NORIMOS 3000
The alarm monitoring and control system from Noris Automation GmbH is a world-wide known system. Present at marine industry for more than 50 years. The system represent state of the art configuration with scalable and flexible solutions from small work-boats to large and advance ships.
TECO Electronics AS has years of experience of customizing the alarm and monitoring systems on request for our customers.

We have for many years supplied turn-key solutions for the maritime and off-shore market. With our 20 years of experience we keep a close relation to our customers. We provide cost-efficient solutions based on the specific needs. Our organisation is transparent and flexible. Supplying the most modern systems available at all times. TECO Electronics AS will always aim for delivery of the most correct scaled system, but yet to inform all participants of the option to the next step.

**TECO Electronics AS is a world wide supplier of service.**

Your fleet might not be trading in just one area. We keep track of your vessels and can supply service world wide. To be able to do just that we have offices with our workshops and our service-engineers located at strategic places;

- Porsgrunn, Norway. (Head office)
- Rotterdam.
- Singapore.

**TECO Electronics AS focus on environment and safety.**

TECO Electronics AS aims to use the most environmental friendly processes available and are committed to constantly evaluating and improving our environmental performance by:

- Ensuring that our operations are in compliance with national and international rules and regulations.
- Maintaining and developing production methods that ensure reuse of electronic and automation systems.
- Offering solutions that minimize the energy consumption within the areas that we can influence.
- Ensuring that we use recyclable material in both production and packing as much as possible.
- Evaluating methods of freight forwarding and travel procedures for service engineers.
- Evaluating environmental performance of office and support operations.
- Committing to the reduction of energy consumption, waste and emission.

TECO Electronics AS environmental policy directs all employees to recognise, be committed to and actively contribute to constantly evaluate and improve the environmental performance of TECO Electronics AS.
TECO Electronics AS is proud to present NORIMOS 3000. The choice of the most competent IAMCS system. The NORIMOS 3000 is flexibly applicable, robust and easy to maintain:

- Simple and fast system configuration via modular system architecture
- Extremely robust and insensitive to interference, can be deployed in the engine room in the immediate vicinity of the engine
- Failsafe through redundant CANbus system and intelligent signal processing directly in the components
- Easy to maintain by simple system structure and intelligent failure diagnosis

**Multi Master System**
Up to three slave boxes and one display are connected via the iBus to a master box, forming a decentralised, independent sub-system. Multiple sub systems as well as any other extensions (e.g. visualisation PC, signal unit) make up the total system (IAMCS) via the redundant CANbus.

**Basic Components**
Analogue and Binary I/O Boxes
I/O boxes are the decentralised measuring, monitoring and control units of the N3000 system. They are intended for installation in switch cabinets and operating consoles near the sensors and actuators they control.

- Different types available (master/slave)
- 32 I/Os, of which 24 are configurable at users’ option
  - via hardware I/O cards and via software respectively
- 32 status LEDs for displaying the signal status
- RS232/-422/-485 interface (e.g. printer)
- Easy integration of third-party systems via MODUS
- Internal fault diagnosis
- Fail-safe via redundant CANbus system (master only)
Dialogue Unit
The dialogue unit is a high resolution graphic LC display for detailed local visualisation of decentralised measuring, monitoring and control processes. It is intended for installation in switch cabinets or operating consoles in the ER or ECR.

- Detailed display of all sub-system channels, including the channel details
- Graphical channel display as bar graph
- Display of system information of the sub-system
- Visual and audible alarming and acknowledge function
- Individually configurable display pages
- Display of channels sorted by topics

Signal Units
Signal units indicate the channel status of 24 user-defined channels and can be optionally equipped with additional useful functions. These units are intended for installation in operating consoles or switchboards on the bridge or in crew accommodations.

- Different types available (master/slave)
- Visual alarm via 24 status LEDs (one 3-coloured LED per channel)
- All channels can easily be text-labelled in different colours
- Audible alarm and acknowledge function (optional)
- On duty function (optional)
- Independent visual and audible fire alarm unit (optional)
- Fail-safe through redundant CANbus (master only)
Duty Alarm System
The duty alarm system consists of high resolution graphic LC displays optionally equipped with an alarm group indication. It visualises measuring values and the status of the CANbus-communicated system channels. The displays are intended for installation on the bridge, in crew accommodations or in the ECR.

- Visual alarm function
- Audible alarm and acknowledge function
- Engineer-Call function
- Integrated and independent visual and audible fire alarm unit
- Duty hand-over

Visualisation PC with NORIVIS 3000
The visualisation PC presents an extensive range of measuring, monitoring and control processes in text form as well as graphically. It is intended for installation, for example, on the bridge and in the ECR.

- Seaworthy PC with customisable graphic and text elements plus NORIVIS 3000 visualisation software
- Visualisation of measuring, monitoring and control processes of the N3000 system
- Well-arranged user interface
- Access protection with specific authorisation
- Password protected parameter settings
- Language switching
- Executable under Windows and Linux
- Fail-safe through redundant CANbus
Monitoring and Visualisation of Measuring Data
A comprehensive range of measurement data can be evaluated and displayed in a well-organised manner by NORIVIS 3000 visualisation software.

- Combined presentation of text and graphic elements
- Display of measured values in table form
- Display of alarms in dynamic alarm lists
- Alarm history
- Display of channels in functional groups
- Generation of trend curves

Customizing screens and layout
The screens and layout are individual to each customer. All vessels and offshore rigs have their own needs to be addressed. By develop layout in close cooperation with the customer we ensure a good and safe working environment for the operator.
Engine Safety System
This compact, robust engine safety system has been designed to monitor a combustion engine’s elementary operating parameters. It is the central unit for activating an emergency-stop to prevent the engine from being damaged. Its compact, robust design makes it ideally suited for use in vessels, e.g. in the engine room mounted directly on the engine.

System Features
- Very compact and robust for rough environments
- Signal status display of 24 channels with three-coloured LEDs
- Purely digital signal processing
- Crystal-accurate speed measurement for the highest possible degree of safety and accuracy
- Reliable and fast emergency shut down of the engine
- Power supply monitoring
- All inputs earth fault monitored
- All inputs wire break monitored
- Integrated wire break test
- Emergency stop button with hinged protecting hood
- Application specific write-on text fields with coloured background
- Over speed limits for numerous engine types already pre-programmed
- All connections pluggable (optionally with screw terminals or cage clamps)

Engine Safety System Plug-and-Play Retrofit
Between 1980 and 1995, NORIS KN923 series engine safety systems were produced particularly for the engine manufacturer Deutz. After more than 20 years, these systems can no longer be maintained or repaired due to the discontinuation of components on the market. We recommend preventative replacement with our RETROFIT concept from the KN3-923 series.
NORIMOS 1000/2000 upgrade to NORIMOS 3000 Plug-and-Play Retrofit

NORIS-RETROFIT solutions streamline your automation equipment reliably and ensure safe operation by state-of-the-art components used in numerous new buildings as well as retrofitting projects.

- Future-proof operation thanks to state-of-the-art technology
- Maintenance and spare part availability for more than 15 years after official product line termination
- One-to-one replacement of existing automation components and integration of additional functions
- Fast and easy servicing thanks to pre-engineered components
- Customized panel and cabinet sizes fitting nearly every mounting location
- “Plug-and-play” replacement solutions available for many existing NORIS products
- Approved by ABS, BV, DNV, GL, LR
- All NORIS-RETROFIT solutions offer a high “Return on Investment”

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