

1.3- 5 kW brushless servo motors

ACM series

The ACM series Brushless servo motors have been developed specifically for use with the Model 637 packaged brushless drive to provide a fully self contained servo system with an integrated motion controller offering many advanced control features

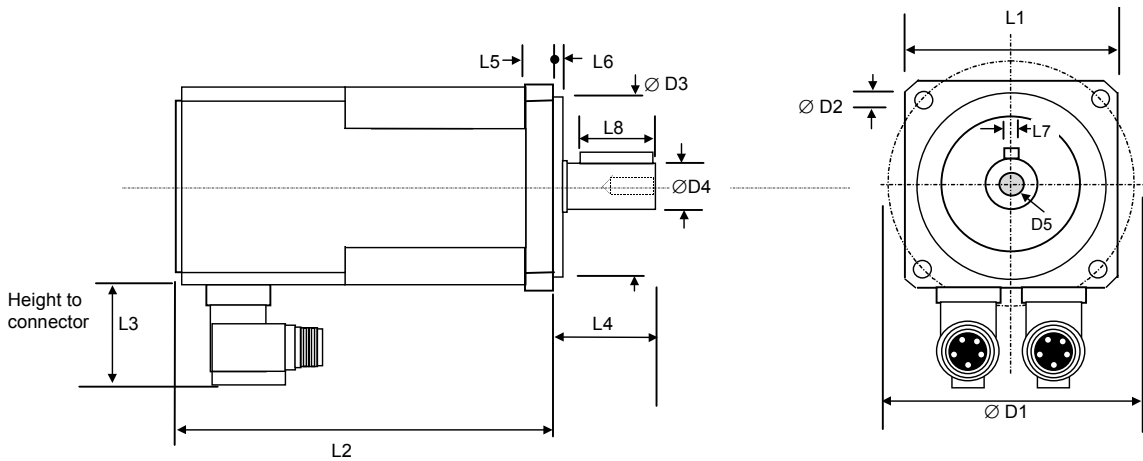
Key features:

- Low system cost combined with high dynamic performance
- Maintenance-free 3 phase brushless construction
- Alternative body lengths offer peak torque ratings up to 25 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 | | ACMn 0320 | ACMn 0480 | ACMn 0650 | ACM 0960 | ACM 1200 |
|-------------------------------|----|--------------|--------------|--------------|--------------|--------------|
| Frame Size (square) | L1 | 105 | 105 | 105 | 145 | 145 |
| Body Length | L2 | 200 | 230 | 280 | 300 | 340 |
| Body length with brake | | 240 | 270 | 315 | 345 | 385 |
| Max. Height to connector | L3 | 76 | 76 | 76 | 96 | 96 |
| Shaft length | L4 | 40 | 40 | 40 | 50 | 50 |
| Typical Flange thickness | L5 | 12 | 12 | 12 | 12 | 12 |
| Centring Spigot Length | L6 | 3.0 | 3.0 | 3.0 | 3.5 | 3.5 |
| Key width | L7 | 6 h9 | 6 h9 | 6 h9 | 8 h9 | 8 h9 |
| Key Length | L8 | 30 | 30 | 30 | 40 | 40 |
| Diametric measurements | | | | | | |
| Mounting hole PCD | D1 | 115 | 115 | 115 | 165 | 165 |
| Mounting hole diameter | D2 | 9 | 9 | 9 | 11 | 11 |
| Spigot Diameter | D3 | 95 j6 | 95 j6 | 95 j6 | 130 j6 | 130 j6 |
| Shaft Diameter | D4 | 19 k6 | 19 k6 | 19 k6 | 24 k6 | 24 k6 |
| Tapped hole in shaft | D5 | M6 x 15 deep | M6 x 15 deep | M6 x 15 deep | M8 x 25 deep | M8 x 25 deep |

Specification & performance using 637 series integrated brushless servo drivers

| Motor Options: | | ACMn 0320 | ACMn 0480 | ACMn 0650 | ACMn 0960 | ACM2n 1200 |
|-------------------------------------|-------------------|---|------------------------|------------------------|------------------------|------------------------|
| Matched Integrated Drive | | -4/2.6 637/K-D6R 04 | -4/2.6 637/K-D6R 06 | -4/2.6 637/K-D6R 10 | -4/3.6 637/K-D6R 16 | -4/3.6 637/K-D6R 16 |
| Rated Torque | Nm | 3.2 | 4.8 | 6.5 | 9.6 | 12 |
| Peak Torque | Nm | 8.0 | 10 | 21 | 25 | 25 |
| Output Power | kW | 1.34 | 2.0 | 2.7 | 4.0 | 5.0 |
| Rotor Inertia | Kgcm ² | 2.7 | 3.4 | 4.5 | 6.0 | 7.5 |
| 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:

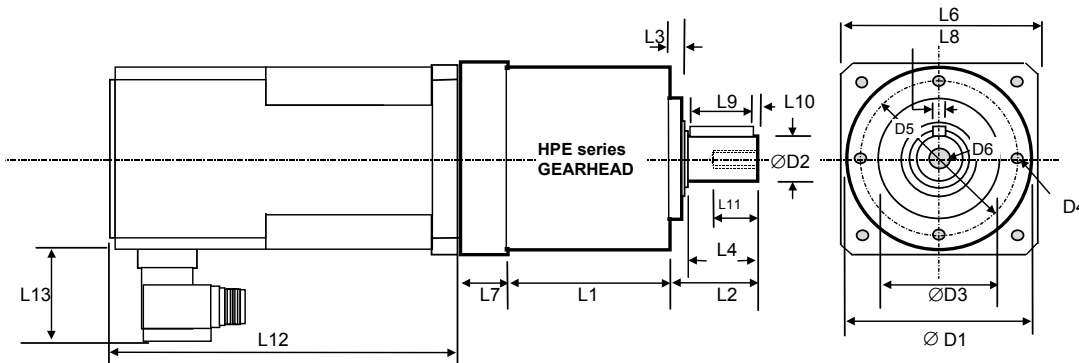


Table of Dimensions: mm

| Gearhead Motor | ACMn | HPE90 | | HPE120 | |
|-----------------------------|------------|-----------------|--------------------|------------------|--|
| | | 0480 0650 | 0960 1200 | 0480 0650 | |
| Planetary Gearhead | | HPE90-M1 | HPE120-M1 | HPE120-M2 | |
| Gearbox Diameter | D1 | 90 | 120 | 120 | |
| Output shaft diameter | D2 | 22 k6 | 32 k6 | 32 k6 | |
| Gearbox mounting register | D3 | 68 h6 | 90 h6 | 90 h6 | |
| Gearbox mounting holes | d4 | 4 x M6 | 4 x M8 | 4 x M8 | |
| Maximum screw insertion | | 12 mm | 16 mm | 16 mm | |
| mounting hole PCD | D4 | 80 | 108 | 108 | |
| Gearbox Length | L1 | 80 | 106 | 142 | |
| Overall Output Shaft length | L2 | 46 | 70 | 70 | |
| Gearbox register length | L3 | 5 | 6 | 6 | |
| Free shaft length | L4 | 36 | 58 | 58 | |
| Motor flange size | L6 | 105 | 145 maximum | 120 | |
| Adaptor length | L7 | 32 | 38 maximum | 28 | |
| Output shaft key width | L8 | 6 | 10 | 10 | |
| Output shaft Key length | L9 | 32 | 50 | 50 | |
| Key distance to shaft end | L10 | 2 | 4 | 4 | |
| Shaft fixing tapped length | L11 | 13 | 22 | 22 | |
| Motor body length | L12 | See motor data | | | |
| Height to motor connector | L13 | See motor data | | | |

Performance of geared servo motors

| 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 90-M1 | 5 | ACMn 0480 | 600 | 21 | 46 | 46 | ≤ 12 |
| | 5 | ACMn 0650 | 600 | 29 | 80 | 99 | |
| | 10 | ACMn 0480 | 300 | 35 | 72 | 92 | |
| HPE120-M1 | 5 | ACM 1200 | 500 | 51 | 114 | 114 | ≤ 12 |
| | 10 | ACM 0960 | 250 | 79 | 180 | 228 | |
| HPE120-M2 | 25 | ACMn 0480 | 100 | 80 | 200 | 230 | ≤ 15 |
| | 25 | ACMn 0650 | 100 | 120 | 210 | 480 | |

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