

Special AC Motors



Over four decades, Astrosyn has been a regular supplier of special AC electric motors for use in harsh environments that require combat readiness. Under such hostile conditions, performance parameters are especially rigorous and the total reliability of motors to drive essential services is stringently tested to extremes.

From the heat and humidity of the tropics to the intense cold of the Polar Regions, Astrosyn's motors are designed to meet stringent pre-defined Naval Engineering Standards. These standards specify demanding noise, vibration and atmospheric criteria, resulting in exceptional products that yield both military and commercial benefits.

General Specifications

Special Duty AC Motors

Our special AC motors are used to power critical marine, naval and submarine services, including...

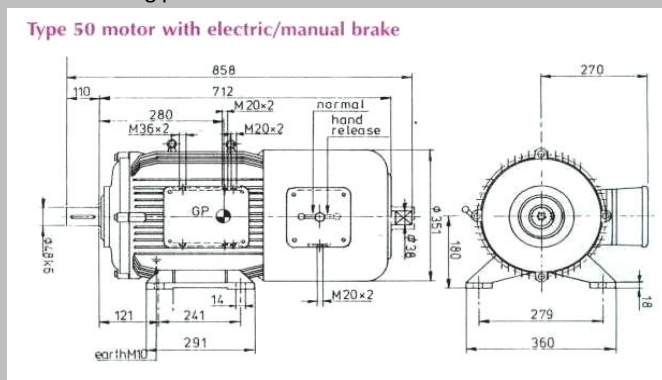


- Sonar and radar systems
- Fire pumps
- Compressors and fans
- Main lubricating oil systems
- Ammunition and provision lifts
- Winches and Bow Thrusters



Mild Shock Tolerant AC Motors Type 43

- AC motors to meet naval requirements for equipment emitting low noise & vibration spectra.
- Capable of withstanding mild shock to 30g in all directions.
- Available in IEC frame sizes from 56 to 400L.
- Standard range constructed with winding insulation class F.
- Minimum housing protection IP44.



Astrosyn International Technology Ltd
The Old Courthouse, New Rd Ave, Chatham, Kent, ME4 6BE, England
Tel +44 (0) 1634 815175 Fax +44 (0) 1634 826552 www.astrosyn.com

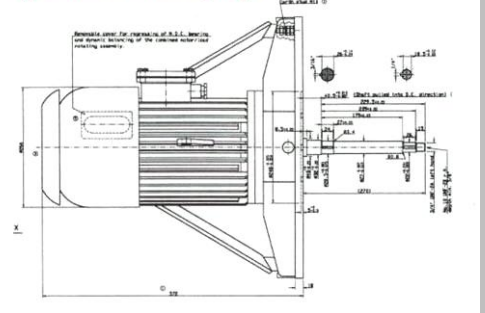
High Shock Tolerant AC Motors Type 50

- High shock level tolerance.
- Compliant with the NSSII naval standard.
- Type 50 AC motor housings are made of nodular cast iron.

High Shock Tolerant AC Motors Type 60

- Incorporates low-mass high shock resistant design.
- Ideal for pumping applications which benefit from close coupled motor driven equipment.

Type 48 motor with batwing flange



Extreme Shock Tolerant AC Motors Type 48

- Features a steel welded housing.
- Performance levels combine ultra low noise and vibration with extreme shock tolerance.
- This range is also available flame proofed to Eexde (Zone 1), suitable for operation in hazardous environments.

Submersible AC Motors

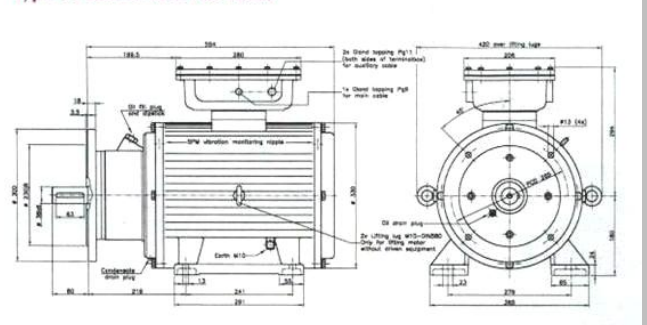
Astrosyn submersible AC motors are designed for continuous or intermittent immersion, with capability for surface or forced cooling and various seal options. Typical applications include...

- Deep well sinking
- Dredging
- Sewage and waste water pumping
- Offshore drilling platforms

Surface-Cooled Submersible Motor Type 55

- Designed for continuous submersible operation, or operation only when submerged.
- Available in power ratings up to 500kW and IEC frame sizes up to 450.
- Standard range designed with mechanical seals, lipseals or airbell construction.
- Winding insulation classes F or H available and protection rating is up to IP68.

Type 55 submersible AC motor



Forced-Liquid Cooled Submersible Motor Type 99

- Forced liquid cooling permits operation at maximum power in submerged and dry conditions.
- Excellent cooling enables a high output to be achieved from a small frame size.
- Features very low airborne noise emission.
- Available in power ratings up to 500kW and IEC frame sizes up to 450.
- Winding insulation classes F or H available and protection rating is up to IP68.

Low Magnetic Strayfield AC Motors

As an Approved Supplier to the UK Ministry of Defence, Astrosyn offers a range of AC motors developed to minimise strayfield magnetic and acoustic signatures. Widely used on board mine counter-measure vessels such as mine hunters and mine sweepers, these motors are available in protection classes IP54 to IP68, with standard shock protection to 60g. Two options are available for reduced strayfield emission.

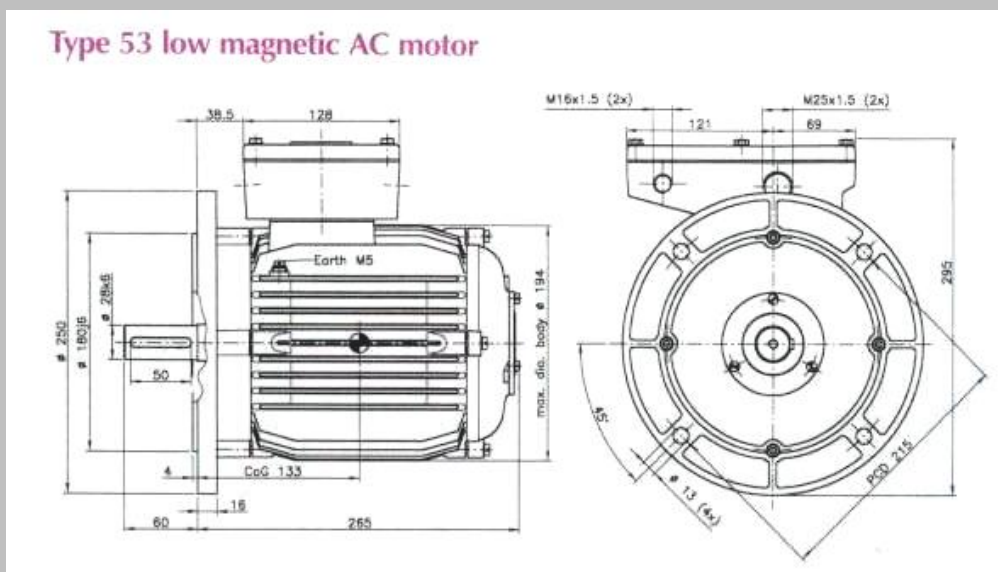


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- Low magnetic material construction and electrical configuration
- Integrated strayfield compensated and degaussing design



Brakes for Zero Movement

Most Astrosyn AC motors can be fitted with electromagnetic brakes for those applications where it is essential that no rotation occurs when the motor is not activated. Prime examples of this requirement are winch and elevator drives. When fitted to our motors, the brake option can also be configured with a manual override for emergency operation.

Specialised Industrial Applications



Astrosyn synchronous, asynchronous and single-phase AC motors are designed and manufactured to comply with internationally recognised military standards.

With this pedigree, the resultant performance parameters can often apply directly to demanding commercial projects that call for features such as submersible operation, weather resistance, temperature extremes, shock tolerance and ultra low vibration.

Specialised applications include submersible AC motors for continuous or intermittent immersion, with capability for surface or forced cooling and various seal options.

Power ratings span a range up to 500kW, and typical applications include:-

- Sewage and waste water pumping
- Dredging
- Deep well sinking
- Offshore drilling platforms
- High speed motors to 50,000rpm for R&D



Customisation

Almost any individual need can be met through a wide range of options and special designs, including...

- Special mounting configurations, flanges and shafts
- Dual voltage / Dual frequency / Dual speed motors
- Custom insulation for high performance
- Non standard duty ratings
- Thermistors and space heaters
- Inverter-fed supplies

Test Facilities

Our extensive factory-based facilities permit computer controlled testing to be carried out on the electrical performance of our motors under both no-load and load conditions. Full spectral analysis of the noise and vibration performance ensures compliance with the specifications.

A specially constructed metal-free laboratory is used for testing low magnetic strayfield motors. In addition, nearby facilities are used as required for comprehensive shock testing and EMC emission measurements.

Motor Refurbishment & Repair

Astrosyn offers a comprehensive repair service for special AC motors of our own manufacture and for those originally supplied by other specialist companies. We can quote for the following steps in the repair process.

Stripdown & Survey



- Initial inspections (visual, mechanical and electrical).
- External cleaning.
- No-load testing.
- Disassembly.
- Internal cleaning and inspection of subassemblies and parts.
- Measurement of shaft and housing fits.
- Report findings.



Basic Refurbishment

- Reclaiming of bearing fits and replacement of bearings.
- Assembly.
- No-load testing.
- Airborne noise measurements to NES847.
- Structure borne noise measurements to NES813.
- Touch up paint system; finishing.
- Test report and Certificate of Conformity.

Major Repairs

- Flange machining and shaft repair.
- Removal of old windings, rewind and varnishing.
- Fitting new thermistors to NES requirements.
- Replacement of armatures.
- Skimming of rotors and stators to adjust air-gap.
- Manufacture and fitment of terminal boxes.

