

## 0.2-1.3 kW brushless servo motors

## ACM series

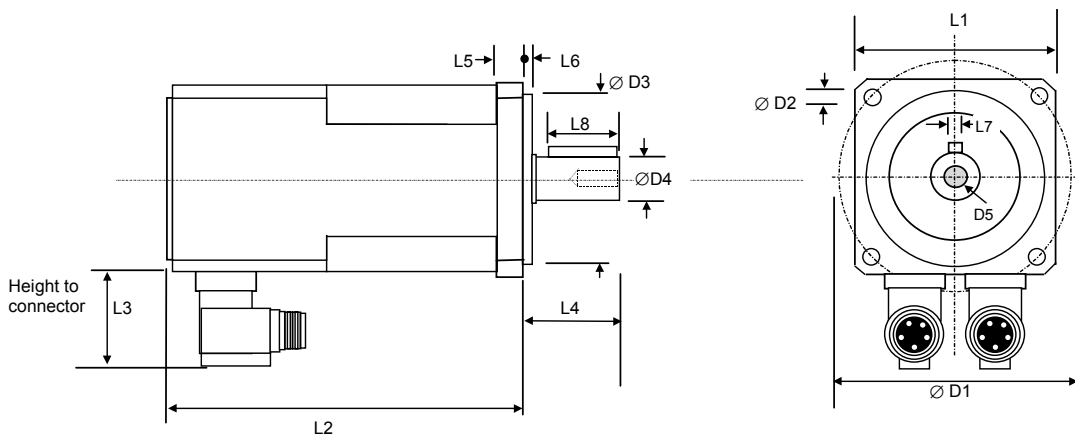
The ACM series of Brushless servo motors have been developed specifically for use with the economic Model 631 packaged brushless drive to provide a fully self contained servo system with an integrated motion controller offering advanced control features at economic pricing levels

### Key features:

- Low system cost combined with high dynamic performance
- Maintenance-free 3 phase brushless construction
- Alternative body lengths offer peak torque ratings up to 6.0 Nm.
- Low inertia rotor for high acceleration & rapid reversals
- Robust resolver feedback for both commutation and position with resolution up to 8192 counts per revolution.
- Optional parking brake
- Sinewave drive technology to provide smooth operation.
- High thermal dissipation characteristics for cool running
- Connection via multi-pin connectors which may be rotated to any position to suit installation requirements.
- Standard range of cables for simple commissioning.



### ACM series servo motor dimensions:



### Table of Dimensions: mm.

Motor model Number		ACM2n 0055	ACM2n 0090	ACM2n 0150	ACM2n 0220	ACM2n 0320
Frame Size ( square )	L1	88	88	88	88	105
Body Length	L2	112	132	152	172	178
Body length with brake		153	173	193	213	218
Height to connector	L3	40	40	40	40	40
Shaft length	L4	30	30	30	30	40
Typical Flange thickness	L5	10	10	10	10	12
Centring Spigot Length	L6	3.0	3.0	3.0	3.0	3.0
Key width	L7	5 h9	5 h9	5 h9	5 h9	6 h9
Key Length	L8	20	20	20	20	30
<b>Diametric measurements</b>						
Mounting hole PCD	D1	100	100	100	100	115
Mounting hole diameter	D2	7	7	7	7	9
Spigot Diameter	D3	80 j6	80 j6	80 j6	80 j6	95 j6
Shaft Diameter	D4	14 k6	14 k6	14 k6	14 k6	19 k6
Tapped hole in shaft	D5	M4 x 12 deep	M4 x 12 deep	M4 x 12 deep	M4 x 12 deep	M6 x 15 deep

### Specification & performance using 631 series integrated brushless servo drivers

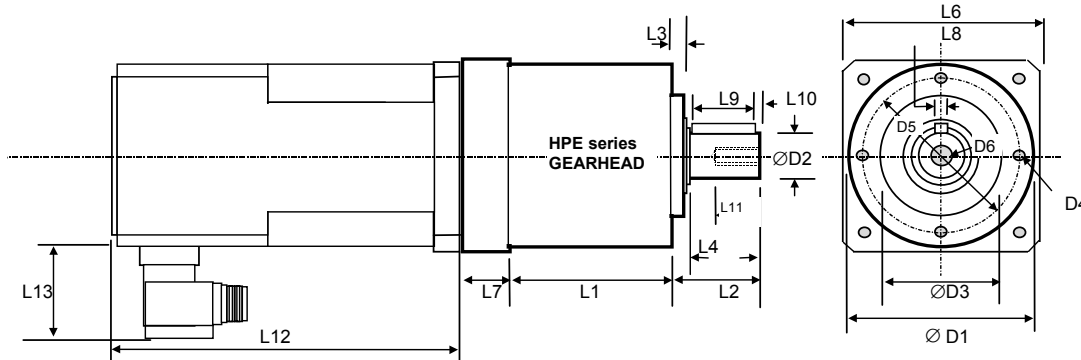
Motor Options:		ACM2n 0055	ACM2n 0090	ACM2n 0150	ACM2n 0220	ACM2n 0320
Matched Integrated Drive		-4/1.3 631-002-230F00	-4/1.3 631-002-230F00	-4/1.3 631-004-230F00	-4/1.3 631-006-230F00	-4/2.3 631-006-230F00
Rated Torque	Nm	0.55	0.90	1.5	2.2	3.0
Peak Torque	Nm	1.3 (* 1.6)	2.0 (* 3.5)	3.6 (* 6.0)	5.6	6.0
Output Power	kW	0.23	0.38	0.63	0.92	1.3
Rotor Inertia	Kgcm <sup>2</sup>	0.30	0.68	1.0	1.4	2.4
Note *	Peak torque can be increased to value shown by specifying next size larger drive unit					
Rated Speed	4,000 rpm					
Integral resolver position feedback	dual track, resolution: programmable to 8192 counts per rev.					
Enclosure	totally enclosed, self cooling					
Integral Parking Brake	Available as standard option					
Ambient temperature range	0 to + 40 deg. C					

# Geared brushless servo motors

# HPE / ACM series

- High peak torque provides high acceleration & deceleration capability
- Capable of withstanding factor 2 emergency shock loads without damage
- Low backlash construction provides accurate positioning and long life
- High torsional rigidity for stable operation in high speed positioning.
- Low torque ripple for smooth operation in velocity servo applications
- Planetary construction for high torque to volume ratio
- High reliability and serviceability

## Planetary geared servo motor dimensions:



**Table of Dimensions: mm**

Gearhead Motor		HPE 70 ACM2n0150 ACM2n 0220	HPE 90 ACM2n 0220 ACM2n 0320	HPE120 ACM2n 0320
Gearbox Version		HPE70S	HPE90S HPE90D	HPE120D
<b>Gearbox Diameter</b>	D1	<b>70</b>	<b>90</b>	<b>120</b>
Output shaft diameter	D2	16 k6	22 k6	32 k6
Gearbox mounting register	D3	52 h6	68 h6	90 h6
Gearbox mounting holes	D4	4 x M5	4 M6 12 deep	4 x M8
mounting hole PCD	D5	62	80	108
Shaft fixing bolt diameter	D6	Tapped M5	Tapped M8	Tapped M12
<b>Gearbox Length</b>	L1	69	80 109	142
Overall Output Shaft length	L2	36	46	70
Gearbox register length	L3	5	5	6
Free shaft length	L4	28	36	58
<b>Motor flange size</b>	L6	<b>90</b>	<b>90</b> for ACM2n-0220 motor <b>115</b> for ACM2n-0320 motor	<b>120</b>
Adaptor length	L7	22	32 maximum	28
Output shaft key width	L8	5 h9	6 h9	10 h9
Output shaft Key length	L9	25	32	50
Key distance to shaft end	L10	2	2	4
Shaft fixing tapped length	L11	10	13	22
<b>Motor body length</b>	L12	See motor data	See motor data	See motor data
Height to motor connector	L13	40	40	

## Typical Performance of geared servo motor options

Gearbox Model	Gear Ratio n:1	Motor Model	Rated Speed (rpm)	Rated Torque (Nm)	Peak Torque (Nm)	Maximum Emergency Torque (Nm)	Max. Backlash (arc. min.)
HPE 70S	5	ACM2n 0220	750	10	26	30	≤ 12
	10	ACM2n 0150	350	13	29	33	
HPE 90S	10	ACM2n 0320	300	24	53	53	≤ 12
HPE 90D	25	ACM2n 0220	120	40	80	120	≤ 15
HPE120D	50	ACM2n 0320	60	70	200	214	≤ 15
	100	ACM2n 0220	30	70	180	390	

Other combinations of gear ratio and motor are available on request.  
For ultra low backlash specify Omagear HP series gearheads.

