

# Technical Note

## AC Induction Motors

Motors

SEW-Eurodrive's DT/DV squirrel-cage induction motors and brakemotors deliver exceptional performance and reliability combined with low maintenance. The high-quality design and construction meet the standards of AC inverter/vector duty motors. In addition, the low-noise, low-inertia, and continuous-duty rating of SEW's brakemotors meet the demands of major applications that require fast, safe braking under tough service conditions.

### Product Range

- Power ratings: 0.25 – 100 hp
- 2, 4, 6, 8 single pole configurations
- 2/4, 4/8, 2/6, 2/8 dual pole, two-speed configurations
- Integral mechanical brakes to fit all frames

### Insulation System

The high-quality insulation system of SEW motors meets NEMA MG1 – 31.4.4.2 Voltage Spikes, a standard used for rating inverter/vector duty motors. The insulation system consists of the following.

- **Insulating varnish** prevents short circuits between adjacent coil wires.
- **Phase Separators** wrapped around each phase bundle prevent short circuits between phases.
- **Insulated Wire Sleeves** protect the motor leads going to the connection block.
- **Paper Slot Liners** and **Top Sticks** prevent winding-to-ground short circuits.
- Entire core assembly is **dipped** into an insulating varnish, then **baked** and cured to provide additional insulation protection and to form the stator into a solid, rugged assembly.

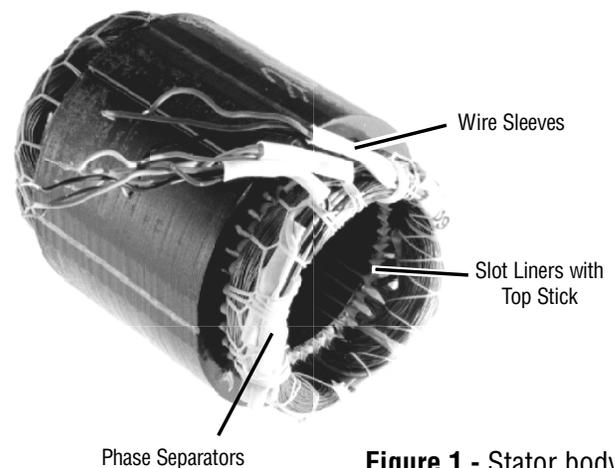


Figure 1 - Stator body

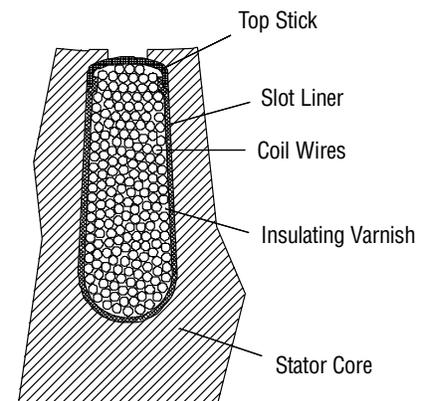


Figure 2 – Stator Slot

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## Standard Features

- Totally Enclosed Fan Cooled (TEFC)
- Continuous Duty
- Inverter/Vector duty
  - Full-load torque to 300 rpm without additional cooling
  - Inverter/Vector Duty nameplate available at no extra charge upon request
- Electrical Standards per NEMA-MG1
- NEMA Design B/C characteristics
- IEC dimensions (metric)
- Extremely low rotor inertias for high cycle applications
- CSA approved
- **CE** mark for shipment into Europe
- Oversize cast iron conduit box with connection terminals
- Pressed steel fanguard
- Molded plastic fan
- Class F winding insulation with DuPont® Nomex® phase separators and slot liners
- Copper wound stator
- Oil seal at shaft end shield
- Double sealed or shielded bearings lubed for life
- Stainless steel nameplate
- Cast iron stator frame sizes DV200 and larger
- Aluminum alloy stator frame sizes DV180 and smaller, consisting of the following:
  - Aluminum
  - Silicon 11-13.5%
  - Manganese 0.05%
  - Iron 0.15% maximum
  - Copper 0.01% maximum
  - Zinc 0.01% maximum
  - Magnesium 0.03% maximum
  - Titanium 0.05% maximum



Refer to Technical Note  
**M-022** for nameplate  
speeds of Inverter Duty

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## Mounting Configurations

SEW motors are suitable for mounting in any position. They are available as a stand-alone motor or as an integral part of a gear reducer. The mounting configurations are flange-mounted, foot-mounted, and a combination of foot/flange-mounted.

All SEW motors and brakemotors are available with an IEC standard shaft and an IEC standard flange. Since the shaft diameter, shaft length, flange diameter, flange bolt pattern, and shaft height are industry standard dimensions, SEW motors can interchange with any standard IEC footed or flanged motor (regardless of brand) in either 50 or 60 Hz. Plus, all parts are stocked in the USA for quick delivery.



Figure 3 – Flange-mounted



Figure 4 – Foot-mounted



Figure 5 – Foot/flange-mounted

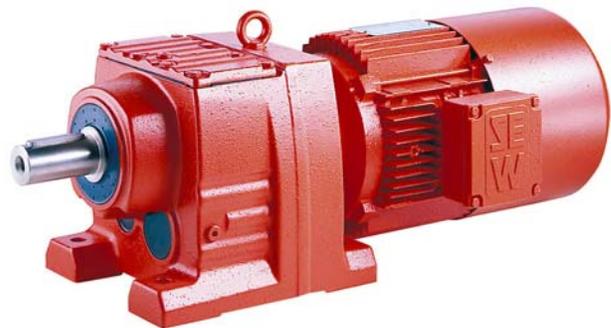


Figure 6 – Integral gearmotor

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## Optional Features

- High cycling fail-safe brake
- Mounted Movimot® frequency inverter
- 50Hz for worldwide use
- Forced cooling fan for low frequency operation
- Thermostats or thermistors
- Class F or H insulation
- Mounted incremental encoder or absolute encoder
- Mounted proximity sensors
- High inertia cast-iron fan
- Fan-end protective canopy
- Fan-end extended shaft
- Backstop
- Totally Enclosed Non-Ventilated (TENV)
- Metric to NPT adapters for use with conduit
- Severe Duty protection for moist environments
- Encapsulated stator and conduit box
- PTFE seals and PTFE V-ring on motor shaft for superior chemical and washdown protection
- Special, baked 4-layer paint process for extremely harsh environments
- Inverter/Vector Duty nameplate (no extra charge)



Figure 7 – Motor with Movimot®

See **Technical Note GM-038**, Food Industry Option Package, for additional information about extreme motor protection.