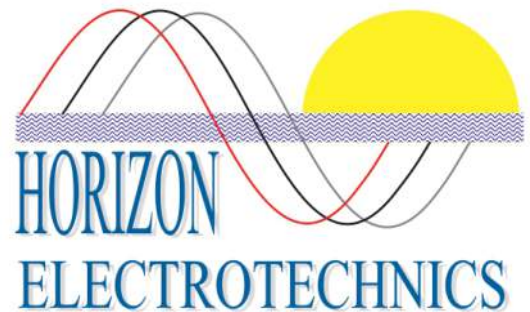


COMPANY GUIDE



**MARINE ELECTRICAL & AUTOMATION
ENGINEERING SERVICES**

HORIZON ELECTROTECHNICS (PVT) LTD.

INTRODUCTION :

Horizon Electrotechnics (Pvt) Ltd is a multidisciplinary specialist engineering company, built to cater the rising requirements in the field of Automation and Control systems engineering in both modern industry and the marine sector.

Since its establishment in the year of 2015, Horizon Electrotechnics has been among the pioneers in the front line, Delivering state of the art engineering solutions and services to a various caliber of clients in both domestic and international arena.

Moulded by the Passion, Practise and Professional knowledge, The Team-Horizon Electrotechnics is committed to deliver reliable solutions and services in the fields of Automation, Motion technology, Machinery control systems, Sales & Support and Industrial Training at an economical cost.

Horizon Marine Electrotechnics is a subsidiary of Horizon Electrotechnics (Pvt) Ltd, and is solely built to cater the Marine Electrical and Automation systems Engineering sector. Armed with a team of expert Marine Engineers and latest Field troubleshooting equipments, The company can attend to Troubleshoot, Modify or Install any kind of Marine electrical engineering product on ships sailing in international waters.

Onboard Repairs & Troubleshooting.

Horizon Training

VFD Installation & Servicing.

PLC Installation & Upgrading.

Machinery control panels & Switchgear panels



Safematic Products

HOR Control Products

Energy Saving Solutions.

Safematic Products

Safematic Products

SERVICES OFFERED BY HORIZON ELECTROTECHNICS :

1. ONBOARD REPAIRS AND TROUBLESHOOTING:

Our team of expert marine engineers, combined with their analytical skills and latest field troubleshooting equipment, are dedicated to deliver fast and highly reliable troubleshooting for any machinery onboard the ships.

This Including:

- Main switch board (MSB) and Emergency switch board (ESB) repairs.
- Air circuit breakers (ACB), and Vacuum circuit breakers (VCB) servicing.
- Auxiliary engine control panels and Power management system (PMS) panels.
- Boiler and Incinerator controller panels.
- Steering gear control systems.
- Air conditioning and Refrigeration plant control panels.
- All types of motor starter panel servicing and repairing.
- Crane / Derrick controller panels.
- Servicing / Repairing to Main engine control systems.



2. UPGRADING OR RETROFITTING OF MACHINERY CONTROL PANELS:

Horizon Electrotechnics offers highly accurate and reliable automation / Electrical Engineering solutions to replace or upgrade obsolete machine control panels OR power distribution systems on your ships.

- Relay logic Control panels.
- Latest PLC based control panels.
- Low voltage / Medium Voltage Power distribution panels / Switchgear panels.
- Break down repairs and Damage repairs.

3. VARIABLE FREQUENCY DRIVERS (VFD) INSTALLATION AND SERVICING:

Variable Speed Drives or VFD's are often used in both commercial and marine industry as a useful tool for energy conservation.



- <> Reduce daily fuel cost.
- <> Improves pump / fan performance.
- <> Extended motor and bearing life span.
- <> Expel wear and tear damage from motor starters and fans onboard ships.

Trusted brands = Danfoss, ABB

Modern PLC based automated control functions ensure trouble free and accurate speed / throughput regulating of pumps



4. MACHINERY CONTROL PANEL & SWITCHGEAR PANEL MANUFACTURING:

Our experts in the production facility located in the city of Colombo, Sri Lanka, can undertake the entire process of Designing, Assembling and Installation of Switchgear panels and machinery control panels to suit complex and demanding requirements on ships.

All our control panels and switchgear panels strictly complies with the international standards of IEC 61439-1/2 : 2011 and EN-60204-1. And also with the relevant sections of classification society requirements.

- Auxiliary engine control panels.
- Boiler and Incinerator control panels.
- All types of Motor starter and Speed control panels.
- Purifier / Separator automatic control panels.
- Power distribution (Feeder) panels - LV and MV
- Main engine control systems.
- Main Switch Board (MSB) Automation and Sequential starters.



5. INDUSTRIAL AND MARINE AUTOMATION TRAINING:

Industrial automation training and Siemens PLC programming courses from Horizon Electrotechnics (Pvt) Ltd. Conducted by Siemens Sitrain certified Automation Engineers with ample experience in Marine and Industrial automation sectors.

Specially crafted learning modules for Marine Engineers, Marine ETO's and also for Engine / Electro cadets on ships.

Also highly recommended for Industrial engineers and apprentice trainees as well.

Courses are conducted in an active workshop environment with Hands-on practical sessions on actual machinery and marine control systems.

Class room facilities includes Siemens TIA portal OEM softwares, High performance computers, Siemens PLC training kits, FLUKE High-tech measuring & calibration instruments, Sensors and Transducers demo kit, Full HD Multimedia presentation devices and many state-of the art technology for hands-on experience.



6. IT AND NETWORKING SOLUTIONS FOR SHIPS:

- Installation and configuration of new computer networks and / or Servers on ships.
- Repairs / Modifications to existing IT infrastructure on vessels.



7. POWER AND CONTROL CABLE LAYING, TERMINATION AND REPLACEMENT:

8. PROGRAMMABLE LOGIC CONTROLLERS (PLC) AND HUMAN MACHINERY INTERFACE PROGRAMMING AND UPGRADING:

We proudly stand alongside the handful of Automation Engineers that are qualified and certified by Siemens, The world's leading Automation solutions provider from Germany. In order to deliver up-to-the-date products with quality, the technical staff at Horizon Electrotechnics undergo periodical career development programs at **Siemens-Strain**.

- Programming & Installation of new PLC's for industrial and Marine applications.

*Siemens SIMATIC S7-1200 Series
Siemens SIMATIC S7-1500 Series*

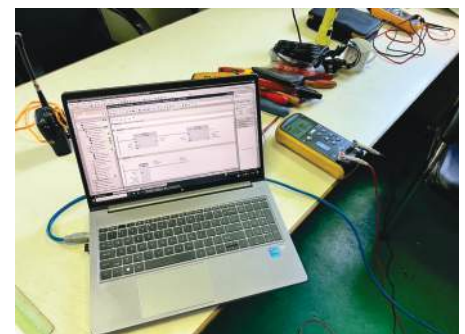
- Migrating from obsolete Siemens PLC's into Newly arrived Siemens PLC's. (Added benefits & Cos efficiency can be discussed by contacting our customer support line)

*From Siemens S7-200 - To Siemens S7-1200
From Siemens S7-300 / S7- 400 - To Siemens S7-1500*

- Upgrading Or replacement of of 3rd Party PLC's in Control panels in to Siemens PLC's

- Programming & Installation of Siemens HMI Devices.

- PLC's and HMI's of any other brand can be supplied, Programmed and Installed at request (Subject to Availability and Compatibility of the products).



9. HOR CONTROL SOLUTIONS :



Total Solutions

For Inter-connected Machinery

And Monitoring Systems

Total solutions for the various needs of interconnected machinery and monitoring systems for modern ships at sea.

Manufactured with best quality European products under stringent quality control methods.

All our products comply with applicable international safety standards such as IEC, EN and also comply with various classification society requirements.

- **HOR Controls i-CAMS**

Integrated Control and Monitoring System

- **Main Engine Performance Monitoring Systems**

A fixed, Online Main engine performance monitoring system is essential for managing the fuel economy, Operating / Spares cost reduction and also to contribute Energy efficiency targets.

Available for MAN B&W MC type engines, ME type engines and also for Wartsila RT Flex engines.

- **Tank level management and Valve remote control system**

A combined solution for Level monitoring of Ship's Ballast, Fuel, or Cargo tanks and also to remote operation of Hydraulic or Pneumatic tank valves.

- **Power Management Systems (P.M.S.)**

Automatic power management system for power generation, distribution and utilisation control on the ship.

Can be fitted with Low voltage or High voltage Main switchboards. Incorporated Circuit breaker protection and Diesel protection functions.

- **Remote fuel consumption monitoring system**

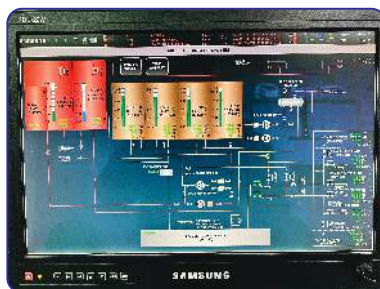
A fuel consumption monitoring system allows remote users such as Owners, Technical managers or voyage planners to monitor real time data of ship's fuel consumption.

- **Auxiliary engine control systems**

Horizon electrotechnics manufacture high quality Engine control systems, Engine safety systems for Auxiliary engines and Generator engines on ships of any type of make, model and capacity.

- **Main Engine Control Systems for MAN B&W, DOOSAN and Wartsilla engines.**

- Engine control systems.
- Engine safety systems.
- Governor control systems.
- Manoeuvring control systems.



10. SAFEMATIC AUTOMATION PRODUCTS :

Highly available and reliable ship's automation spare parts and products from Horizon Electrotechnics (Pvt) Ltd.

Combines the power of European technology. Modern PLC based solutions and freely available spare parts, Sensors. Reliable and Long lasting operation.

Significantly reduced cost compared to OEM spares or successive replacement parts.

Can be used for new building ships and also as replacement parts for existing defective, obsolete control panels on ships.

Add safematic logo. And keep space for 04 Photos.

- **Mooring and Anchor winch controllers.**
- **Purifier automation controllers.**
- **Auto pilot and Rudder control units.**
- **Air compressor controllers and sequencers.**
- **Main switchboard solutions**
 - **Motor controllers.**
 - **MSB motor automation central control units.**
- **Elevator control panels.**
- **Air condition plant and Compressor Auto controller units.**
- **Boiler automation controllers and Boiler control panels (Complete).**
- **Fuel oil or Lub oil Auto filter controllers.**



11. SWITCHBOARD FAULT EVENT LOGGER :

1. SYSTEM IS PLACED INSIDE THE LOW VOLTAGE COMPARTMENT OF THE SWITCHBOARD, HENCE DATA / PARAMETERS DIRECTLY FED FROM THE HV SWITCHBOARD TO THE MONITORING EQUIPMENT.

DATA CAPTURING IS FASTER, AND ALSO ABLE TO CAPTURE HIGH SPEED TRANSIENT FAULTS UP TO 100 MILI SECONDS.

2. PROVISION IS AVAILABLE TO MONITOR THE UNDER VOLTAGE TRIP DEVICE FUNCTION. THEREBY TO NOTIFY IF THE VCB IS TRIPPED BY THE U.V.T.
3. MONITORING SYSTEM IS INDEPENDENT AND TOTALLY ISOLATED FROM THE EXISTING CONTROL AND SAFETY CIRCUITS OF THE HV SWITCHBOARD.

NO INTERFERENCE WITH THE OPERATION, MONITORING AND THE SAFETY FUNCTIONS OF THE VCB.

4. COMPACT COMPONENTS. CAN BE EASILY MOUNTED INSIDE THE EXISTING ENCLOSURE. ALSO CAN BE CONNECTED TO EXISTING 110VDC POWER SUPPLY UNIT.
5. HIGHEST RELIABILITY THANKS TO THE SIEMENS (GERMANY) COMPONENTS.
6. **CAPTURES AND STORES MULTIPLE PARAMETERS SIMULTANEOUSLY. WHEN A FAULT TRIGGER IS ACTIVE RELEVANT PARAMETER VALUES ARE GRAPHICALLY DISPLAYED ON A 10 INCH WIDE COLOUR DISPLAY 01 MINUTE BEFORE AND 01 MINUTE AFTER THE INCIDENT. (TIME FRAME CAN BE CHANGED IN CONFIGURATION).**

DATA CAN ALSO BE DOWNLOADED ON TO A PC FOR EVALUATION.

7. EASILY CONFIGURABLE AND EXPANDABLE ACCORDING TO THE FUTURE REQUIREMENTS.
8. ECONOMICAL COST

"A VERY USEFUL TOOL FOR DIAGNOSIS AND BREAKDOWN MAINTENANCE. SAVES VALUABLE TIME FOR FAULT LOCATING AND TROUBLESHOOTING"



12. HIGH VOLTAGE AND LOW VOLTAGE SWITCHBOARD MAINTENANCE :

WE UNDERTAKE ALL TYPE OF BREAKDOWN REPAIRS AND MAINTENANCE SERVICES, SWITCHBOARD HEALTH CHECK AS A PART OF PLANNED MAINTENANCE, AND ALSO SERVICING OF VCB AND ACB.

PLEASE VISIT OUR WEBSITE FOR MORE DETAILS AND QUOTATION

SPARE PARTS SALES AND MARKETING:

High quality European made Electrical spare parts, Accessories and Measuring instruments are supplied to ships by us.



Terminal blocks
Terminal markers
Terminal accessories
Power supply units
Wire end ferrules and terminal lugs and splices.



Relay 24VDC / 24VAC / 220VAC.
Relay base.
Interface relays.



Moulded Case Circuit breakers (MCCB)
Miniature circuit breakers (MCB)
Push buttons Indicator lamps



PLC, HMI and data acquisition equipment.



Quality tools



Inductive proximity switches
Capacitive proximity switches
Level Sensors
All types of Industrial sensors and Transducers



Variable Frequency drives (VFD)



Variable Frequency drives (VFD)



Digital Multimeters
Oscilloscopes
Insulation resistance meters (Megger)
All types of Measuring instruments.

WORLDWIDE SERVICE REGIONS :

Port of Colombo - Sri Lanka
Port of Hambanthota
Colombo Dock Yard PLC.

Port of Singapore (Pasir Panjang)
Port of Dubai (Jabel Ali, Fujairah)

****Riding Repair teams are also available on request, Subject to Pre Bookings.***

Notes

**For further information and to learn about our complete range of
Products and Services please visit ;**

www.Horizonelectrotechnics.com

Or

Contact the customer help line;

Horizon Electrotechnics (Pvt) Ltd

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Automation for Marine & Industry