

SIEMENS



On course with excellent measurement technology.

Best-in-class products for the marine industry.

Process Automation



[siemens.com/sensors/industries](https://www.siemens.com/sensors/industries)

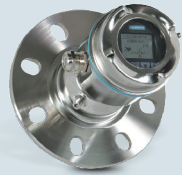


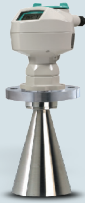
"With more than 130 years of experience in automation for marine and industry applications, Siemens is your trusted partner for single-source marine solutions".

The key to profitable growth in the marine industry is to combine the highest level of performance with the lowest operational expenses. Siemens maximizes your throughput, availability and quality, while at the same time minimizing your operating and maintenance costs, energy and raw material consumption, emissions and safety risks.

Enhance your marine application with our dedicated product range that includes process instrumentation and analytics, industrial communication, and automation and engineering solutions.

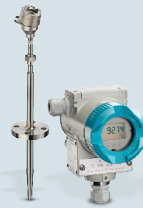
Product range

	 Process Instrumentation Level measurement			
	Radar			
				
	SITRANS Probe LR	SITRANS LR250	SITRANS LR560	SITRANS LG
Brief description	Compact 2-wire loop-powered, 6 GHz pulse radar transmitter with polypropylene rod antenna for level measurement up to a range of 20 m / 66 ft.	2-wire loop-powered, 25 GHz pulse radar level transmitter with a full measurement range of up to 20 m / 66 ft.	2-wire, 78 GHz FMCW radar level transmitter for continuous monitoring of solids and liquids in silos up to a range of 100 m / 328 ft.	Guided wave radar series for liquids, solids, slurries, inventory, process control, aggressive materials and more.
Features and benefits	• Uni-construction polypropylene rod antenna standard • Easy installation and simple start-up • Patented Sonic Intelligence signal processing • Extremely high signal-to-noise ratio • Auto False-Echo Suppression • Measuring frequency: 5.8 GHz (6.3 GHz for North America) • Programming using infrared intrinsically safe handheld programmer, SIMATIC PDM or HART handheld communicator • Communication: HART • Approvals: Lloyds, ABS, CSA, FM, RCM, ATEX	• Smaller process connections and narrow beam allow installation anywhere on a vessel • PTFE faced antennas for aggressive media and hygienic connections available • Process intelligence for advanced echo processing • Reliable and accurate for extremely high signal and low noise yields • Quick Start Wizard for easy configuration and operation in a few minutes • Infrared handheld programming or over a network using SIMATIC PDM, SITRANS DTM or AMS • Graphical local user interface displays, echo profiles and diagnostic information • Communication: HART, Profibus PA, Foundation Fieldbus • Approvals: Lloyds, ABS, BV, ATEX, FM, CSA, RCM, INMETRO, IECEx, NEPSI	• High-frequency technology ensures reliable operation in dusty and vaporous environments • Lens antenna eliminates the need for large parabolic or horn antennas, providing a narrow 4° beam angle. • Highly resistant to product buildup • Integrated air purge connection as standard for particularly sticky materials • Communication: HART, Profibus PA, Foundation Fieldbus • Approvals: CSA, FM, FFC, RCM, IECEx, ATEX, INMETRO, NEPSI	• Versatile and reliable level measurement even with aggressive vapors, high temperatures and pressures, dust, steam, or material buildup • No setup required due to preconfigured sensor delivery • Measures level, level interface and volume in a wide range of applications from material storage to bypass pipes • Rod and cable lengths can be easily adjusted to fit your application
Typical applications	Basic, low-cost level measurement of water, wastewater, acids or caustics.	Continuous level and volume monitoring of aggressive liquids and slurries in chemical storage and process vessels. Wide variety of liquids and slurries including water, wastewater, chemicals, oils, juice, fuels, etc.	Continuous level monitoring of bulk solids and powders for load and storage vessels on board.	Continuous level and volume monitoring of liquids and solids for fluid storage and process tanks on board.
	More information: siemens.com/probelr	More information: siemens.com/sitranslr250	More information: siemens.com/sitranslr560	More information: siemens.com/sitranslg

		Ultrasonic	
			
	SITRANS LR200	SITRANS LUT400	MultiRanger 100/200
Brief description	2-wire, 6 GHz pulse radar level transmitter for continuous monitoring of liquids and slurries up to a range of 20 m / 66 ft.	Compact, single-point, long-range ultrasonic controllers for continuous level or volume measurement of liquids, slurries and solids, and high-accuracy monitoring of open channel flow. ±1 mm high accuracy in standard operation. Measuring range up to 60 m / 197 ft.	Versatile short- to medium-range ultrasonic single and multi-vessel level monitor/controller for virtually any application. MultiRanger 100 offers cost-effective level alarming, as well as on/off and alternating pump control.
Features and benefits	- Graphical local user interface (LUI) makes operation simple with plug-and-play setup using the intuitive Quick Start Wizard - LUI displays echo profiles for diagnostic support - Process Intelligence signal processing for improved measurement reliability and Auto False-Echo Suppression of fixed obstructions - Programming using infrared intrinsically safe handheld programmer or over a network using SIMATIC PDM, Emerson AMS or Field Device Tools, such as PACTware or Fieldcare via SITRANS DTM - Communication: HART, Profibus PA - Approvals: Lloyds, ABS, ATEX, CSA/FM, NEPSI, RCM, INMETRO, GOST	- Separated transceiver / transducer (Echomax) protects the electronics from extreme vibration - High-frequency, non-contacting ultrasonic transducer is free of electronic components and fully potted to provide long-term reliability - Energy-saving algorithms for minimizing pump operation during high-cost energy periods - Sonic Intelligence is standard and is proven to provide superior performance in difficult conditions - Communication: HART - Approvals: ABS, LR, MCERTs, CSA, FM, UL, RCM - Web-based interface	- Measuring range: 0.3 to 15 m / 1 to 49 ft - Single or dual point level monitoring - Wall and panel mounting options - Temperature compensation: -50 to 150 °C / -122 to 302 °F - Communication: Built-in Modbus RTU via RS-485, PROFIBUS-DP V1 - Approvals: ABS, LR, ATEX
Typical applications	Continuous level and volume monitoring of liquids and slurries in anaerobic digesters for ballast water and waste treatment systems on board.	Open-channel flow monitoring in sewers, combined sewer overflow. Wet well level and pump control, storm water tank and level monitoring in holding tanks. Very precise measurement and logging controller unit for onboard applications.	Wet wells, flumes/weirs, bar screen control, hoppers, chemical storage, liquid storage, crusher bins and dry solids storage.
	More information: siemens.com/sitranslr200	More information: siemens.com/sitranslut400	More information: siemens.com/multiRanger

Product range

				
Electromagnetic				Coriolis
Brief description				
	SITRANS F M MAG 3100	SITRANS F M MAG 5100 W	SITRANS F M MAG 6000 I	SITRANS FC410
Features and benefits	Electromagnetic flow sensor in a rugged, fully welded design that suits the toughest applications and environments. Can be upgraded to IP68 on site.	Electromagnetic flow sensor in a rugged, fully welded cost-optimized design that suits the toughest applications and environments. Can be upgraded to IP68 on site.	Electromagnetic flow transmitter in a rugged design for usage in harsh marine environments when combined with any SITRANS F M sensor.	The lightest and most compact Coriolis flow system worldwide. Reduce skid size, fit multiple units into the tightest areas, simplify installation into both new and existing applications and minimize costs.
	• Wide pressure range flanges: PN 6 to PN 100, ANSI Class 150 / 300, AS 2129 / AS 4087, AWWA or JIS • Wide range of electrode and liner materials including EPDM (drinking water approved) • Easy commissioning, SENSORPROM unit automatically uploads calibration values and settings • Approvals: Drinking water approvals and certificates according to national and international standards, ATEX, FM and CSA	• Hard lining guarantees consistent accuracy throughout the entire pressure and temperature range • Integrated grounding and measuring electrodes • Increased low-flow accuracy for water leak detection • Built-in length according to ISO 13359 • Easy commissioning; SENSORPROM unit automatically uploads calibration values and settings • OD of straight pipe required upstream and downstream of the sensor • Approvals: According to regional and national standards, CT, OIML R49, MI 001, PTB K 7.2, BEV OE 12 / C040, MCERTS, WRAS, NSF/ANSI Standard 61, DVGW 270, ACS and BelgAqua	• Superior signal resolution for optimum turndown ratio • Automatic reading of SENSORPROM data for easy commissioning • User-configurable operation menu with password • Flow rate in various units • Totalizer for forward, reverse and net flow plus additional information • Multiple functional outputs for process control, minimum configuration with analog, pulse / frequency and relay output (status, flow direction, limits) • Comprehensive self-diagnostics for error indication and error logging • Remote version • Communication: HART, Modbus RTU, Profibus PA / DP, DeviceNet, Foundation Fieldbus	• Ultra-compact sensor design physically fully matches mechanical meters in a 1-to-1 substitution • Robust sensor design with no moving parts, offering high immunity towards mechanical vibrations and high-pressure flow pulsations • High-accuracy flow and density measurement for all fuel applications • Unique design of the hemispherical flow manifold secures low pressure drop • 100 Hz update rate on process values guarantees reliable information at high speed • Excellent flow measurement performance and diagnostics function available on aerated fluids (air/gas) • Approvals: ABS, LR, BV, DNV, GL, ATEX, IECEx and FM
Typical applications	Volume measurement of water and saltwater primarily used for ballast water tank management.	Volume measurement of water and saltwater primarily used for ballast water tank management.	Transmitter for all electrically conductive liquids. The rugged die-cast aluminum housing of the SITRANS F M MAG 6000 I provides exceptional protection, even in the harshest environment. Volume measurement of water and saltwater primarily used for ballast water tank management.	Measures both liquids and gases. In addition to mass flow, the Coriolis flowmeter provides information on media density, fraction and temperature. The density measurement determines % air/gas content in liquids and is therefore ideal for monitoring and billing of bunker fuel oil.
	More information: siemens.com/mag3100	More information: siemens.com/mag5100w	More information: siemens.com/mag6000i	More information: siemens.com/fc410

	 Pressure measurement	 Temperature measurement	 Positioner measurement
			
	SITRANS P DS III	SITRANS TS500 / SITRANS TF	SIPART PS2
Brief description	Advanced digital pressure transmitter for gauge, absolute and differential pressure, level and flow measurement.	The industry-grade temperature sensor SITRANS TS500 and temperature transmitter SITRANS TF support a wide range of marine measuring solutions. Suitable for basic applications and solutions in harsh environments.	A smart valve positioner well known for its versatility, reliability and smooth operation in the marine and shipbuilding industry.
Features and benefits	• Oil-filled, piezoresistive measuring cell • Measuring range from 1 mbar up to 700 bar • Separate replacement of measuring cell and electronics without recalibration • High measuring accuracy up to 0.075 % • High long-term stability up to 0.125 % per 5 years • Configuration through push buttons / LCD • Ingress protection up to IP68 • Extensive diagnostics and simulation functions with PDM • Communication: 0–20 mA, HART, Profibus PA, PROFIsafe or Foundation Fieldbus • Approvals: DNV, ABS, LR, BV, GL, ATEX, FM, CSA, NEPSI, FDA and EHEDG	• Stainless steel construction of wetted parts • Various process connections available • Modular concept; insert exchangeable during operation • Housings in aluminum, polyamide (TS) and stainless steel available • Sensor type: Pt 100; thermocouple types: K/J/N • Display option • Up to IP66 / IP68 • Communication: 0–20 mA, HART, Profibus PA or Foundation Fieldbus • Approvals: ABS, LR, BV, DNV/GL (pending), ATEX and NEPSI (cFMus, EAC pending)	• Only one device version for linear and part-turn valve actuators • Simple operation and programming using three keys and a two-line LCD • Automatic startup function with self-adjustment of zero and span • Manual operation without additional equipment • Selectable or freely-programmable characteristics • Minimal air consumption • Approvals: ABS, LR, BV, DNV/GL and ATEX
Typical applications	Various pressure, level and flow measurement on board. Typically used for all kind of filter monitoring, fuel supply system monitoring, etc.	Temperature measurements in connection with e.g. fuel pre-heating, exhaust gas treatment and onboard process water.	For valve control e.g. for switching of fuel types or even exhaust gas streams.
	More information: siemens.com/sitranspds3		More information: siemens.com/sipartps2

Product range

	 Process Analytics Continuous gas analytics	 In-Situ TDLS analytics	 Gas chromatographs
			
	Ultramat 6	LDS6	SITRANS CV
Brief description	The ULTRAMAT 6 single-channel or dual-channel gas analyzers operate according to the NDIR two-beam alternating light principle and measure gas concentration highly selectively. Analyzers have shown very reliable behavior in maritime environments.	LDS6 is a diode laser gas analyzer with a measuring principle based on the specific light absorption of different gas components. The LDS6 analyzer is capable of measuring O₂, CO, CO₂, HN₃ and H₂O directly in exhaust stream.	The SITRANS CV gas chromatograph (GC), which is based on the innovative analytical technology of the MicroSAM, has been specially developed for natural gas analysis and LNG custody transfer applications.
Features and benefits	• Highly selective double-layer detector • Stable and precise measurement on vessels • Corrosion-resistant gas path • Cleanable sample cells • Time-proven experience • Significant marine installed base • GL confirmation of compliance • System solutions and service worldwide through our partner-network	• Reliable In-situ laser technology • Monitoring of up to 3 stacks • Fast process controllability • Small installation effort • Minimum maintenance requirements • Extremely rugged design • High long-term stability through built-in, maintenance-free reference gas cell, making field calibration unnecessary • Real-time measurements	• Extremely robust field device • Fast GC analysis based on MEMS technology • Precision through valveless live injection • High separation performance through narrow-bore capillary columns • Low detection limits through powerful detectors • Compact design with EEx d and IP65 protection • Easy and safe operation using CV Control Automatic optimization of methods increases availability • Low operation costs and low power consumption • System solutions and service worldwide
Typical applications	Reliable SO₂ and CO₂ monitoring with the Siemens continuous gas analyzer flagship for full compliance with MARPOL Annex VI of vessels using economic sulfur scrubber solution. Optional monitoring of NO, O₂ and CO. Retrofits and new builds.	Monitoring of ammonia slip in selective catalytic reactions for reduction of nitrogen oxides emissions. Typically used as a part of the exhaust treatment system for direct on-stack measurement on vessel or engine test benches. Additionally the device can be used for CO₂ measurement according to the European MRV directive.	Reliable solution for LNG quality and fiscal energy metering for on- and offshore applications. Full control of the bunkering process for LNG-fueled vessels. Retrofits and new builds.
	More information: siemens.com/ultrammat6	More information: siemens.com/lids6	More information: siemens.com/sitranscv



Industrial Communication

Industrial wireless communication



Industrial ethernet



Industrial Wireless LAN
SCALANCE W



Industrial WAN
RUGGEDCOM WIN



Industrial Ethernet Switches
RUGGEDCOM



Industrial Ethernet Switches
SCALANCE X

Brief description

SCALANCE W enables reliable wireless communication solutions for marine and industry applications at various automation levels according to the IEEE 802.11n standard, allowing applications to be scaled in terms of price and performance.

A broadband wireless product portfolio designed for private networks, delivering the benefits of carrier-grade 4G technology to critical infrastructure applications in harsh marine environments.

The RUGGEDCOM portfolio offers a level of robustness and reliability that has set the standard for communications networks deployed in harsh environments.

With SCALANCE X, Siemens offers a broad range of switching components based on Industrial Ethernet to implement reliable and flexible industrial networks for marine and industry applications.

Features and benefits

- Data rates of up to 450 Mbps
- Cabinet, indoor and outdoor variants, -40 to 60 °C / -104 to 140 °F – no fans, up to IP65
- Same web-based management across the portfolio
- Communications: Wireless real-time communication using PROFINET with PROIsafe via KEY-PLUG W700 iFeatures
- Approvals: Fulfillment of international standards and norms to ensure safety and environmental requirements e.g. marine approvals ABS, BV, DNV/GL, LR, NK, PRS

- IEEE 802.16e compliant and interoperable
- IEEE 1613 and IEC 61850-3 validated
- Rated for reliability in harsh environments, -40 to 65 °C / -104 to 149 °F, IP67, salt fog tested
- Greater than 40 Mbps aggregate throughput
- Multiservice support including voice, SCADA, mission critical control data, video and more
- Enhanced security features to ensure NERC/CIP compliance

- Rated for reliability in harsh environments, -40 to 85 °C / -104 to 185 °F - no fans, up to IP67
- Field replaceable Ethernet media modules; hot swappable, redundant, load-sharing power supplies
- Fully integrated power supply (no external adaptors)
- Highest immunity to EMI and heavy electrical surges (IEEE 1613)
- Approvals: ABS, DNV/GL

- One network for strict real-time and standard TCP/IP
- Rugged industry-compatible design, -40 to 70 °C / -104 to 158 °F with passive cooling (no fans), IP20/IP30/IP65
- Same web-based management across the portfolio
- Graded diagnostics concept
- Approvals: Fulfillment of international standards and norms to ensure safety and environmental requirements e.g. marine approvals ABS, BV, DNV/GL, LR, NK, PRS, RINA

Typical applications

Secure and reliable industrial wireless local area network to enable wireless access for service, configuration and maintenance as well as connectivity for mobile applications, e.g. crane automation.

Secure, wide-area wireless communication for off-shore-onshore data transmission.

Communication on board for local automation (e.g. controllers, HMIs), balancing, dynamic positioning systems, ship engine monitoring systems and additional services like video surveillance, voice/data transmission, internet access.

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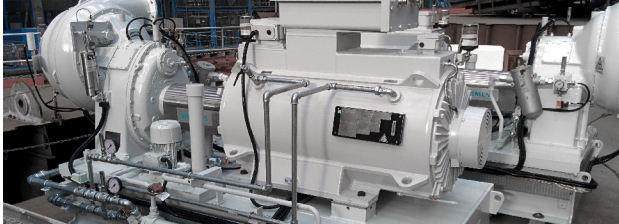
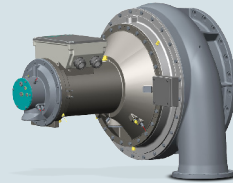
More information:
siemens.com/iwlan

More information:
siemens.com/ruggedcom

More information:
siemens.com/ruggedcom

More information:
siemens.com/switches

Product range

	Air lubrication system STC-GO turbocompressors & automation	Exhaust Gas Recirculation (EGR) EGR turbocompressor	 Power Supply Products
			
	Air lubrication system (compressor equipment & automation)	Exhaust gas recirculation (EGR) compressor equipment	SITOP
Brief description	Reliable and highly efficient system to achieve 4-10% fuel consumption reduction at cruise and transportation vessels – either for new builds or retrofits.	Reliable and certified compressor component for full EGR system to fulfill future IMO TIER III NOx reduction levels for 2-stroke diesel engines on marine vessels.	More than ever, a reliable power supply is a basic requirement for operating an automation system and connected loads on any modern ship. Our full range of switched mode power supply units provides controlled 24 V DC and other DC voltages. Add-ons like DC UPS, redundancy and selectivity modules protect the 24 volt supply against main failures and overload on the DC side.
Features and benefits	• Comprised of the compressor equipment to generate air cushion as well as the full automation system for air distribution of air along the hull • Suitable for steep or flat hull designs • Reliable operation under all cruise, weather and wave conditions • Factory tested for quick installation and commissioning on board • Modular build to allow assembly on-board • Low noise and smallest footprint	• Reliable operation under all fuel and EGR operation types • Robust construction to meet lifetime and service requirements • Specified component by MAN Diesel and Turbo (MDT) for 2-stroke engines • Smallest footprint; also suitable for retrofits in small engine rooms • Low ship resource consumption (water/sealing air/lubrication oil) and low power consumption • Adjustable sizing to match available turbocharger program	• Industry-proven DC power supplies with different output powers up to 1000 W • Optimally suited for automation systems from Siemens • Individually expandable to maximum reliability • Redundancy modules to protect against failure of a power supply • DC UPS modules for 24 V DC buffering to protect against power failures • Selectivity modules to protect against overloads in 24-V-DC circuits • Very high MTBF values of up to over 1 million hours • Operating temperature: -25 to 70 °C / -77 to 158 °F • Approvals: GL, ABS, CB, ATEX, IECEx, UL/cUL (CSA)
Typical applications	Air lubrication system for fuel reduction on cruise, container, bulk carrier and oil and gas vessels as well as ferries, both new builds and retrofits	EGR systems for 2-stroke marine diesel engines operating or prepared for operation within IMO TIER III coastal areas, both new builds and retrofits	Reliable DC supply of automation systems (SIMATIC S7, HMI, IPC), communication components (SCALANCE), DCS systems (SIMATIC PCS 7), emergency lighting or fire alarm systems.
	More information: siemens.com/energy/aeration	More information: siemens.com/energy/aeration	More information: siemens.com/sitop

Automation and Engineering



SIMATIC PLC

The SIMATIC PLC range offers cost-efficient solutions. With its integrated functions and standardized interfaces it is fully scalable from basic to demanding applications.

- Usability, scalability, integrated functionality
- Efficient engineering
- Safety integrated: one engineering for standard and failsafe automation
- Security integrated - consistent, integrated high-level security down to the controller
- Best performance in every class due to shortest processing time, symbolic programming, fast communication and optimized data access
- Standardized diagnostics and service
- Approvals: standard certifications, ABS, BV, DNV, GL, LRS, NK, PRS, RINA, RMRS and CCS

The scalable, flexible range of SIMATIC PLCs is ideally suited for applications from simple standalone through complex, demanding control of multiple machines.

More information:
siemens.com/controller



SIMATIC Industrial PCs

SIMATIC IPCs are available in various designs and functionalities. You can order more than 90 million configurations using the online configurator in the Siemens Mall. We can also supply you with customized products and systems based on the SIMATIC standard, precisely tailored to your specific requirements.

- Extremely high system availability and data security
- Time saving thanks to ready-to-use system with fast, problem-free commissioning
- As-delivered condition can be restored at any time with the Restore CD/DVD
- High level of data security since retentive machine data can be saved and secured against loss resulting from power failure
- Efficient, cost-effective overall package as an alternative to ordering individual components
- Approvals: standard certifications, ABS, BV, DNV, GL, LRS, NK, PRS, RINA, RMRS and CCS

The robust SIMATIC IPCs are ideally suited for demanding industrial control and regulatory applications as well as for the data storage.

More information:
siemens.com/ipc



SIMATIC HMI
- Hardware

With innovative SIMATIC HMI products, HMI and SCADA solutions in machine-oriented areas can be implemented more quickly and cost effectively. Robust SIMATIC HMI operating devices ensure a new level of efficiency.

- A broad variety of devices from 4" to 22", with innovative user interface and improved usability
- Brilliant displays in widescreen format
- Integrated high-end functionality
- Maximum data security
- Easy commissioning, rapid service
- Integrated system diagnostics
- Multiple interfaces for communication
- Integrated PROFINET switch from 7"
- Flexible scalability within the HMI range
- Approvals: standard certifications, ABS, BV, DNV, GL, LRS, NK, PRS, RINA, RMRS and CCS

SIMATIC HMI is the ideal solution for marine applications consisting of an optimized package of visualization software and hardware.

More information:
siemens.com/hmi



SIMATIC HMI
- Software

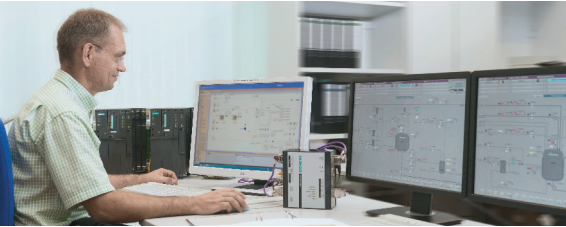
The comprehensive SIMATIC HMI software portfolio including the TIA portal enables efficient engineering of the SIMATIC product family via options ranging from WinCC for complex installations to WinCC Open Architecture for projects requiring a high degree of customization or software operating in non-Windows environments.

- Efficient engineering – with minimal effort the visualization is faster and easier than before
- Scalable
- Innovation in design and operation – with customized styles and designs
- Openness/flexibility
- Usability – with intuitive gesture and multi-touch operation
- Fast commissioning - simulation of visualization for fault recognition
- Automatic backups
- Intelligent system diagnosis and remote access - fast troubleshooting and safe, worldwide access

In combination with our HMI hardware, our software provides the optimum automation platform for marine/shipbuilding applications.

More information:
siemens.com/hmi-software

Product range

Automation and Engineering			
			
	ET200iSP	SIMATIC PCS 7	SIMIT
Brief description	ET 200iSP is a modular, intrinsically safe I/O system with an IP30 degree of protection (using a special cabinet IP66). It can be expanded by up to 32 electronic modules (2I/4I8 channels).	SIMATIC PCS 7 combines a unique scalable architecture with powerful engineering tools and a wide variety of additional functions such as alarm management, process safety, and asset management. All of which can be integrated seamlessly into your existing environment. SIMATIC PCS 7 has everything you need to completely and safely automate your entire production process, from goods receipt to goods issue, in both manufacturing and process plants.	SIMIT enables real-time simulation for extensive engineering and virtual commissioning of equipment, machines and processes, directly from the office when these assets are not available.
Features and benefits	• Modifications possible online • Adding of I/O modules to the station • Changing the parameter settings of I/O modules • Module replacement during operation (hot swapping) and configuration in run • Condensation-resistant modules in a temperature range from -20 to +70 °C / -4 to 158 °F • Full PROFIBUS and power supply redundancy • Certificates: UL, ATEX, DNV, BV, NK, EAC, GL, LR, ABS, KCC, NEPSI, CQST, IECEx, INMETRO, PRS, FM, RMRS	• Scalable system: from 100 to 100.000 I/O's • High-performance operation and engineering • Flexible modular redundancy (FMR) available • Decentralized system architecture • Robust and reliable • Integrated fail safe technology • Integrated maintenance system • Integrated power management • Integration of package units	• The new lever for profitability in automation projects • Virtual commissioning with SIMIT simulation framework • Faster commissioning • Efficient operator training • Higher engineering quality • Lower costs • Easy handling • Reduced projects risks
Typical applications			
	More information: siemens.com/	More information: siemens.com/	More information: siemens.com/

Make your data work

COMOS offers a seamless flow of information based on a globally consistent database - end-to-end across all disciplines and through all phases of the plant lifecycle. COMOS - Making data work.

COMOS is the software solution for integrated management of plant projects in the process industry – from engineering and operations to modernization as well as dismantling. It ensures that engineers and operators can access all project-relevant data at all times, across all company levels and in all project phases. Because all data and documentation is always available and up-to-date, it depicts the actual as-built status of a plant at all times. In this way, COMOS lays the foundation for greater reliability in decision-making and more efficient processes throughout the entire plant – for a lasting improvement in competitiveness.

With COMOS and SIMATIC PCS 7 Siemens offers integrated engineering with central data management for plant engineers and operators. This also includes seamless data exchange with the PIA Life Cycle Portal and SIMIT Simulation Framework.

Advantages at a glance:

- Always up-to-date plant and project documentation
- Interoperability through open system architecture
- Global collaboration in Engineering and Operations
- Seamless information handover between CAPEX and OPEX phases
- Shorter time-to-market
- Cost savings over the entire asset lifecycle
- Higher plant availability and increased performance
- Regulatory compliance ensured



Explore the COMOS Plant Engineering Software in greater detail:

[siemens.com/comos](https://www.siemens.com/comos)

Siemens Marine Services

– The basis for sustained competitiveness

A substantial portion of our Completely Integrated Solution philosophy is embodied in our product family and using these solutions, we can demonstrate a multitude of ways you can effectively modernize and maintain your ship's electromechanical equipment and technical systems.

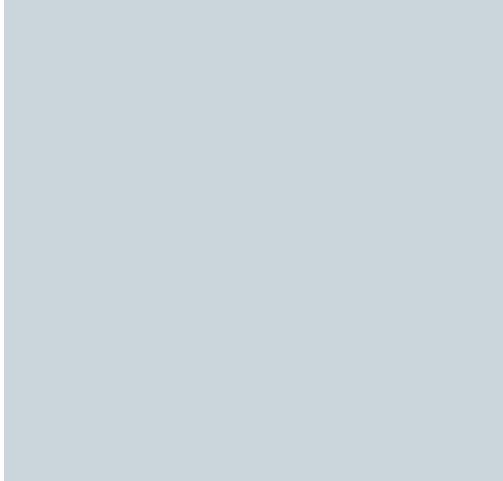
Whether you operate passenger or cargo ships, tankers, bulkers or heavy lift carriers, we provide the knowledge and experience you need to succeed in the competitive world of marine business.

Our marine service specialists have both the technical competence and the marine background to help you find the best solution for the challenging environments faced by ship owners. We will keep you up-to-date on the latest technological developments as well as help you become more effective at defining tasks and achieving your business targets.

Your customer benefits

- Worldwide technical support partner offering spare parts and repair services
- High plant availability with state-of-the-art technology
- Swift realization of retrofit projects and repair works from order to completion
- Performance of services during the ship's operation to minimize downtimes
- Compliance with newest standards and regulations
- Increased efficiency

“We are proud to be of service – whenever and wherever you need us. With our service we aim to optimize the reliability, availability and competitiveness of your vessel during operation.”



Repair Services

- Repair of motors, generators and breakers at our regional Repair Centers or even out at sea
- Repair of all electrical port facilities, e.g. cranes, ship loaders, etc.

Modernization and Retrofit

- Automation solutions based on the modular system SIMATIC S7 and SINAMIC families for highest compatibility, availability and reliability
- Retrofit references for all types of systems related to automation, propulsion, drives, power generation and distribution
- Up-to-date digital controls and monitoring systems
- Repair, modernization and refit of all electrical machines
- IT safety protection

Plant Revision

- Efficiency improvement measures
- Preventative and periodic maintenance and health checks of switchgear, e.g. machines, automation and control equipment
- Cleaning and exchange of equipment

All tasks are performed at fixed and agreed prices in regular terms if requested

Field and Online Services

- Individual service contracts according to your remote monitoring needs
- Specified online support including conventional phone service, remote monitoring, remote diagnosis, etc.
- Standby duty up to 24 hours/day, 365 days/year depending on specific agreements - short reaction time guaranteed

Explore our extensive service portfolio in greater detail:

[siemens.com/marine](https://www.siemens.com/marine)

More information:
[siemens.com/sensors/industries](https://www.siemens.com/sensors/industries)

Siemens AG
Process Industries and Drives
Östliche Rheinbrückenstraße 50
76187 Karlsruhe
Germany

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