

# NautoSteer

## Advanced Steering

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Wherever you navigate.  
**We are with you.**



In the past decades, thousands of seafarers relied on superior steering performance delivered by Anschütz steering gear control systems.

NautoSteer AS is a modular system with built-in reliability thanks to CAN bus technology and integrated safety features such as a permanent steering failure monitoring.

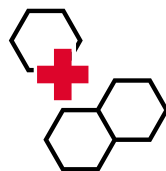
## Key Benefits



### Reliable steering performance

Anschütz steering gear control systems are well recognized for precise steering performance and reliability.

- Best performance thanks to proven Anschütz steering algorithms, integration of highly precise auto-pilots
- Fail-safe principle and built-in reliability with CAN bus technology and integrated safety features
- Clear operation for the crew in emergency situations thanks to a secure fallback position



### Versatile functional range

NautoSteer AS includes useful features that support safe, comfortable and more efficient operation.

- Multiple steering positions and components can be used
- Intuitive and user-friendly operation with take-over function and give-over function
- Consistent haptic and operation of all components
- Customized steering stands and rudder angle indicator systems



### Easy installation and servicing

Installation and wiring are fairly simple and offer benefits to shipyards, integrators and owners:

- Installation with standard cables, computer-based commissioning, and configurations via software
- Modification or extension by simply adding components to CAN bus and power supply
- Less error-prone and less expensive than conventional systems
- Global service network in case you need help

## Learn more



### NautoSteer Advanced Steering

Visit the website to learn more about NautoSteer AS and products related to safe and reliable steering:  
[www.raytheon-anschuetz.com/nautosteer](http://www.raytheon-anschuetz.com/nautosteer)



# Main Features

## Built-in reliability and safety

- **Integrated safety features**  
NautoSteer AS is based on reliable CAN bus technology and includes integrated safety features such as wire break monitoring, permanent steering failure monitoring, and data integrity monitoring.
- **Simple change-over of steering modes**  
The central element of NautoSteer AS are two independent modes: "NFU direct" and "Main". This supports transparent and intuitive operation – the crew benefits from fast and safe decision making when time is crucial.
- **"NFU direct" mode as secure fallback position**  
The NFU direct tiller can be used immediately in an emergency. It controls the steering gear directly by switching a control voltage – no use of further electronics.
- **Comfortable steering in "Main" mode**  
In "Main" mode the CAN bus based steering gear control system is activated. This mode allows steering of the vessel with steering controls such as follow-up tillers, non-follow-up tillers or autopilot steering.
- **Take-over and give-over of steering positions**  
The steering control is activated directly at the steering position with a take-over function. Alternatively, a dedicated steering control position can be activated by use of a steering mode operator unit (give-over function).
- **Robustness proven in naval use**  
NautoSteer AS is extremely reliable. It can be even configured and hardened to meet most stringent of naval requirements, including those for naval combatants and aircraft carriers.

## Advanced steering components

NautoSteer AS enables cost-effective standard configurations, but also sophisticated and customized systems. Steering gear control systems are available for ships with single and double rudder, solenoid and proportional actuators, and fore and aft workstations – where required with integration of third party components.

Further system components are Anschutz autopilots NP 5000 and PilotStar NX that are well recognized for superior steering performance and an extended range of functionality for safe, comfortable and efficient steering. All system components have a modular mechanical design for simple installation in consoles, frames and steering stands.

Rudder angle indicator systems can include a 270° panoramic indication as well as indicators with different sizes, scales, type of installations and protection grade. Steering stands and steering frames are available as customized, turn-key solutions, delivered pre-wired, configured and fully tested for fast, simple and cost-efficient installation.

Learn more



Fuel saving autopilots

[www.raytheon-anschuetz.com/products/autopilots](http://www.raytheon-anschuetz.com/products/autopilots)

Learn more



Steering control systems

[www.raytheon-anschuetz.com/products/steering-control-systems](http://www.raytheon-anschuetz.com/products/steering-control-systems)

# NautoSteer AS system components



Tiller non follow-up direct



Steering mode selector switch AS



Steering mode operator unit AS



Handwheel follow-up AS



Tiller non follow-up AS



Tiller follow-up AS



Rudder mode operator unit AS



Override signal unit AS



General override signal unit AS



Alarm signal unit AS



Take over operator unit AS



Follow-up amplifier AS



Follow-up amplifier proportional AS



Rudder feedback unit AS



CAN-bus distributor AS



Alarm status interface AS



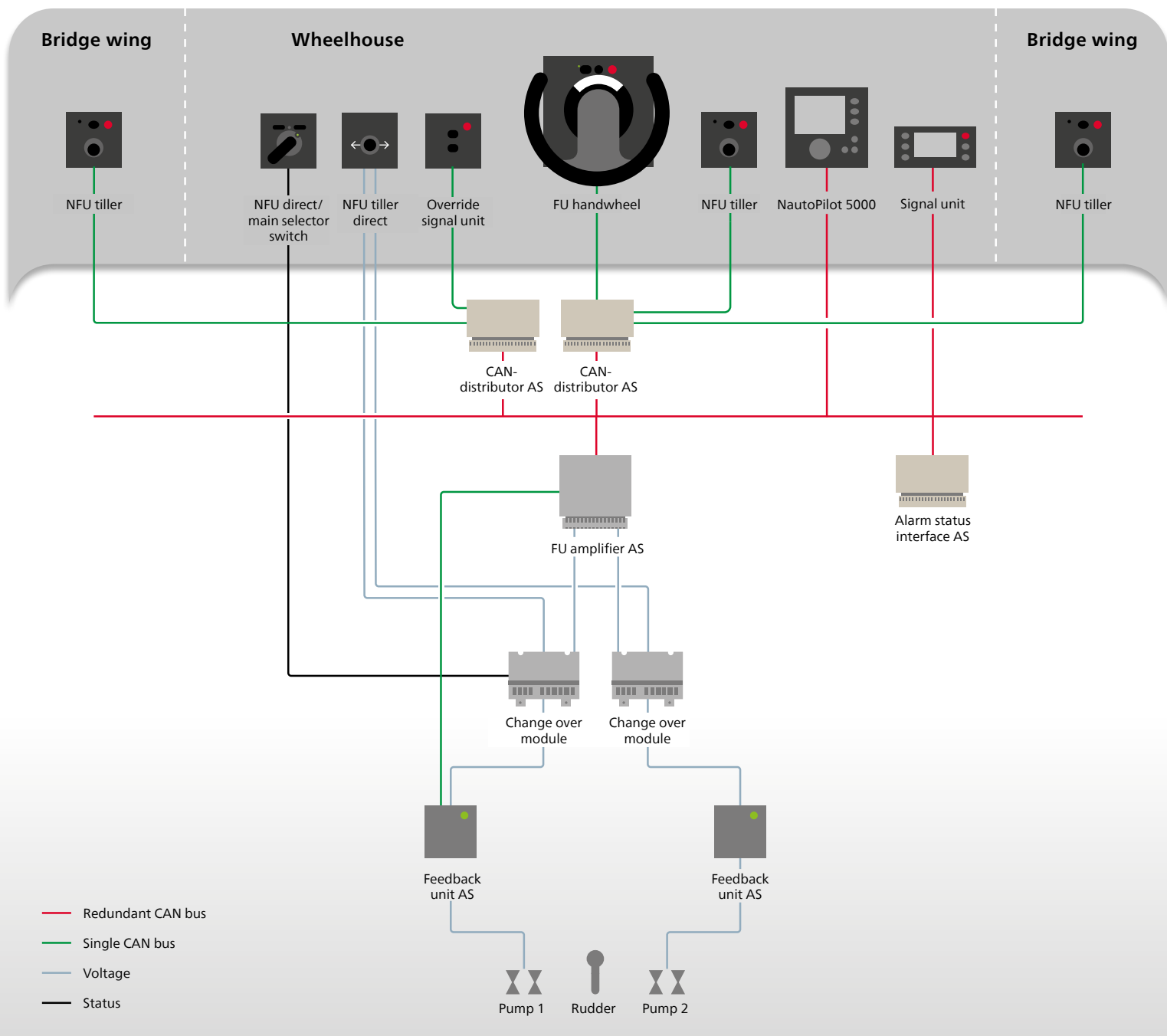
Gateway dual LAN AS



External steering interface AS

# Dual NFU direct and follow-up

## CAN bus steering gear control system for a vessel with single rudder

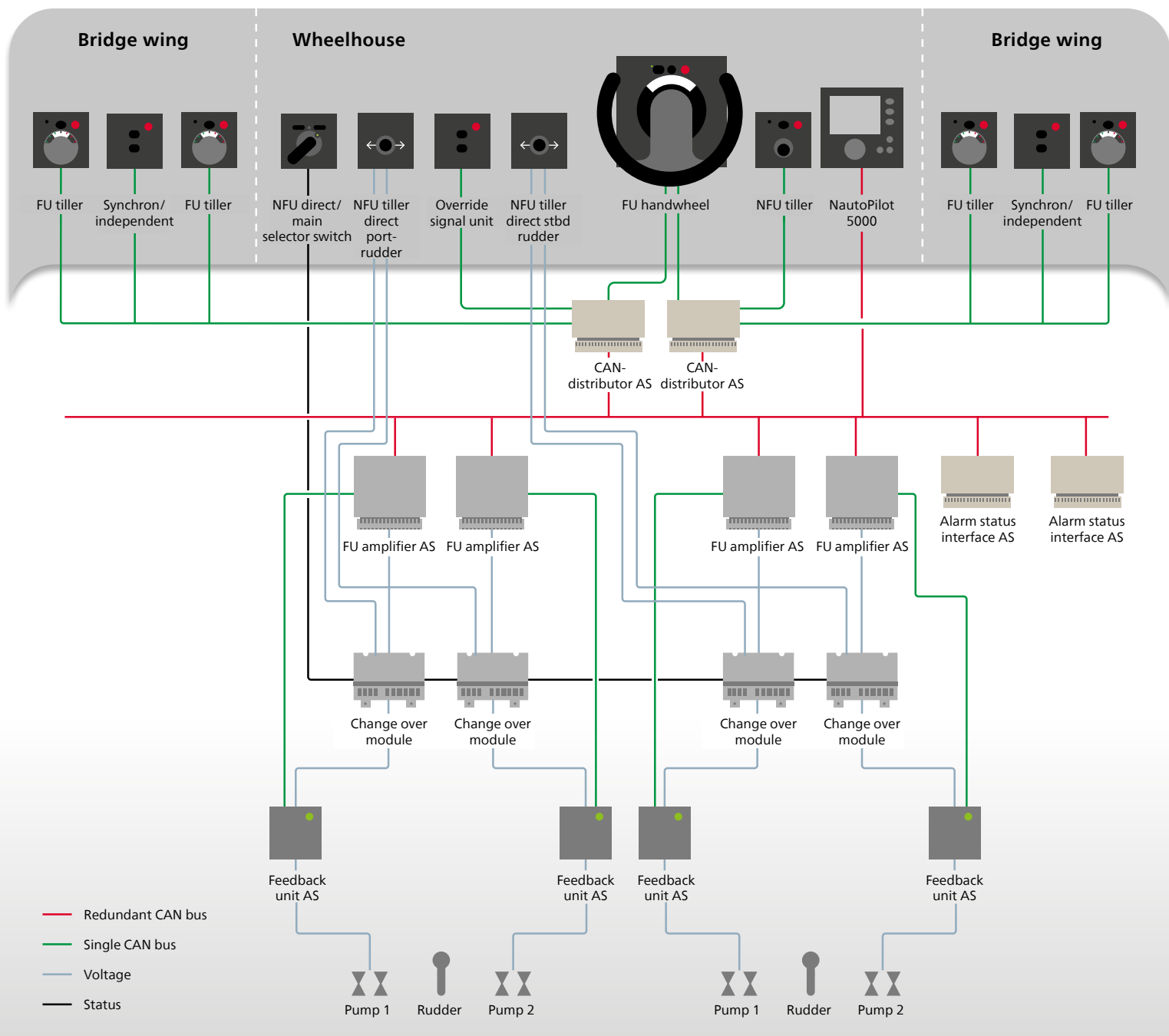


In "NFU direct" mode the NFU Tiller direct operates the valves/pumps of the steering gear directly. The override signal unit is used for override of autopilot or other controls.

In "Main" mode the FU Handwheel and therefore the CAN bus based steering gear control system is activated. Other controls can simply be activated at the steering control position with a take-over function. The valves/pumps are operated with one FU Amplifier. Thus this system provides two completely independent steering gear control systems.

# Dual NFU direct and dual follow-up

## CAN bus steering gear control system for a vessel with dual rudders



In "NFU direct" mode two NFU Tiller direct operate the valves/pumps of the steering gear directly. Both rudders are controlled independently from each other. The override signal unit is used for override of autopilot or other controls.

In "Main" mode the FU Handwheel and therefore the CAN bus based steering gear control system is activated. Other controls can simply be activated at the steering

control position with a take-over function. The user can decide if the rudders are controlled synchronously or independently by use of the Rudder mode operator unit. Both valves/pumps of a rudder are operated with separate "FU Amplifiers".

Thus this system provides two completely independent steering gear control systems plus additional redundancy in the "Main" mode.

# Why decide for working with Raytheon Anschütz?

Raytheon Anschütz has strong expertise in steering systems and steering system integration. Raytheon Anschütz also stands for flexible handling of customer requirements, reliability and continuity in customer relations and excellence in customer service.

When deciding for Raytheon Anschütz, customers will always benefit from individual and dedicated customer service. After sales, customers can rely on a variety of services including highly qualified technical support – worldwide, wherever they navigate.

## Dedicated project management

- Experienced individual support from early system layout to setting in operation
- Coordination and project planning in project-specific engineering teams
- Competent advice regarding IMO and class requirements
- Intimate knowledge in products and technical feasibility
- Firm, reliable project processing and delivery as promised
- Technical support with the know-how of a manufacturer
- Total system design including wiring, circuit and connection diagrams
- Meticulous product and system testing
- Approvals, factory acceptance test, setting to work

## Worldwide first-class technical support

- 365/24/7 service coordination and support for all products delivered
- High transparency and regular updates about service status
- Reduced administrative workload for customers
- Global network with own hubs in Germany, Singapore and Panama
- Performance monitoring and training program for more than 200 service stations
- Proven spare part supply chain with 20+ large depots
- Maximum uptime thanks to highest first time fixed rates
- Customer-orientated after sales management
- Maintenance contracts

