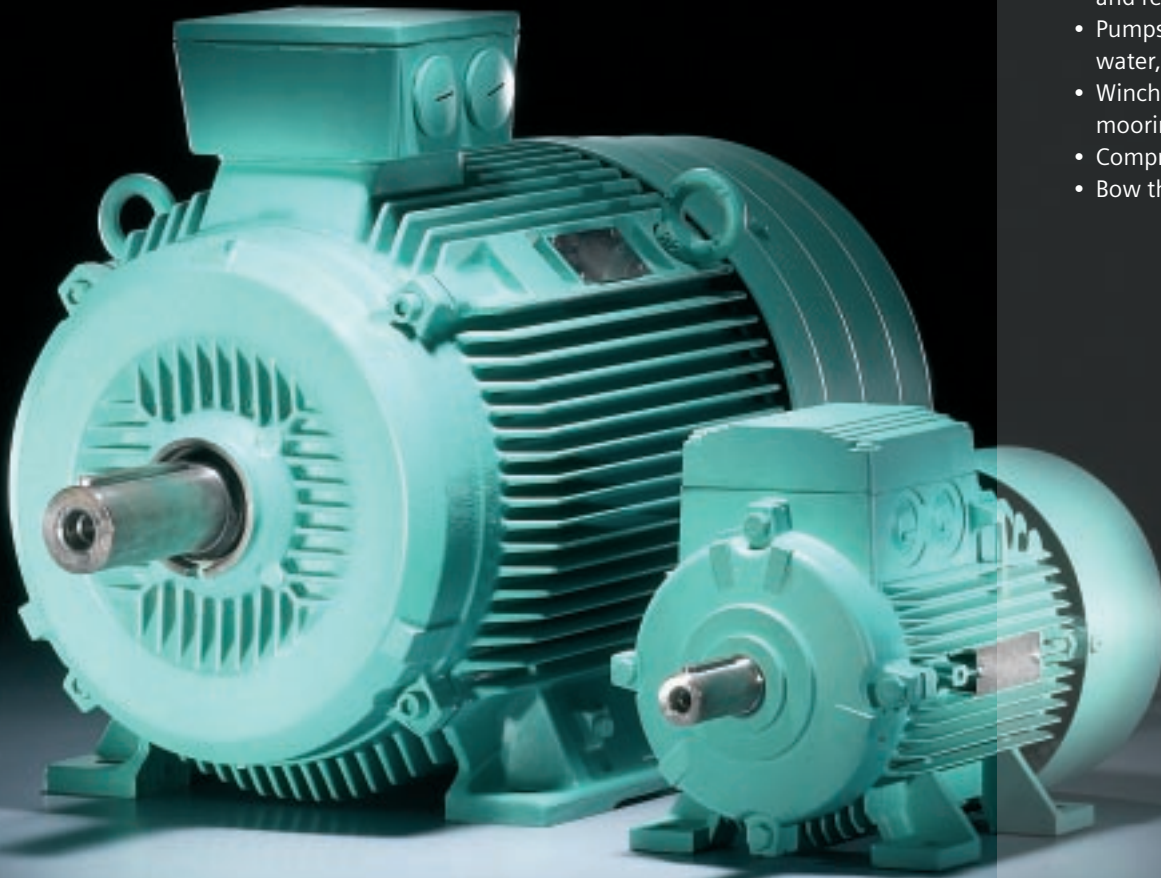


## Absolutely seaworthy – Type-approved motors for the roughest conditions



### Typical uses

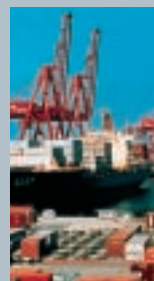
Our type-approved marine motors have been specially designed for use below deck as well as for the offshore industry, e.g. oil and gas platforms.

### Propulsion systems for ships

- Fans (e.g. for air-conditioning and refrigerating systems)
- Pumps (for fire-extinguishing water, cooling water, fuels, oil)
- Winches (anchor winches, mooring winches, lifting gear)
- Compressors
- Bow thruster drives

# Marine motors

Saline air and high humidity are extremely aggressive for electrical equipment on ships and installations directly in contact with the sea. It is therefore no wonder that well-known ship-classification companies formulate strict regulations regarding the additional qualifications of motors. These are additional qualifications that our marine motors all possess as they have been specially designed for use below deck, in the offshore industry and in many other areas as well. Their thermal utilization factor has been adapted to the higher ambient temperatures on board ships. Problems arising from the environment in which they are used simply do not arise.



# SIEMENS

# Type-approved marine motors

## Technical data



### Type approval

All our motors are manufactured and type-approved according to the regulations of the internationally leading ship-classification societies:

- GL (Germanischer Lloyd, Germany)
- DNV (Det Norske Veritas, Norway)
- LR (Lloyds Register, Great Britain)
- BV (Bureau Veritas, France)

No individual acceptance inspection is necessary up to a power limit of GL < 50 kW; LR < 100 kW; DNV < 300 kW; BV < 50 kW

As an option, we also manufacture motors according to the requirements of the classification societies

- ABS (American Bureau of Shipping, USA)
- RINA (Registro Italiano Navale, Italy)

A type-approval certificate, however, is only issued in the case of individual acceptance inspections.

Special designs beyond the range defined in the catalog can be supplied on request.



### Overview of technical data

Motor series	Type-approved energy-saving motors in an aluminum or cast-iron housing, also with explosion protection
Sizes	56M to 450
Power output	60 W to 1000 kW, type-approval certificate up to 200 kW
Types	All usual types
Frequency	50 Hz and 60 Hz
Number of poles	2, 4, 6 and 8 poles, and with pole-changing capability
Coolant temperature	45 °C, higher temperatures possible
Special designs	Winding and bearing monitoring devices, space heater, pulse encoder, brakes etc.
Operation from a converter	Standard up to 500 V (voltage peak times $t_v > 0.1 \mu s$ ), special design up to 690 V possible
Standards	Usual DIN, EN and IEC standards, IEC 92-301 "Electrical Installations on Board Ships"
Special features	Type-approved according to GL, DNV, LR, BV. No individual acceptance inspection needed up to a certain power limit: GL < 50 kW, DNV < 300 kW, LR < 100 kW, BV < 50 kW. Factory test certificate 2.3 in accordance with DIN EN 10204, metal rating plate indicating the classification company, efficiency category EFF1 and EFF2.