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3lionsgroup.com

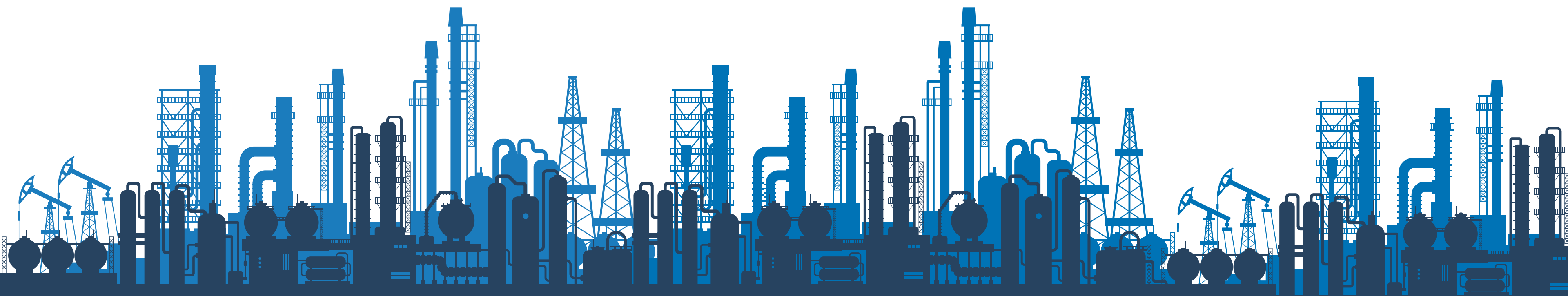


شركة ثري لايونز تریدینگ ذ.م.م

THREE LIONS TRADING COMPANY W.L.L

(Trading & Contracting)

Engineering | Digitalization | Decarbonization



India | K.S.A | U.A.E | Bahrain | Malaysia



About Us.

Founded in the Kingdom of Bahrain, Three Lions Group has rapidly expanded its operations across the entire GCC region. Our goal is to meet the growing needs for Electrical, Instrumentation, Automation, Navigation, Fire and Safety, Communication, Hydraulics, and Control Products and Services in the Industrial, Marine, and Oil & Gas fields. Three Lions upholds a robust Quality Management System certified by Bureau Veritas, conforming to ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards. This commitment ensures that we deliver excellence, safety, and innovation in every project.





Mission & Vision.

At 3Lions, we envision a future where digital transformation, IoT, and AI-driven insights redefine the maritime and industrial sectors, advancing them into the era of Industry 5.0. We are committed to creating smart, autonomous, and sustainable solutions that drive efficiency, profitability, and decarbonization. Through our solutions, we streamline asset health monitoring, predictive maintenance, oil analysis, inventory management, air quality monitoring, and emissions reduction. By enabling seamless data transfer and integration with existing systems, we empower industries to make informed decisions, mitigate risks, and optimize operations. Leading in decarbonization, we reduce emission from diesel engines and support compliance with evolving environmental standards, building a cleaner, smarter, and more resilient foundation for the future of maritime and industrial innovation.

Turnkey Solutions for Marine and Oil & Gas Industry.

We are committed to meeting the advancing demands of the industrial, marine, and oil & gas sectors. We excel in providing premier electrical, instrumentation, automation, navigation, fire and safety, communication, hydraulics, and control products and services. In 2023, we expanded our expertise to include Digitalization and Decarbonization solutions, aligning with Industry 5.0 goals and adhering to Marine classification standards. Our dedication lies in delivering innovative, high-quality solutions that drive safety, efficiency, and sustainability across all sectors we serve.



www.3lionsgroup.com



Our Commitment to Quality

At Three Lions Trading Company, our commitment to excellence is backed by our Quality Management System, certified to ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 by Bureau Veritas (BV). These certifications reflect our dedication to maintaining the highest standards, prioritizing customer satisfaction, and consistently delivering products and services that exceed expectations. Our experienced team continually evaluates and refines our processes to ensure ongoing improvement and value for our clients.

Our Team, Our Strength

Our team is our core strength. Comprised of highly skilled professionals with deep expertise in industrial, marine, and offshore sectors, we bring unmatched support and tailored solutions to our clients.



Staff

Strength of 60+ located in 6 countries



Digitalisation

Partnership with various A.I & IoT companies worldwide



Workforce

Trained and certified team for implementation



Marketing

Partnerships all over Middle East and India



Installations

Across Middle East and India

Our Esteemed Clients.

We take immense pride in our partnerships with our esteemed clients who have entrusted us with their most critical projects. Each of these projects are an example of our unwavering commitment to quality, reliability, and customer satisfaction. From main engine overhauls to intricate control system repairs, our comprehensive range of services is tailored to meet the diverse needs of our esteemed clientele.

We invite you to envision the possibilities that await when you join forces with us. Together, let's embark on a journey of innovation and excellence, where your aspirations become our achievements





Solutions & Services

For Shipyards

JACKUP BARGES / JACKUP RIGS

ELECTRICAL & INSTRUMENTATION

- Tank level gauging & alarm
- Azimuth thruster
- Emergency Shutdown System (ESD), various valve control systems
- Generator control system and testing of alarms & trips,
- Power management system, various system integrations
- Steering gear system
- Machinery room alarms
- Sizing, selection, supply & commissioning of field instrumentation, control valves, regulators and relief valves.
- Valve automation and actuation-SSVs, shutdown valves, motor operated valves.
- Servicing & overhauling of pneumatic control valves, solenoid valves, actuators etc.
- Valve Remote Control System (VRCS)
- Compressor / Alternator / Motor Overhauling
- Control System based on HMI, PLC & SCADA
- Bulk Handling System
- Alarm Monitoring System
- Gas Detection System
- Fire Detection System
- Motor control console with VFDs, soft starters & star-delta starting mechanisms
- PRV Calibration
- PAGA System
- Communication System

- Load Cell Calibration for Cement Tanks
- Leg Length Indicator System
- Calibration of Pressure Gauges, Tong Line Pull Gauge, Chart Recorders
- Breathing Air Cascade System
- Calibration of Switch Board Meters, OWS, Flow Meters, Torque Wrench, ETO Instruments
- Breaker testing of various manufacturers like ABB, Schneider, Mitsubishi, Terasaki (primary and secondary injection testing)
- Fibre Optics
- LMI System
- Insulation Testing of Motors, Compressor, Generators, Transformers
- PAT Testing
- Switch Board Cleaning & Retightening
- CCTV
- Helideck Lighting

SURVEY

- Noise Surveys
- Thermal Imaging
- Vibration and Condition Monitoring of Machineries,
- Light & dark Surveys
- Hazardous Area (ATEX) Inspection & Verification
- Torsional Vibration Analysis (TVA)
- Motor Current Signature Analysis

TANKERS – VESSEL / BULK CARRIERS / LNG / CONTAINER CARRIERS

ELECTRICAL & INSTRUMENTATION

- Boiler automation
- Main Engine Pneumatic Maneuvering
- Tank level gauging
- Bow thruster & stern thruster
- Process Control System (PCS), Emergency Shutdown System (ESD), various valve control systems
- Generator control system and testing of alarms & trips,
- Power management system, various system integrations
- Steering gear system
- Machinery room alarms
- Sizing, selection, supply & commissioning of field instrumentation, control valves, regulators and relief valves.
- Valve automation and actuation-SSVs, shutdown valves, motor operated valves.
- Servicing & overhauling of pneumatic control valves, solenoid valves, actuators etc.
- Valve Remote Control System (VRCS)
- Compressor / Alternator / Motor Overhauling
- IG System
- IGG Sytem
- AUS System For Cargo Loading or Discharge
- Compressor Overhauling
- Ship incinerator Control System
- Control System based on HMI, PLC & SCADA
- Bulk Handling System
- Alarm Monitoring System
- Gas Detection System

- Fire Detection System
- Alarms & Trips of Gas Compressor, COP, COPT, Ballast Pumps, Tank Cleaning Pumps
- PRV Calibration
- PAGA System
- Communication System
- Motor control console with VFDs, soft starters & star-delta starting mechanisms
- CCTV
- Calibration of Switch Board Meters, OWS, Flow Meters, Torque Wrench, ETO Instruments, ODME, UTI Tapes, Gas Analysers, OMD
- Breaker testing of various manufacturers like ABB, Schneider, Mitsubishi, Terasaki (primary and secondary injection testing)
- Fibre Optics
- LMI System
- Pressure Gauge Calibration
- Insulation Testing of Motors, Compressor, Generators, Transformers
- PAT Testing
- Switch Board Cleaning & Retightening

SURVEY

- Noise Surveys
- Thermal Imaging
- Vibration and Condition Monitoring of Machineries,
- Light & dark Surveys
- Hazardous Area (ATEX) Inspection & Verification
- Torsional Vibration Analysis (TVA)
- Motor Current Signature Analysis

OFF-SHORE SUPPORTING VESSELS

ELECTRICAL & INSTRUMENTATION

- Alarm Monitoring System
- Tank level gauging & alarm
- Bow thruster & stern thruster
- Generator control system and testing of alarms & trips
- Power Management System, various system integrations
- Steering gear system
- Main engine control system (pneumatic & electrical), main engine manoeuvring system
- Machinery room alarms
- Sizing, selection, supply & commissioning of field instrumentation, control valves, regulators and relief valves.
- Servicing & overhauling of pneumatic control valves, solenoid valves, actuators etc.
- Valve Remote Control System (VRCS)
- Compressor / Alternator / Motor Overhauling
- Control System based on HMI, PLC & SCADA
- Bulk Handling System
- Alarm Monitoring System
- Gas Detection System
- Fire Detection System
- Alarms & Trips of Gas Compressor, COP, COPT, Ballast Pumps, Tank Cleaning Pumps
- PRV Calibration
- PAGA System
- Communication System
- CCTV

- Motor control console with VFDs, soft starters & star-delta starting mechanisms
- Calibration of Switch Board Meters, OWS, Flow Meters, Torque Wrench, ETO Instruments
- Breaker testing of various manufacturers like ABB, Schneider, Mitsubishi, Terasaki (primary and secondary injection testing)
- Fibre Optics
- LMI System
- Tension Meters for Winches
- Pressure Gauge Calibration
- Insulation Testing of Motors, Compressor, Generators, Transformers
- PAT Testing
- Switch Board Cleaning & Retightening
- DP Systems
- Helideck Lighting

SURVEY

- Noise Surveys
- Thermal Imaging
- Vibration and Condition Monitoring of Machineries,
- Light & dark Surveys
- Hazardous Area (ATEX) Inspection & Verification
- Torsional Vibration Analysis (TVA)
- Motor Current Signature Analysis

Case Study

Cable Laying – Conversion Project

Client	Rawabi Vallianz Offshore Services & Vallianz Ship Building & Engineering PTE LTD.
Vessel	RAWABI INTEGRITY (FSSO Upgradation Project)
Work Location	ASRY Shipyard, Bahrain
Cable type	LV power, control cables, Ethernet Cables
Duration	60 Days

Objectives:

1. Install and terminate all power, control and communication cables.
2. Ensure compliance with IMO, Class society and ARAMCO standards.
3. Complete Cable installation within schedule.

Cable Length Laid per systems:

Main Electrical System Cable - 12 Km

PG Control System- 4 Km

Remote Valve Control System Interfaces- 6 Km

Dry Bulk Handling System- 3 Km

Alfa Laval Control System- 3 Km

Gas Detection system-3 KM

Key Activities:

1. Route Planning

- Cable routes studied as per cable schedule provided by the client and planned the cabling schedules as per client priority
- Coordination with piping and structural teams to avoid clashes.

2. Material Handling & Storage

- Segregated storage based on cable type.

3. Cable Pulling

- Manual cable pulling through trays, ducts, and bulkhead penetrations.

4. Securing & Dressing

- Stainless steel cable ties for engine room, cargo decks, pump room and exposed areas.

5. Penetration Sealing

- Fire and watertight sealing for all bulkhead and deck penetrations using MCTs (Multi-Cable Transits).

6. Termination & Labelling

- Lug crimping, glanding, and dressing inside panels.
- Tagged cables with marker sleeves.

Challenges Faced:

Challenge	Description	Solution
Cable congestion	High cable density in main cable corridors	Installed multi-tier cable trays and optimized routing
Climatic conditions	High humidity and temperature in shipyard	Used protective sleeves and scheduled sensitive work at cooler hours
Cross-trade interference	Other teams (pipe fitters, welders) working simultaneously	Implemented zone-based scheduling and coordination meetings with other teams.

Key Outcomes

- 100% cable installation completed on time.
- Passed testing and commissioning of systems without delay

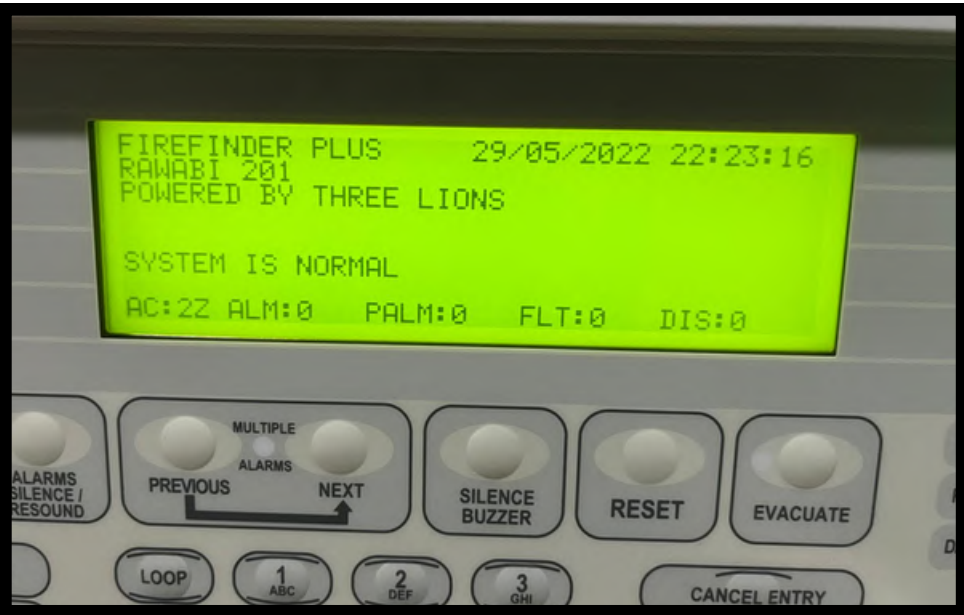
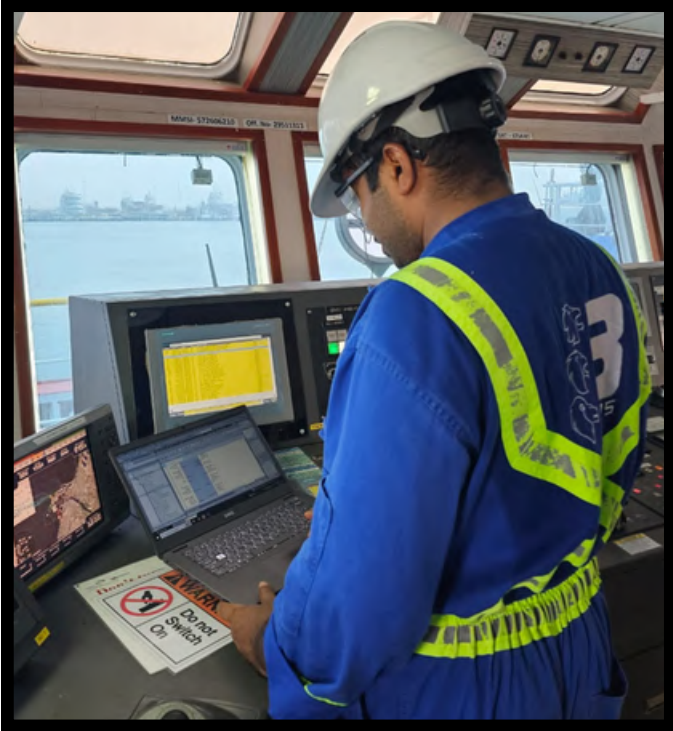
Standards & tools Used

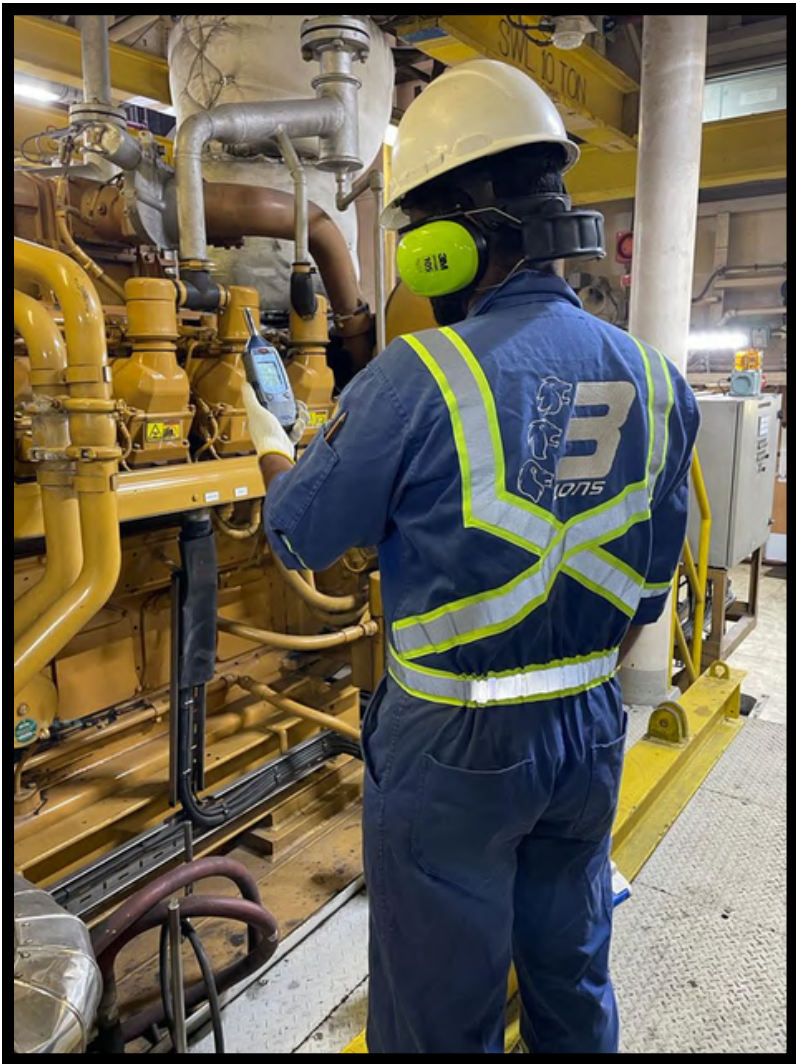
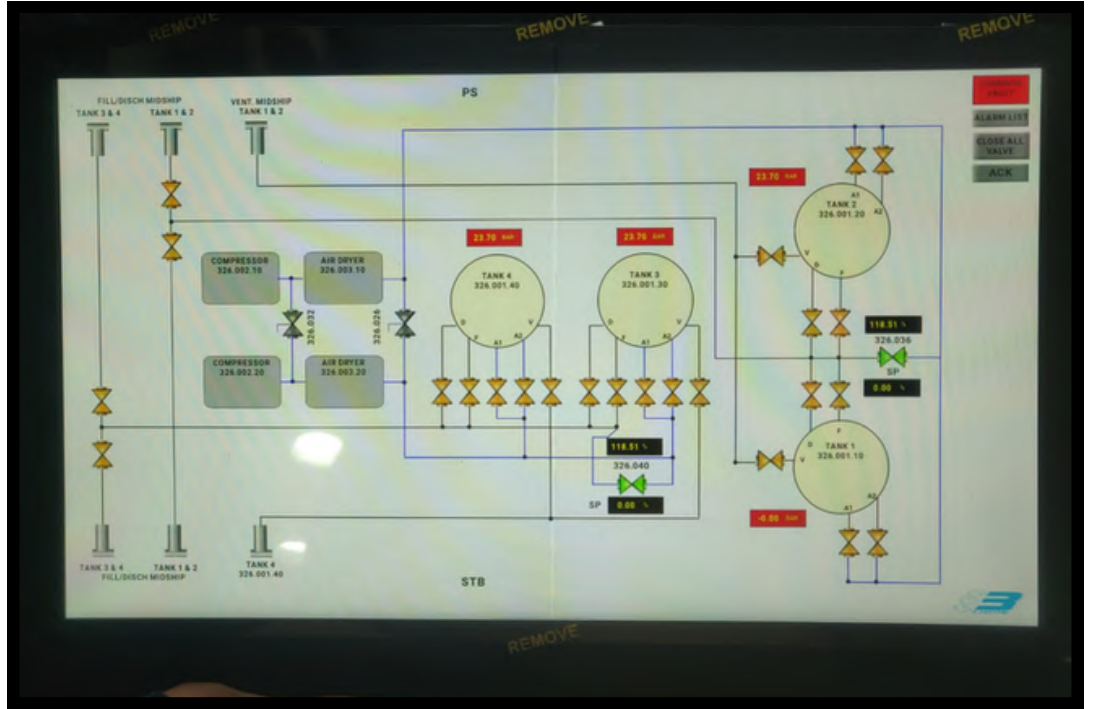
- Standards: IEC 60092, IEEE 1580, SOLAS, Class Society Guidelines.
- Tools: Cable drum jacks, cable testers, Ethernet cable testers, torque wrenches

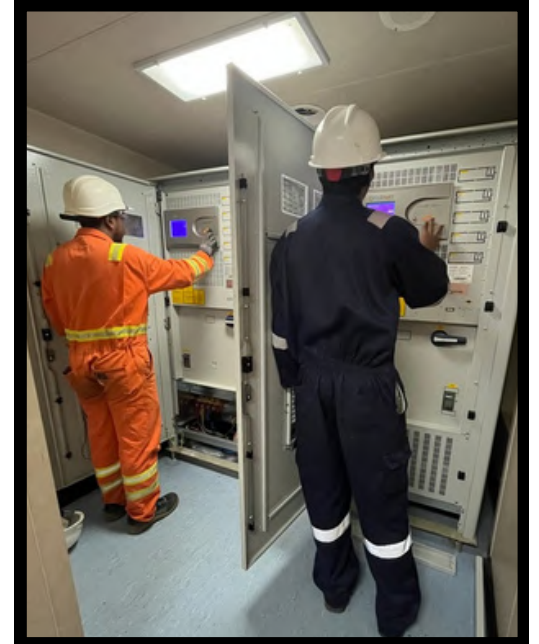
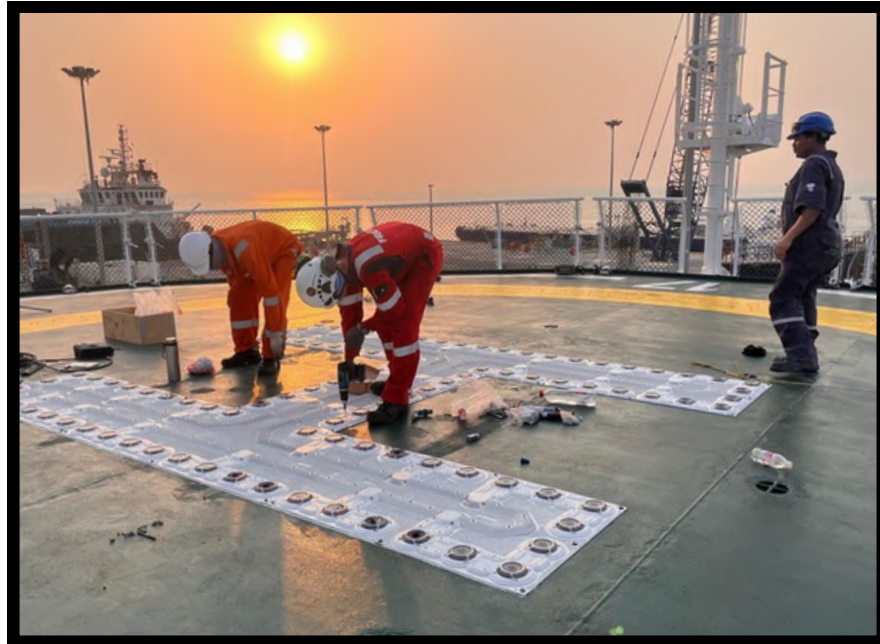
Conclusion:

The cable laying work onboard the vessel has been successfully completed in accordance with the approved engineering specifications and industry standards. All cables were routed, secured, and terminated properly, ensuring safety, functionality, and compliance with classification society requirements. Proper tagging and insulation checks were carried out, and continuity and insulation resistance tests were completed to verify system integrity and completed the Objectives successfully within the time frame.

On-Board Service Photos







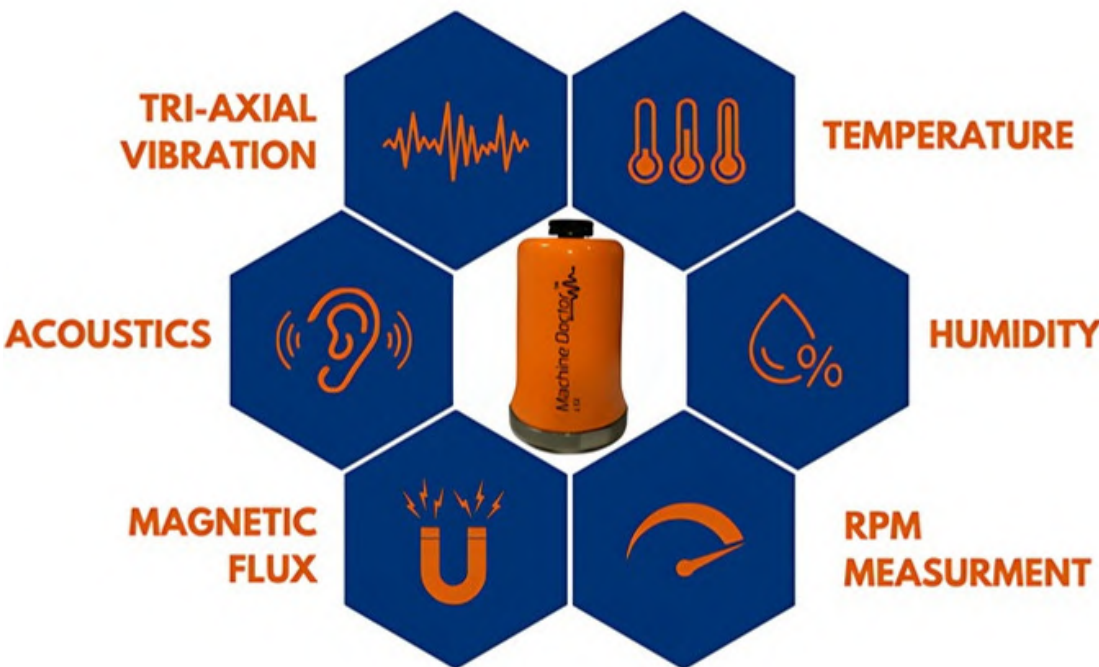
Condition Monitoring

- **AI-Based Energy-Centric Predictive Maintenance**



Plug and Play, 6-in-1 Parameter Measurement

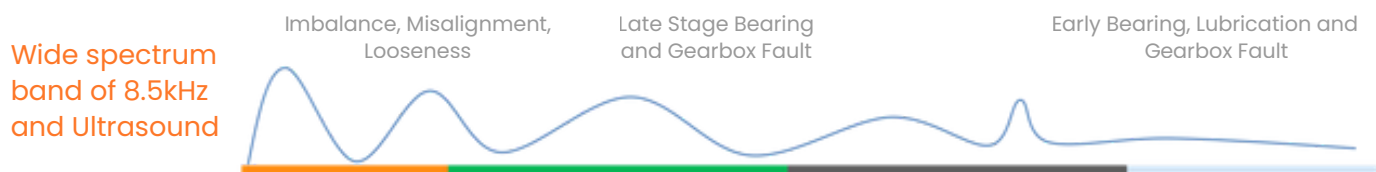
The sensor can detect and measure triaxial vibration, acoustic emissions, temperature, true RPM, humidity, and magnetic flux. Installed & connected in less than 5 minutes, the MachineDoctor sensor can be easily configured and deployed on your own.



ioEYE Predict Sensors wired C2000



- Tri-axial
- Vibration
- Ultrasound
- Magnetic Flux
- Temperature
- Runhours RPM
- 24 x 7 Monitoring PoE
- Powered Industrial
- Grade housing - SS316 & PC
- IP68



Online Electrical Signature Analysis (ESA)



- Motor Current Signature Analysis (MCSA)
- Extended Park Vector Approach (EPVA)
- Pump Best Efficiency Point (BEP)
- Broken rotor bars
- Air gap eccentricity
- Shorted turns
- Mechanical imbalance or misalignment
- Bearing failure Gearbox
- Failure VFD issues
- Insulation issues
- Clogging, cavitation,
- Gas slug and gas lock
- Impeller, blade or vane failure

High resolution current and voltage spectrums for fault and electrical issues.

- **Oil Analysis for Predictive & Preventive Maintenance**

Effective predictive and preventive maintenance is essential in the marine and oil & gas sectors to reduce repair costs and maximize equipment uptime. Our onsite oil analysis system monitors the physical and chemical properties of lube oil, detecting wear metals and contaminants to assess lubrication effectiveness and equipment wear. It also diagnoses wear types, identifies wear locations, and reveals root causes, enabling data-driven maintenance decisions. This proactive approach prevents major failures and reduces the risk of costly industrial accidents. The system is suitable for analyzing engine, lube, and motor oils, offering a reliable, cost-effective solution. Overall, it enhances equipment health management and operational efficiency.

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