those of the G-Tacho series, in a single, cost effective and space saving unit.

#### TYPICAL APPLICATIONS

- Process plant
- Robotics
- Automated machinery
- Professional transcription machines
- Winding machinery
- Sub-sea research machines
- Vehicle sub-systems
- Medical/scientific equipment
- Fluid valve control

For further information ►



# GM Series

## PERFORMANCE DATA

TEST DETAIL			GM SERIES MOTOR TEST RESULTS								
MOTOR RATINGS	SYMBOL	UNIT	GM9	GM9H	GM9T	GM12	GM12H	GM12T	GM16	GM16H	GM16T
Power	P	Watt	113	201	100	284	411	220	700	1000	627
Torque	T	Ncm	36	64	32	90	131	70.2	223	320	200
Speed	N	rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000
Voltage	V	Volt	22	33.4	21.1	43	64	38	79.3	126	74.8
Current	I	Amp	8.7	8.2	9.0	8.8	8	8.3	10.98	9.3	10.8
Continuous Stall Current	IS	Amp	7	7.1	5	8	8	6	8	8	8
Tacho Output	V	V/krpm	-	-	2.25	-	-	5.3	-	-	10.5
Ripple P-P @ 1000 RPM	-	-	-	-	4%	-	-	3.5%	-	-	3.0%

MOTOR CONSTANTS	SYMBOL	UNIT	GM9	GM9H	GM9T	GM12	GM12H	GM12T	GM16	GM16H	GM16T
Torque	Kt	Ncm/Amp	4.68	8.4	4.3	11	17.6	10.1	21.9	37.25	20.5
EMF	Ke	V/krpm	4.9	8.8	4.5	11.5	18.5	10.6	23	39	21.5
Damping	Kd	Ncm/krpm	0.56	0.71	0.85	1.28	1.83	3.2	4.2	6.5	4.6
Friction Torque	Tf	Ncm	2.8	2.8	4.2	2.8	4.3	4.2	5	5.2	8.1
Terminal Resistance @ 5A	Rm	Ohm	0.85	0.85	0.85	0.75	0.75	0.75	0.94	0.94	0.95
Rotor Moment of Inertia	J	kg.cm <sup>2</sup>	0.409	0.381	0.565	1.412	1.624	2.33	5.93	5.93	7.9

## PERFORMANCE CHARACTERISTICS AND DATA

## DIMENSION GUIDES

\* With keyway in output shaft.  
All dimensions in mm. All weights in kg.

MOTOR TYPE	DIMENSIONS												
	A	B	C	D	E	F	G	H	J	K	L	M	Wt
GM9	111	75h7	12j6	80h7	32	46	11	2.5	1.5	M5	6	88	2.1
GM9H	111	75h7	12j6	80h7	32	57	11	2.5	1.5	M5	6	88	2.5
GM9T	111	75h7	12j6	80h7	32	46.5	11	2.5	1.5	M5	6	88	2.1
GM12	140	75h7	12j6	80h7	32	52.5	11	2.5	1.5	M5	6	88	3.5
GM12H	140	75h7	12j6	80h7	32	70	11	2.5	1.5	M5	8	88	4.7
GM12T	140	75h7	12j6	80h7	32	53	11	2.5	1.5	M5	6	88	3.74
GM16*	188	95h7	14g6	100h7	34	61	11	3	1	M8	8	115	8
GM16H*	188	95h7	14g6	100h7	40	73	11	3	1	M8	8	115	8.5
GM16T*	188	110h7	14g6	100h7	33	62.2	13	3	3.3	M8	8	130	8

## REAR SHAFT EXTENSION

Readily available to suit customers ancillary mounting requirements, subject to agreement on specification.

