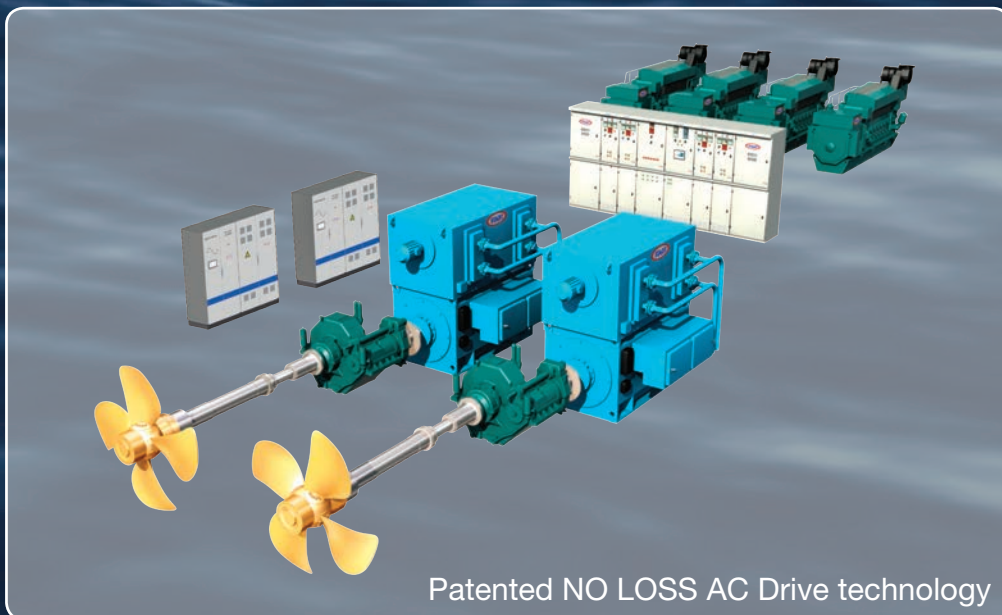




POWER TECHNOLOGY

## Company Info



# Integrated Electric Propulsion Systems

STADT AS was founded in 1986. For nearly 25 years, STADT has developed, manufactured and installed AC motor-drives, process controls and integrated electric propulsion systems for ships.

STADT has always been focusing on development of SUSTAINABLE SOLUTIONS that will have a positive impact on the environmental issues in a global scale. The aim has always been to develop power inverters for ship applications. In 1997, after several years of intensive developments, an innovative and very modern inverter series was launched. A major advantage of these inverters was the very compact design due to effective direct water cooling.

STADT's latest product is the innovative patented STADT STASCHO, hybrid electric converter, first used in ship-propulsion system. STADT has recently signed several contracts for various ships to use the STADT STASCHO full electric ship propulsion system, and has gained major experience with the system during the project MV "Sanco Star", a seismic research vessel with 5000 kW electric propulsion, delivered in 2008.

STADT is a supplier of totally integrated electric systems, including generators, switchboards, motor drives / inverters, power management systems, integrated alarm and monitoring systems, electric motors, etc.



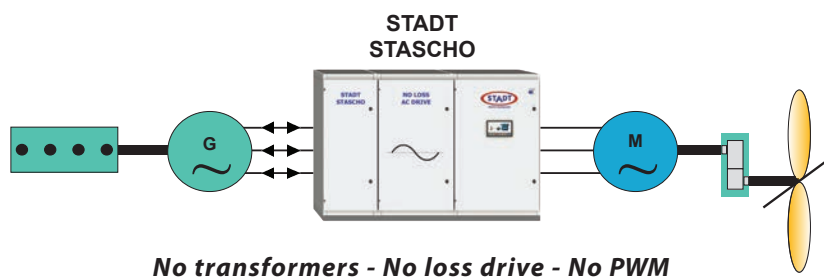
# NO LOSS AC DRIVES

## For gas-or diesel-electric propulsion



### STADT - Technology for the future

The sustainable technology has proved huge advantages compared to traditional PWM-technology. STADT STASCHO has no electric losses and eliminates the electric disturbances. This technology is perfect for full-electric ships.



### For civil and military vessels

Through the development of the STASCHO, STADT has put great effort in designing a converter system that can serve without major maintenance for more than 25 years. This has been possible by eliminating some of the components with limited life time typically found in PWM drives.

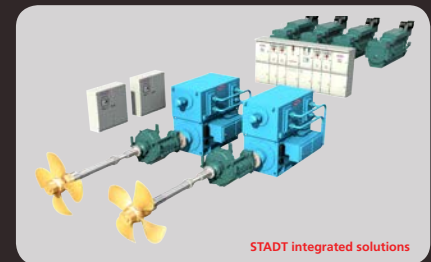
### Fuel- and emission-reduction up to 45 %

Fuel savings up to 45 % are achievable by using the STADT STASCHO in ship propulsion system. This is possible due to optimal operation of generator sets, and the no loss electric AC-motor control for the propellers. Pollution from CO<sub>2</sub>, NO<sub>x</sub>, SO<sub>x</sub> is reduced equally.

**- Specify STADT STASCHO, it will pay off.**



### SUSTAINABLE ELECTRIC PROPULSION

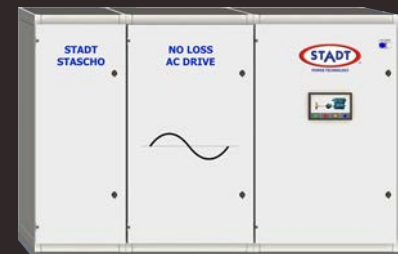


#### NO LOSS AC Drive Technology

STADT STASCHO supplies sinusoidal voltage and current to the electric motor and back to the main switchboard. This gives very low harmonic disturbances in main switchboard and motor, without using transformers or filters. The STADT STASCHO is available in powers up to 100 MW in all voltage classes from 220 V to 15 kV.

#### STADT STASCHO - SUSTAINABLE TECHNOLOGY

- Reduced fuel consumption, by up to 45 %
- Reduced NO<sub>x</sub>, SO<sub>x</sub> and CO<sub>2</sub> emission
- Reduced maintenance and high redundancy
- Reduced noise and no EMC problems
- Highly reliable, compact system
- No transformers needed
- Lifetime more than 25 years
- For shaft lines - or azimuths, gas or diesel fuel





## STADT SWITCHBOARDS MV

Custom made switchboards for marine and industrial applications.

Rated voltage: 1 - 15 kV

Rated current: Up to 4000 A



## STADT SWITCHBOARDS LV

Custom made switchboards for marine and industrial applications

Voltage: 230, 380, 400, 440, 460, 660, 690 V



## STADT STASCHO

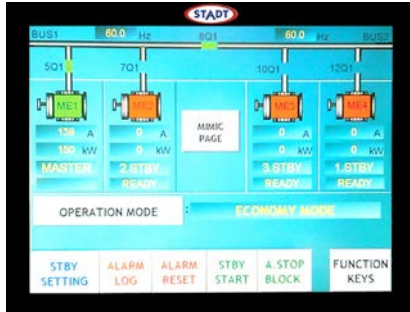
STADT STASCHO is a No Loss AC drive that supplies sinusoidal voltage and current to the electric motor and back to the main switchboard. This gives very low harmonic disturbances without using transformers or filters.

In power up to 100 MW and 15 kV



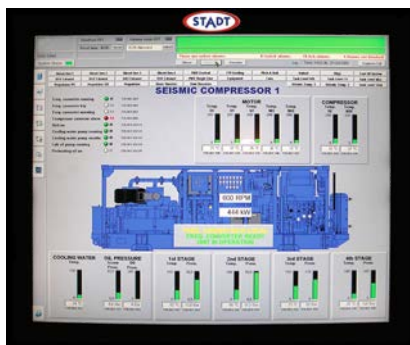
## STADT Electric Motors

Electric motors for marine and industrial applications. Many types of designs, and ship approvals.



## STADT Power Management System

STADT power management system (PMS) is designed for managing the power generation and distribution, satisfying class requirements and based on proven marine practice.



## STADT Integrated Alarm System

Custom made IAS which is built according to class requirement and proven marine practice.



## STADT TRANSFORMERS

Power range: 1 kVA - 25 MVA  
Voltage: 110 V - 12 kV

Cooling: Air or water



## STADT Generators

Generators for marine and industrial applications.

Cooling: Air or water.



## STADT NFO Sinus Drives

Patented frequency converter that generates a pure sinus voltage to the motor.  
No EMC problems.

5 Years warranty against bearing current failures



## STADT Frequency Converters

PWM type of drive in low and medium voltage range from 220 V up to 6600 V

Models up to 10 MW



## STADT Softstarters

Digital starters for AC motors

Voltage: 110 V - 15 kV

Power: 1 kW - 25 MW



## STADT Process Controllers and PLC

We make customized solutions for process control, based upon PID controllers and PLC systems.