



Diving deep for customized solutions in electronics

Specialized in rugged design for use in submarines, naval ships or other demanding environmental circumstances

Nöjdhs

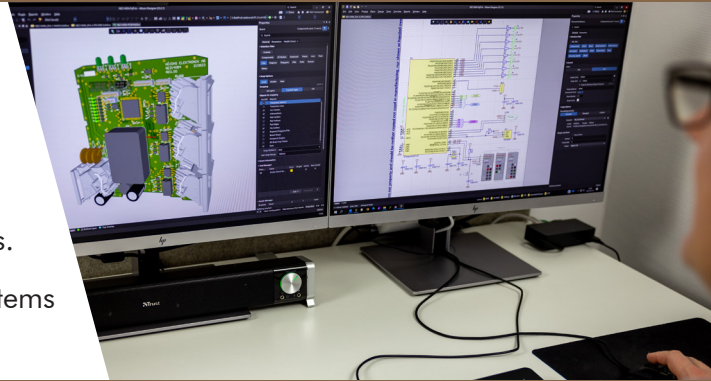
Solutions and services

Electrical System Design

Electrical systems for ships and for the industry are designed and produced. Production of cabinets and installation of the hardware is handled by our own personnel or together with subcontractors.

We are specialised in rugged design for use in submarines, naval ships or other demanding environmental circumstances.

Evaluation of electrical distribution and power generation systems is made from a safety and reliability point of view.



Mechanical Design

From the numerous components and systems we delivered for submarine and naval applications, we have developed a certain skill for packaging of electronics and equipment. Especially for systems on submarines the space restrictions are challenging.

To achieve the highest possible packing density for our systems we use a 3D CAD system. Electronic as well as mechanical prototyping is made within our facilities. We manufacture the majority of our mechanical details in-house through the use of CNC machines and 3D printing.

Due to our experience from defence projects we are also used to handle other special design requirements, such as resistance to water pressure, shock resistance and low noise emission.

In-house pressure testing can be made up to 70 bar. We also have the ability to verify that our systems fulfil the shock requirements by using a simulation tool. In-house environmental test can be done ranging from room temperature plus 5 °C up to 300 °C.

A natural part of our mechanical design is EMC, which means most of our products are built in EMI safe housings.

In addition to our internal test facilities, we hire external test Laboratories when deemed necessary to carry out certified tests of shock, vibration, EMC or other environmental requirements.



Automation

For larger systems we use PC or PLC based control. Various brands of PLCs are used according to customer requirements. Smaller systems can often be handled by tailor-made control circuits with microprocessors.

HMI (Human Machine Interface) are built with graphic control panels or PC based SCADA systems (Supervisory Control and Data Acquisition).

Evaluation of control systems are made from a safety and reliability point of view.

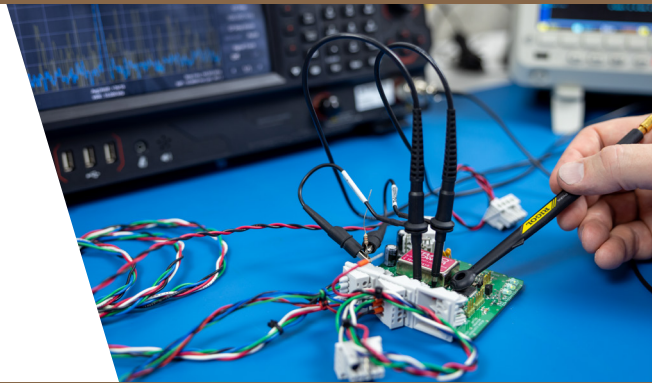
We design customer specified systems for automatic testing. Automatic test systems are also designed and built for evaluation and testing of our own products.



Electronic Design

Many of our designs include microprocessors for optimal flexibility. DSP:s (Digital Signal Processor) are used in the audio field as well as in motor controls.

Our large and long involvement in electronics for submarines has enabled us to develop a major skill in making compact design. We normally use surface mounted components unless otherwise is required. We build and test most of our products at our own facilities. EMC requirements are taken into consideration already during the design phase.



Maintenance and Repair

Periodic maintenance is planned and conducted in cooperation with the customer. We have participated in 1-year and 6-year overhaul of submarines in the Swedish Navy as well as for other nations.

A few examples of assignments in the submarine area:

- Manoeuvring systems
- Diesel control and monitoring systems
- Generator control and monitoring systems
- Weight control systems
- Battery monitoring systems

Maintenance and repair work for advanced electronic equipment can also be done in our own facilities both in Singapore and Sweden. As our personnel is involved in maintenance as well as in development of new components and system, we have the best possibilities to locate problems in electronic equipment.

If components in equipment sent for repair have turned obsolete, we have the resources to develop equivalent solutions.

We have an extensive range of instrumentation and calibration is made regularly. For regular service/repair of equipment we often design and build our own automatic test systems.



Power Electronics

Normally we are working with speed control and start of induction motors. However, systems with PM synchronous motors, DC motors and step motors are used for special applications.

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One of our most famous submarine products is the DC/AC-converter called NEDA, which was born 1987 in a digital version. Today we work with the fifth generation and totally more than 280 units of different sizes have been delivered for various navies around the globe.





About us

Nöjdhs Elektronik AB and Nojdhs Underwater Technology PTE LTD belongs to the group TN Development AB.

Nöjdhs Elektronik AB was founded in 1985 by Thomas Nöjd, who has a background in the Swedish Navy and in Kockums AB's submarine electrical design department. Nöjdhs Elektronik AB were one of the first companies in Sweden to use a PC-controlled milling machine for fast production of prototype PCBs.

The company has grown steadily, from 6 employees in 1990 to today's 35 employees divided on two locations, Singapore and Sweden.

Our customers are found mainly in the defence and in the industry. Defence related assignments, particularly in the underwater sector have helped us establish a special competence within this area. Defence projects have also set the standard for the quality and reliability of our products.

We provide customer specific designed solutions and production of electrical and electronic systems. We are specialised in rugged design for use in submarines, naval ships or other demanding environmental circumstances.

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