



**PROVIDING TURNKEY ELECTRICAL SOLUTIONS
FOR SHIPS**



Engineering Excellence for the Maritime Industry

Established in 1978, Marine Electricals Ltd is a pioneering provider of cutting-edge, eco-conscious maritime electrical and electronic integrated systems and solutions. With over four decades of legacy expertise, the company excels in offering innovative, scalable, and integrated technical solutions for the maritime industry. The company's exciting growth charter is witnessed in its strategic partnerships, thoughtful acquisitions, expansion into key maritime markets, collaborations with industry leaders, and adoption of emerging technologies.

Headquartered in Mumbai, the company has commissioned its three manufacturing plants in Goa, India, offering advanced system solutions and reliable maintenance services for a wide range of ships, including those of Indian navy and coast guard, container, passenger, offshore, research, and environmental vessels etc. Marine Electricals specializes in power distribution, propulsion, automation, navigation, communication, connectivity, and IT solutions. Its equipment meets rigorous standards set by major classification societies, ensuring operational safety and regulatory compliance during installation.

Expanding its capabilities, the company now also provides ship-wide cable laying solutions, equipment installation, and interconnection services for third-party equipment. It delivers comprehensive package solutions, including electrical distribution, propulsion control, navigation and communication systems and ship systems control equipment. Additionally, through its subsidiary, it offers innovative motors for the maritime industry. Alongside these the company has also made an inroad into the energy segment, with its EV charging infrastructure development company.

With its committed staff of more than 700 skilled technicians and engineers, the company ensures speedy fulfillment of its commitments and offers superior after-sales support with relevant product, technology and system upgrades and scalability. It anticipates future needs and opportunities, supported by its subsidiary companies that seamlessly align with evolving maritime market requirements. It not only strives for maximum system performance but also deploys advanced technologies to drive its growth. In the coming years, it aims to feature in the top ten niche players fulfilling requirements of the maritime industry.

Corporate Office, Manufacturing Units, Design and Development



Marine's Corporate Office in Mumbai houses the key personnel from most of its business verticals. Its three manufacturing units in Goa deploy some of the most advanced technology required by the maritime industry.

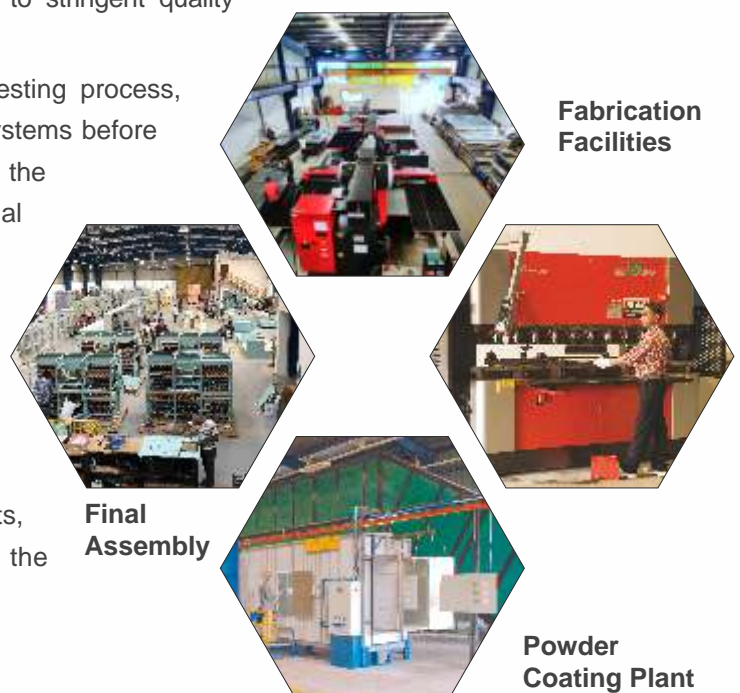
The company's strength is in creating and delivering custom solutions tailored to suit individual requirements of maritime vessels. Its teams are equipped to manage every stage of a project, from project formulation through full installation and sea trials. The company has the expertise and assets necessary to offer comprehensive electrical and electronic systems, including valuable start-up assistance involving the creation of the project definition in which the client's unique requirements are examined in order to present alternatives based on cutting-edge technologies. The quality, performance and reliability of all our products and services are assured in accordance with customer requirements and all relevant marine industry standards. Its Quality Management System, compliant with the international ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 Quality Management Standards, is certified by Indian Register of Quality Systems.

The company's progressive attitude has aided it to transform with time as per the industry requirement. Its expertise is a perfect blend of industry experts, innovators and next generation technologists. The design division uses some of the most up-to-date hardware and software tools and is computer-aided. The engineering experience offers the flexibility to find the best solutions to addressing the design challenges of maritime industry. After these crucial engineering and design tasks are finished, the in-house work-shop facilities specialised craftsmen are responsible for manufacturing.

Marine Electricals leverages cutting-edge CNC technology, precision machining tools, pre-treatment plant, and conveyorised painting facilities to create highly specialized systems that precisely adhere to demanding specifications required by maritime industry. Its advanced workshop manages every aspect of panel production, encompassing metalwork, finishing and wiring, all subject to stringent quality checks.

Every Marine Electricals system undergoes a rigorous testing process, meticulously examining the functionality of individual subsystems before integration and conducting comprehensive evaluations of the complete system after assembly, guaranteeing exceptional performance.

The company provides comprehensive customization services, spanning from the project's initial stages to design, manufacturing, installation, and commissioning, positioning it as a preferred partner for a wide range of maritime system requirements. It also undertakes product life-cycle management for a vast majority of its products, ensuring smooth continuity of various requirements of the maritime business.



**Fabrication
Facilities**

**Final
Assembly**

**Powder
Coating Plant**

POWER GENERATION AND DISTRIBUTION

Main Switchboard



LV Switchboard



MV Switchboard

Switchboards are used for receiving, measuring and distribution of electrical energy, protecting the network from electrical faults. These are designed and constructed in accordance with IEC, classification society standards and are suitable for installations onboard ships.

Features

- MV Switchboards up to 11kV, 2500A, 31.5kA/3Sec
- Customized as per customer requirements
- LV Switchboards up to 690V, 6300A, 100kA/1Sec
- Specifications as per classification society requirements

Automated Power Management System (APMS)

APMS is employed for the remote control and monitoring of power generation and distribution of electrical energy right up to the Sub Distribution Panel level and ensures continuous power supply to ship's systems in accordance with the various operational conditions. APMS functions involve breaker supervision, blackout recovery, priority start, load dependent start/stop, heavy consumer control etc. as per the vessel specification.

Distribution Boards (DBs)

Distribution Boards are used to distribute power to various loads onboard. These include Power and Lighting Distribution Boards.

Battery Charger / Transformer Rectifier Unit (TRU)

Battery Chargers / TRUs are used to charge the batteries including Ship Service batteries, Engine Starting batteries and GMDSS batteries.

Navigation Light Control Panel (NLCP)

NLCP is used to monitor and control Navigation Lights.

INTEGRATED NAVIGATION AND COMMUNICATION SYSTEMS (INCS)

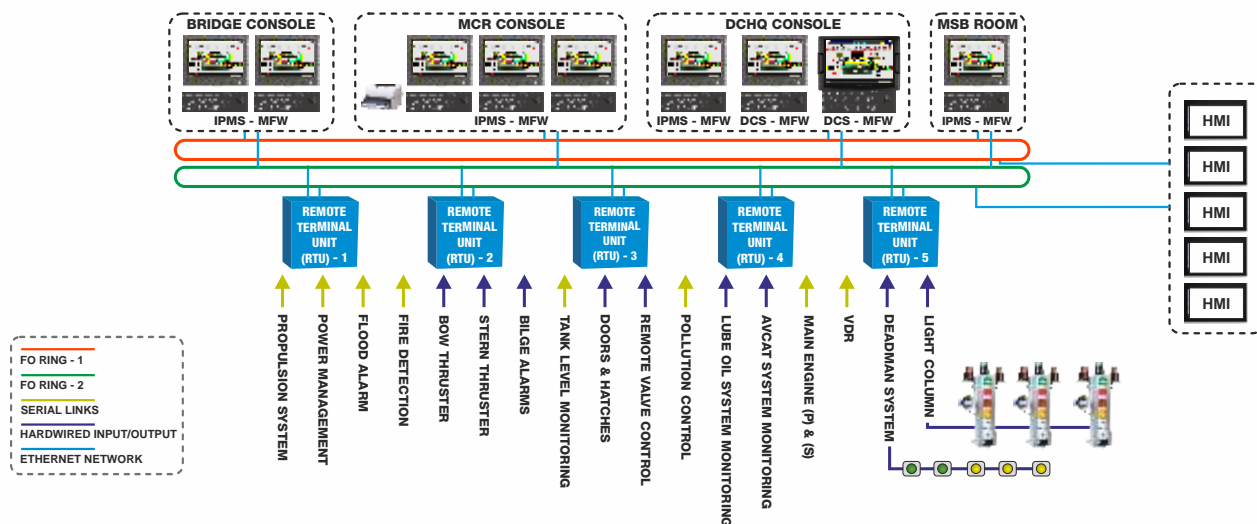


Integrated Navigation and Communication Systems aid in maximizing the shipboard efficiency and safety. These intuitive systems provides excellent performance by bringing together data from all required on-board systems and navigation sensors. The company has supplied more than 60 such Integrated Navigation and Communication Systems meeting naval as well as other classification society requirements.

Features

- Modular design
- Increased efficiency
- Improved safety
- Improved flexibility & Higher Redundancy
- Greater convenience
- Type-approved, IMO & Classification Society Compliant

MONITORING AND CONTROL SYSTEM



This is an indigenous custom designed integrated system to monitor and control ships operating technical processes in the engine room space for a watch-free operation. It can also be used as a ship control system. Each system is constructed for a well defined task with the claim of maximum reliability. Marine has delivered such monitoring and control systems for ships since 2017.

Features

- Mimics
- Engine watch system
- Alarm list
- Data reporting and logging System
- Measuring point
- Technical Specifications as per classification society requirements
- Trend representation

ELECTRICAL AND HYBRID PROPULSION SYSTEM



This system is designed for ferries, tug boats, hybrid vessels and focuses on using green energy efficiently. It combines electric propulsion with an advanced lithium-ion battery system, solar power, and a backup diesel generator with a permanent magnet alternator. The diesel generator provides consistent power, while a closed bus switchboard feeds power to a high-tech solid-state drive system that controls the propulsion motor and thrusters. This setup ensures dynamic eco-friendly operation of vessels with a reliable backup power, ensuring reduced emissions, low noise and vibration, maximum payload capacity and economical operation.

Battery Energy Storage Systems (BESS)

BESS are rechargeable batteries that can store energy and feed the grid when needed. We undertake electrical system design, battery sizing, calculation and selection based on operating profile of vessel, supply of battery and battery management system, energy management system.

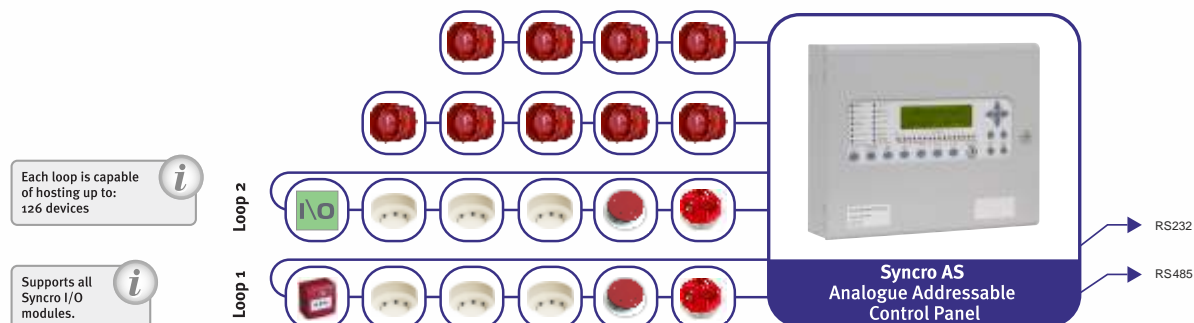
Drive Solutions

We are also engaged in design, manufacture, supply, installation and commissioning of Air cooled and Liquid cooled Drive Systems based on the applications and vessel specifications meeting various classification society requirements.

Motors and Alternators

We supply a wide range of permanent magnet motors and alternators for the above system. We are also focusing on developing other innovative motors such as E-Pod Motors, D.C. Motors, and Green Energy Propulsion Motors.

AUTOMATIC FIRE DETECTION SYSTEM



The Fire Detection System is used to detect fire in the cabins, passageways, dining/recreational area, galley, machinery spaces as well as offices and storage areas etc. It includes fire detection control panel, fire detection repeater panel, smoke detectors, heat detectors, manual call points, flame detectors (optional) attached to audible and visual alarm devices.

Features

- Certified by various classification societies
- Provision for real time monitoring and management
- Built on advanced technology

INTERNAL COMMUNICATION SYSTEM

Internal communication system on board a ship incorporates critical components such as Automatic Telephone System (ATS), Self Powered Telephone System (SPT), Public Address-General Alarm System, Sound Reception System, Talk-Back System. These systems collectively contribute to a well-integrated and secure communication network on board.

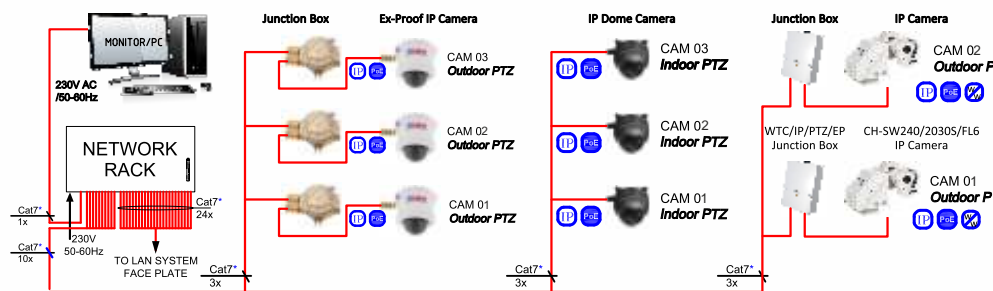
Features

- Certified by various classification societies
- Adhere to Solas norms
- Tailor made based on type of ships & specifications

The Automatic Telephone System

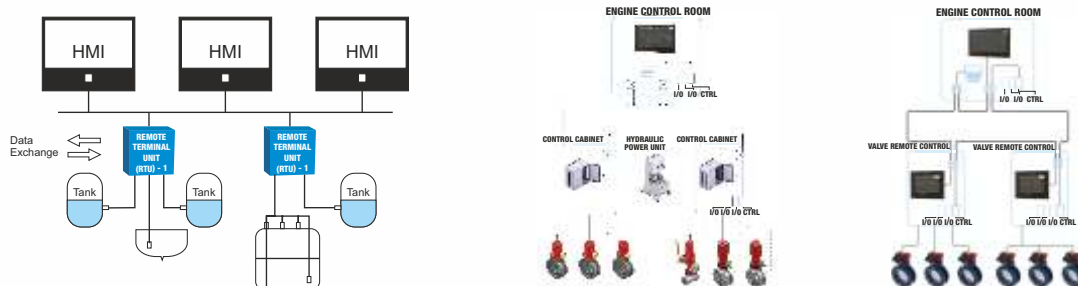


CCTV SYSTEM



The CCTV system is developed to precisely align with the security and surveillance demands of marine vessels. Rugged marine surveillance camera stations are provided utilizing top-tier components and cutting-edge materials. The system is designed to meet the requirements of all classification societies and can include scalable client software. It provides a comprehensive operational environment, ensuring the secure and effective monitoring of vessel activities and personnel.

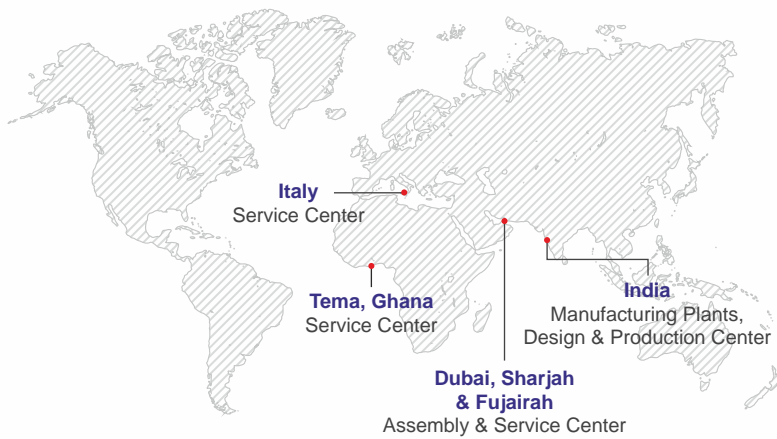
TANK GAUGING SYSTEM & REMOTE VALVE CONTROL SYSTEM



Marine Electricals offers a flexible solution to level gauging in all tanks as well as draft measurements onboard ships. It is used for measurement of liquids in large storage tanks with the purpose of quantifying the volume and mass of the product in the tanks. Modern tank Level Monitoring Systems digitize the tank measurement and information transmission to an engine control room from where such information is distributed to users of the inventory data. The above system includes supply of level transmitters, bilge sensors and loading computer as per the vessel requirements.

The Valve Control System controls the valves by controlling fluid (fuel oil, bilge water, ballast water, etc) flow by varying the size of the flow passage with opening and closing of hydraulic, electro hydraulic or electric actuators. The Valve Control System provides a fully integrated centralized system which can monitor and control all the valves and actuator positions from a single point. Mimics are provided for the system as per the vessel requirements to monitor and control all the functions.

Our Global Presence



Service Centre Presence in India

- Mumbai
- Kolkata
- Goa
- Visakhapatnam
- Karwar
- Chennai
- Cochin
- Port Blair

Range Of Solutions



Integrated Navigation and Communication Systems (INCS)



Power Generation and Distribution / Equipment



Internal Communication System



Range Electrical Equipment



Electrical Drive Systems



Monitoring and Control System



Tank Gauging and Remote Valve Control System



Electrical and Hybrid Propulsion System

Range Of Services



Engineering & Consultancy



Project Management



Electrical Installation



Commissioning



Product Lifecycle Support



Maintenance (RRC & AMC)



Spare Parts



Obsolescence Management



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