

Completely Integrated Solutions
for the Navy

SINAVY^{CIS} DRIVE MV

High-performance
and cost-effective operation:
state-of-the-art diesel-electric
propulsion systems for
naval vessels

Your Success is Our Goal

SIEMENS

Industrial Solutions and Services

Electric propulsion systems are gaining importance in naval shipbuilding. They are clearly superior both technically and in operation to conventional diesel or gas turbine drive systems in almost all areas. Thanks to their flexibility and versatility, electric propulsion systems can easily be customized to meet the widest range of demands. Extremely quiet and low in vibration, they are perfectly suited for use on board navy ships, also in combination with diesels or gas turbines.

SINAVY^{CIS} DRIVE MV – powerful and economical to operate

Since 1886, when the first ship ever was fitted with electric propulsion by Siemens a huge number of commercial ship and submarine operators were relying on our solutions. In times of growing environmental awareness of the public and climbing oil prices it seems only natural, that navies are considering electric propulsion for their future surface fleets as well. Be it full electric or hybrid propulsion SINAVY^{CIS} DRIVE MV provides a solution based on better efficiency, redundancy, availability and reliability, as well as reduced signatures, lower emissions, less maintenance and life cycle costs.

SINAVY^{CIS} DRIVE MV – our solution in detail

Drive systems utilizing the advantages of AC technology currently play the leading role on the world market. For almost unlimited performance range, Siemens offers the following drive systems:

Eight good reasons for SINAVY^{CIS} DRIVE MV at a glance

- Signature reduction
- Shock proof
- Highest efficiency at all speeds
- Flexible and needs-oriented utilization of the diesel or gas turbine generators
- Redundant design ensures the availability of the drive
- Maintenance-friendly, modular design
- Longer service intervals reduce maintenance costs and downtimes
- Reduced pollution emission of the combustion engines through optimum speed and optimum load range operation



SINAVY^{CIS} DRIVE MV SINAMICS GL150 –

load-commutated inverter with synchronous motor.

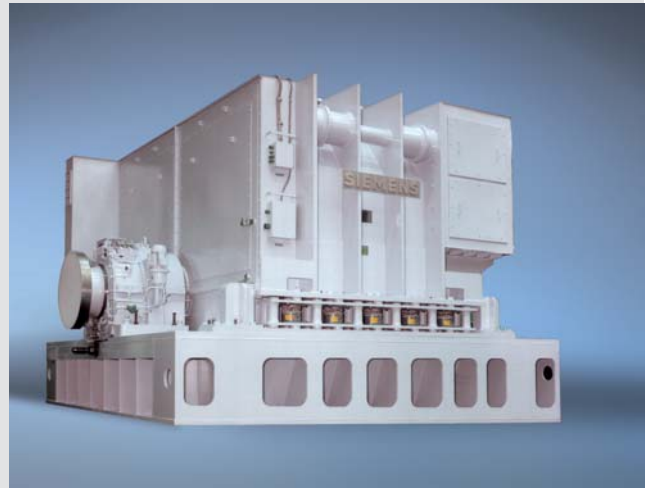
The SINAVY^{CIS} DRIVE MV SINAMICS GL150 most resembles the familiar DC drive and consists of a rectifier, a connection to the power source, an inverter as well as the synchronous motor. Supported by the ROTOS control, the SINAVY^{CIS} DRIVE MV SINAMICS GL150 demonstrates the characteristic properties of a DC drive.

SINAVY^{CIS} DRIVE MV SINAMICS GM150 –

pulse-modulated converter with synchronous or asynchronous motor.

The medium-voltage version of the SINAVY^{CIS} DRIVE MV SINAMICS GM150 is available for voltage ranges of up to 4,160 V. In the standard version, the system consists of a 12-pulse diode-rectifier input bridge. In the medium-volt converters, IGBTs or ICGTs are utilized as performance semiconductors.

The highly reliable SINAVY^{CIS} DRIVE MV SINAMICS GM150 converters are available both as air or freshwater cooling versions. Thanks to their simple construction and flexible compact design, they are easy to integrate into the existing environment aboard ships.



Agile and maintenance-friendly

All propulsion systems of the SINAVY^{CIS} DRIVE MV family stand out in terms of their extraordinary response characteristics, from zero to maximum propeller speed. The propeller can be operated at maximum torque over the entire speed range. Reverse maneuvers can be accomplished in a very short amount of time. SINAVY^{CIS} DRIVE MV drives are extremely quiet and low in vibration, despite their enormous performance level.

Thanks to the optimized operation of the combustion engines at a constant speed, downtimes, maintenance expenditures and maintenance costs are reduced with SINAVY^{CIS} DRIVE MV drives. The modular design of the system also facilitates required repair tasks. Redundant components ensure that SINAVY^{CIS} DRIVE MV drives remain functional in the event of damage.

Trend toward electric propulsion technology

Electrical propulsion solutions, in which the required power is produced by gas turbines or diesel generators, are commercially utilized in numerous variations on hundreds of ships and are gaining importance for many navies' new buildings to meet the demands of the modern world.

www.siemens.com/marine

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CIS = Completely Integrated Solutions

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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SINAVY^{CIS} – Completely Integrated Solutions for the Navy

As a comprehensive industry-specific solution for naval vessels, our SINAVY^{CIS} product family integrates all the products and services you need for sustained maximization of your ship's performance.

For each particular task, a solution has been defined that

- **horizontally** improves all of your ship's operations
- **vertically** integrates the ship's information and security management end-to-end, helping to make better-founded decisions
- and, at the same time, is designed for optimal vessel specific maintenance and comes with assured further development **over the whole life cycle**

Due to this unique combination of horizontal, vertical and life cycle dimensions, our solutions all carry the genes of an exhaustive and sustained plant productivity in their very core.

For More Stability. More Availability. More Power.

Completely Integrated Solutions from Siemens.