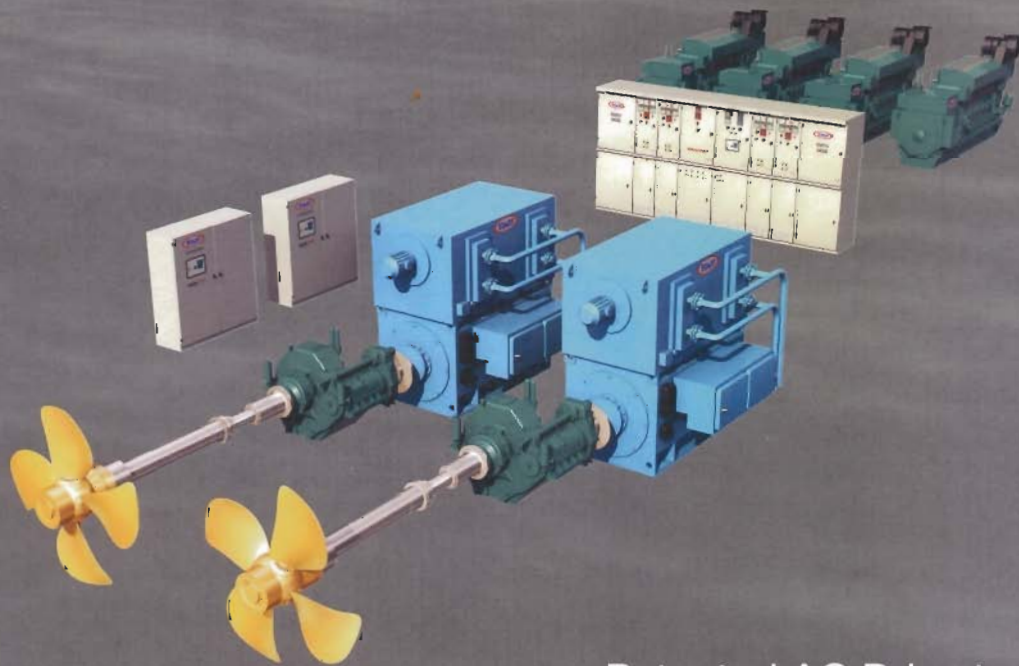




POWER TECHNOLOGY



Patented AC Drive technology

Integrated Electric Propulsion Systems

The history of STADT



The picture shows founder, Hallvard L. Slettevoll, back in 1986 when he started the business in Gjerdsвика. Four years ahead of this, he worked as a trainee for Philips, in Holland and in Oslo. There he got the idea to start up a business based on the research work carried out by Philips in the field of frequency converters. With the Philips knowhow in the suitcase he returned to his home village, and founded his own company.

With a location in the middle of the maritime cluster on the west coast of Norway, 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. The first STADT delivery went to the Norwegian coastguard K/V

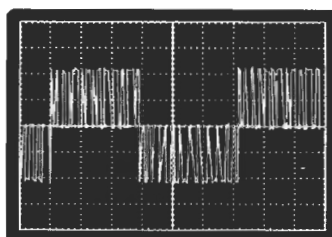
Tromsø. This was a breakthrough, and the business improved rapidly. The main business area for the new inverters, made in powers up to 3500 kW 690 V, was for diesel-electric main propulsion of ships, as well as offshore applications on oil rigs and for industrial use. Companies like TFDS - Hurtigruten, Geo Shipping, PGS, Sanco Shipping, Aker, Statoil, Hydro, BP and Bayer AG became regular customers.

In 2001 the watercooled STADT IGBT-converter, business, based on PWM technology, was sold to ABB, which incorporated them into their marine product range.

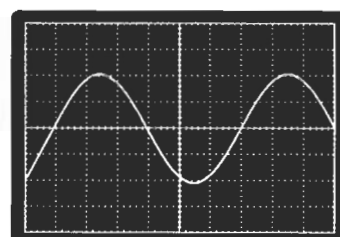
After 2001 - STADT has been working with development of the next generation AC drives, the STADT Stascho. This new technology, based on sinus control, was patented in 2008, and launched to the first ship applications the same year.

STADT - Technology leaders in AC Drives

Long experience from development of motordrives has resulted in the new generation of patented STADT SINUS-technology. This has huge advantages compared to traditional PWM-technology, since it is free from electric disturbances. The STADT Stascho is also a very efficient power drive system with only 6% electric system losses, including the losses in generator and electric propulsion motor.



PWM

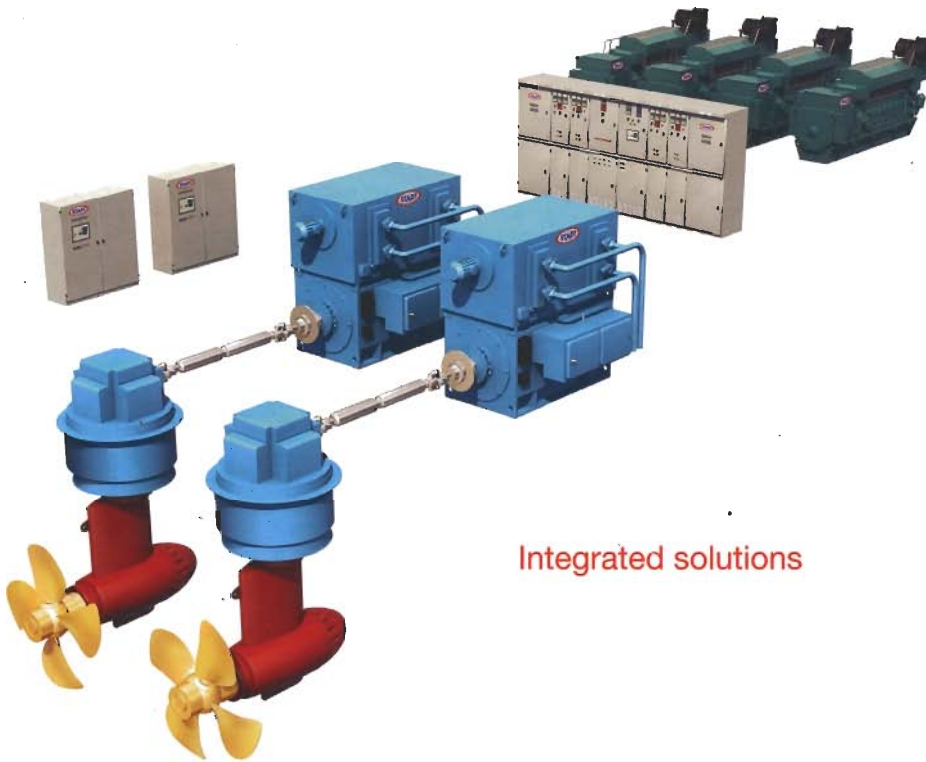


Sinus

-The difference in drive technology-

STADT Stascho

Patented Sinus Technology



Integrated solutions

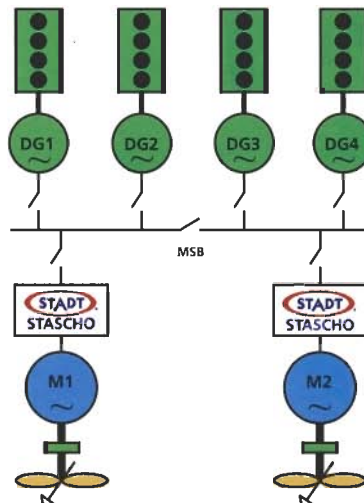
Environmentally friendly propulsion systems

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.

- Reduced diesel consumption, by up to 45 %**
- Reduced electric losses in systems, only 6 %**
- Reduced NOx, SOx and CO2 emission**
- Reduced maintenance and high redundancy**
- Reduced noise and no EMC problems**
- Highly reliable, compact system, no transformers needed**

The STADT Stascho can be delivered up to 50 MW in voltages up to 15 kV.

The STADT Stascho combined with CP propellers, assures the highest manoeuvrability.



AC Drives



STADT NFO Sinus



STADT Penta



STADT FC-T



STADT Stascho

Motors



AC motors up to 25 MW



POWER TECHNOLOGY



STADT AS

Molovegen 2, N-6083 Gjerdsvika, NORWAY

Tel.: +47 700 25 800, E-mail: info@stadt.no, www.stadt.no