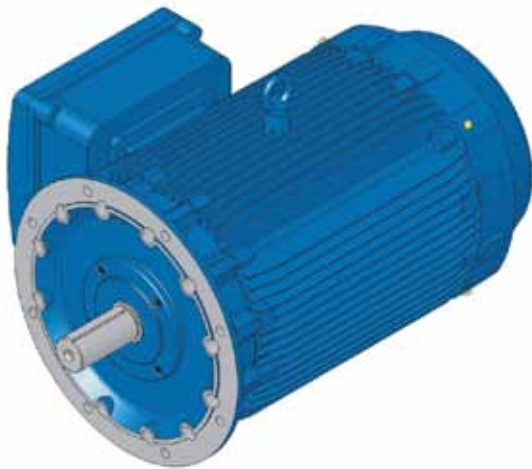
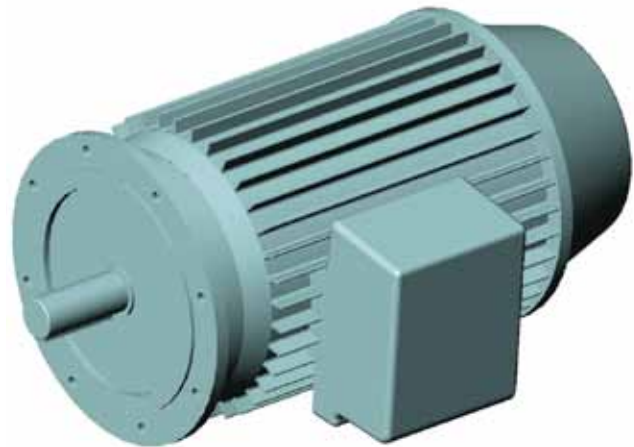


## ELECTRICAL DRIVING SYSTEMS FOR WINCHES



**Explosion-proof / flame-proof motors**  
Protected against explosions in hazardous areas  
Electro magnetic brake included



**Asynchronous motors with frequency-inverter**  
**Pole-changing motors**  
**Water-cooled motors** for continuous operation

### STRUCTURAL FEATURES:

- Stepless speed control of standard asynchronous motors
- Full nominal torque from standstill to nominal speed
- Automatic mooring operation possible
- Asynchronous motors are maintenance-free
- Frequency-inverter with high power factor

### ADVANTAGES:

The following are the advantage of winches with frequency-inverters as opposed to winches with pole-changing motors and hydraulic drives:

- Reduced expenditure for the shipyards on cabling.
- The noise level is considerably lower, being a major improvement, especially on passenger vessels.
- The speed control is steplessly variable. In addition high slack hawser speeds are possible (between 3 to 4 times nominal speed).

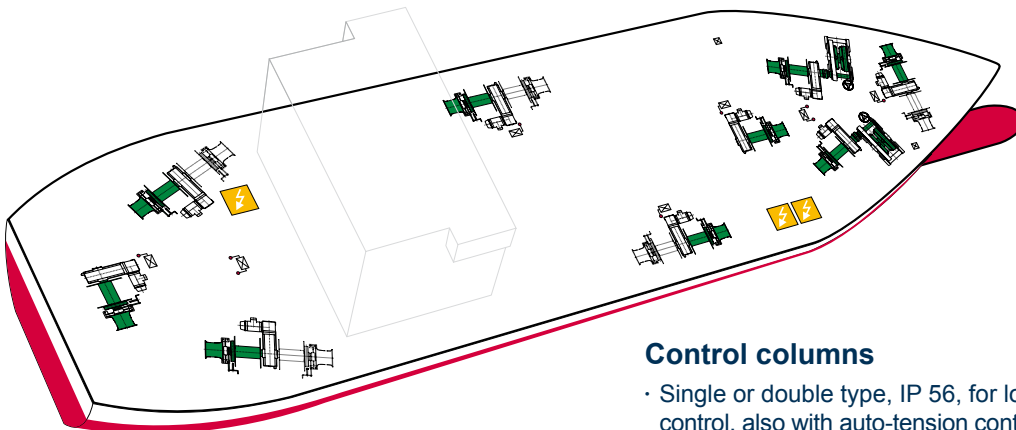
## ELECTRICAL DRIVING SYSTEMS FOR WINCHES

### Asynchronous motors with frequency-inverter

- Reduced load on the current supply network, as there are no high starting and change-over currents as in the case of pole-changing motors.
- The wear of contactor contacts is reduced considerably, as switching under load is no longer necessary. No light arc is produced which gradually burns off the contacts.
- The mechanical motor brake is subjected to almost no wear, because it is only applied at zero speed. Motor reversing requires no mechanical braking application.
- For emergencies, in case the inverter fails, there is a bypass switching in the contactor cabinet which allows motor operation without the inverter in both directions with nominal speed from the control columns.
- There is no difference in price if auto-tension for the winch is required.

### A.C. electrically driven deck machinery system

With or without auto-tension



### Control columns

- Single or double type, IP 56, for local and / or remote control, also with auto-tension control, with space heating
- Remotely controlled cable lifter brakes and chain length measuring device are available starter controller

### Starter controller

- IP 54, with electronics for winch control, also with electronic unit for auto-tension operation, with space heating, ammeter and hourmeter

Illustrations, technical data, weights and dimensions are subject to alteration without previous notice.