

PT. TRI AGUNG SINERGI

COMPANY PROFILE

Best Partner in Electrical Repair, Instrument Control, Automation Solutions, Smart IoT Monitoring, Calibration Services & Technical Supply — Industrial & Marine



TRIAS GROUP

ELECTRICAL · INSTRUMENTS · AUTOMATION SPECIALIST

OFFICE & WORKSHOP

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01 · WHO WE ARE

About Our Company

TRIAS GROUP | PT. Tri Agung Sinergi is an Indonesian national company specialising in **electrical power systems, instrumentation and control, automation consulting**, and **calibration services accredited by KAN** (National Accreditation Committee of Indonesia). We serve both **industrial plants** and the **marine sector**.

Intense business competition requires industry to keep developing ideas that are innovative, relevant, practical and sustainable — to optimise production performance, equipment reliability and utility support, so that companies can raise performance, reduce production costs and deliver the best service to their own customers.

Finding skilled experts in electrical and automation, together with reliable equipment supply and calibration support, remains one of the biggest challenges facing industry today. **TRIAS GROUP** was established to answer that challenge — as a dependable working partner that grows together with your business.

By continuously developing and optimising our products and services, supported by experienced engineers, professional technicians and a well-equipped workshop, **TRIAS GROUP** is committed to delivering the best possible service to every customer.



20+
years of experience in engineering services

KAN
accredited calibration (ISO/IEC 17025)

±25
professional partner technicians

24/7
technical support orientation

Industries we serve

Marine & Shipping · Shipyards · Oil & Gas · Chemical & Petrochemical · Pharmaceutical · Food & Beverage · Cosmetics · Automotive · Textile · Plastics (Blow & Injection Moulding) · Buildings & Hotels · General Manufacturing

02 · DIRECTION

Vision, Mission & Values



Vision

To be the best partner for total solutions in Electrical, Instrumentation, Calibration and Automation.

Motto

"We serve our customers with the very best of our capabilities and quality, at competitive prices and fair offers, guided by the principles of ***Excellent Service, Customer Focus, Quick Response, Fast Delivery & Total Solutions****."*

SAFE · PRODUCTIVE · OPTIMAL · EFFICIENT

Mission & Strategy

- Create innovative ideas, concepts and automation designs that are practical, relevant and fit for purpose according to customer needs — including industrial-standard calibration services accredited by KAN.
- Keep pace with up-to-date and dynamic technology through continuous improvement in Electrical Test Performance, Automation, Instrumentation and Energy Management Systems, in line with customers' demands for optimisation, effectiveness and efficiency.
- Always seek alternative solutions — especially for discontinued and obsolete products — to eliminate dependence on any single brand.
- Remain oriented to technical support 24 hours a day.

TRIAS Values

INTEGRITY
Honesty · Objectivity · Accountability

PASSION
Ambition · Inspiration · Innovation

FULL SUPPORT
Performance · Focus · Results

PARTNERSHIPS
Responsiveness · Collaboration · Support

03 · BUSINESS DIVISIONS

What We Do

1 · Instrument Control, Calibration & Automation Solutions

Instrument Control & Calibration — Regular instrument calibration and integrity checks (temperature sensors, pressure transmitters, flow meters, scales & weighing) with KAN-accredited certificates referring to ISO/IEC/SNI 17025; fire alarm system assessment, control testing, inspection, maintenance and troubleshooting; energy instrumentation & measurement for energy audits (air/liquid/steam/gas pressure & flow, vibration, thermography); compressed air quality measurement (dew point, water, dust & oil content) per ISO 8573 for pharmaceutical, F&B, marine and general industry.

Automation Solutions — Industrial automation systems, programming, concept design, modification & upgrading; site installation, commissioning, FAT, SAT & documentation; low-cost automation improvement; emergency troubleshooting & training (SCADA, PLC, HMI, servo motor, inverter); Building Automation System (BAS); power & energy monitoring; HVAC control; GSM module monitoring & reporting; automatic production display, monitoring & reporting (counter & hour-meter based).

2 · Electrical Power Systems

Panel maker/builder (MVMDP, LVMDP, MDB, SDP, ATS, AMF, etc.); electrical safety, integrity assessment & inspection per national standard (SNI PUIL 2011, amended 2012–2015) and international standards (IEC, IEEE, NEMA, NFPA, ANSI); thermography inspection; power system & load-flow studies; power quality analysis (power factor, harmonics, transients, dips, swells); capacitor banks, passive/active filters & damping reactors; primary & secondary testing; relay protection coordination; switchgear & transformer testing, calibration and preventive maintenance.

3 · Repair, Service & Troubleshooting Training

Repair and service of instrument transmitters, transducers, inverters, servo drivers, servo/stepper motors, PLCs, HMIs and electronic modules.

4 · Electrical, Instrument & Automation Supply

Importer and stockist of PLC / HMI / UPS; explosion-proof equipment for hazardous areas (Zone 1 & 2) and non-explosion-proof electrical equipment.

5 · Mechanical–Electrical (ME) & Utility Maintenance

Scaling/descaling, cleaning, inspection, preventive maintenance, overhaul and retrofitting of generators (AE/ME), boilers, HVAC systems, chillers, cooling towers and AHU/FCU; mechanical fabrication & sanitary works.

6 · Marine Division — Ship Electrical, Automation & Monitoring

Electrical and automation projects on board; troubleshooting and routine maintenance of ship electrical systems, automation, **generators and electromotors**; general alarm systems; engine-room alarm & monitoring; calibration of shipboard instruments supporting class survey (BKI) and docking/annual repair; and **Smart Ship Integrated Monitoring** via IoT.

04 · PRODUCTS & SERVICES

Solutions Portfolio

Instrumentation Control & Automation

- Industrial automation systems & solutions
- Programming, concept design, upgrading & modification
- Site installation, commissioning, FAT, SAT & documentation
- Emergency troubleshooting & training (SCADA, PLC, HMI, servo motor, inverter, etc.)
- Building Automation System (BAS)
- GSM module monitoring & reporting
- Automatic production display, monitoring & reporting

Industrial Product Supply

- PLC / HMI / UPS
- Explosion-proof equipment for hazardous areas
- Non-explosion-proof equipment
- Electrical equipment & components

Electrical Power Systems

- Panel maker (MVMDP, LVMDP, MDB, SDP, ATS, AMF, etc.)
- Electrical inspection
- Power studies (harmonics, voltage/current unbalance, power factor, frequency)
- Thermography inspection
- Capacitor banks, active/passive filters, damping reactors

Calibration Services

- Flow meters (digital/analog)
- Conductivity meters
- pH meters
- ODO meters
- Temperature indicators
- Temperature sensors (TC & RTD)
- Portable scales
- Weighing & load cells
- Pressure transmitters
- Electrical testers
- Protection relays
- Light quantity
- Timer quantity

Energy & Environmental

- Energy audit
- Energy monitoring system
- HVAC performance audit
- Compressed air measurement (dew point, water, dust & oil content) per ISO 8573
- Wastewater treatment plant (WWTP) optimisation & monitoring







Selected field work: automation & HMI, panel building, thermography, instrument calibration and utility maintenance.

06 · FLAGSHIP PRODUCTS

TRIAS Smart Panel Control (SPC)

Customised & multi-function — Economical, Medium & Advanced types

Target: truly low-cost automation that increases efficiency, productivity, quality and safety.

Customised I/O

- PLC and HMI of any brand, per customer request
- Custom-sequence digital input/output, high-speed pulse & counter
- Multi-signal instruments: 4–20 mA, 0–10 V, RTD, TC, RH sensors, load cells and all instruments
- Multi-network devices: Ethernet TCP/IP, Modbus RTU RS485, RS232, CAN, Profibus, etc.

Applications

- Oil & gas, marine, chemical, petrochemical, pharmaceutical, cosmetics, F&B, automotive, textile, blow & injection moulding
- Processing, filling, packaging, conveying, boilers, chillers, AHU, WWTP, pumping, compressor control (upgrade & retrofit)

Smart Functions

Real-time view, trend recording & data logging, barcoding, IoT real-time monitoring and GSM module — supporting **Industry 4.0**.



TRIAS Smart Panel Control — custom-built panels.



Automation Simulator Kit

- Upgrades the skills of engineers, technicians and students by putting theory into practice
- Enables offline FAT testing so that commissioning matches the expected sequence on site
- Compatible with current information technology (IoT systems)
- Supports the Industry 4.0 technology revolution
- Multi input/output — digital, analog and all network devices

07 · SMART FACTORY

Total Smart Solution

For utility, process, production and plant manufacturing

We use data to trace and analyse every error in production, weighing, critical process parameters, quality integrity, utilities, energy consumption and power quality.

Process & Production Monitoring

Connected to every machine, the system monitors production in real time and delivers live, up-to-date information to any part of your factory.

Critical Parameter – Utility Monitoring

Data is used to trace and isolate critical issues and analyse errors in utilities affecting the process, then to develop and measure performance to improve the utility system.

Energy Management System

Calculates and identifies electrical power consumption and measures critical parameters.

Electrical Integrity Inspection

Electrical integrity assessment and power system studies.



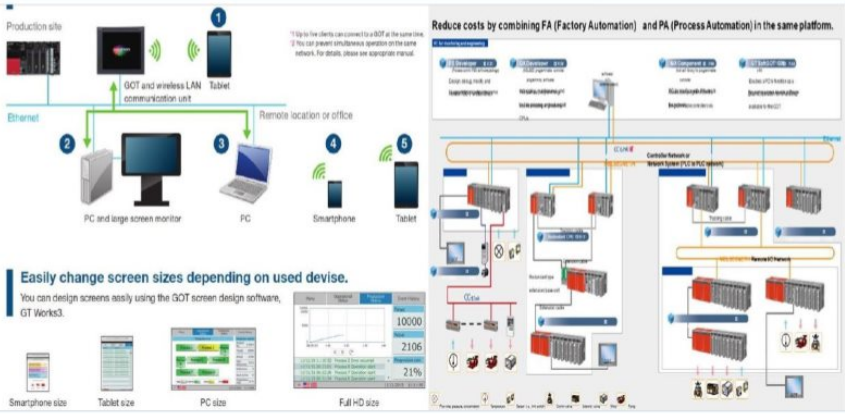
Key issues of traditional manufacturing — solved by a data-driven factory that enhances productivity and flexibility.

Process & Production Monitoring — Industrial Dashboard (IDB)

One of the best systems used across industries today is the **Industrial Dashboard (IDB)** for Industry 4.0. Using IoT technology, it lets you monitor production over wireless or internet connections — tracking production processes and machine performance from anywhere via smartphone, tablet, PC or laptop. Factory automation (FA) and process automation (PA) are combined on one platform to reduce cost.

08 · SYSTEM ARCHITECTURE

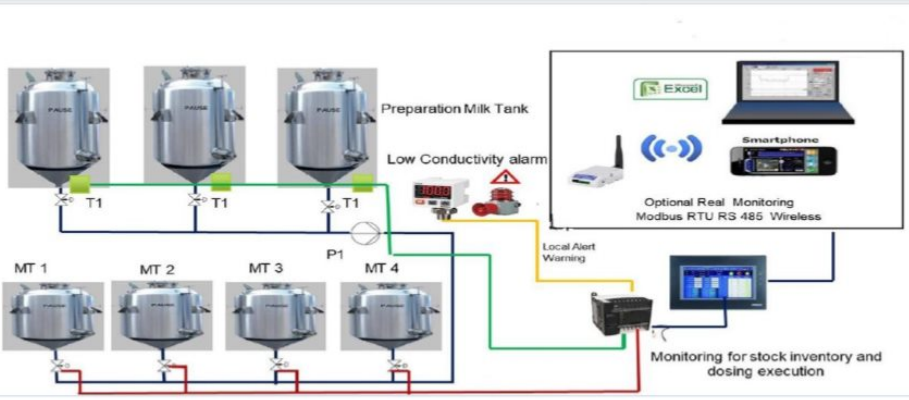
Monitoring Solutions in Practice



Industrial Dashboard: GOT wireless LAN, PC, large-screen monitor, smartphone and tablet access; screen size adapts to the device.

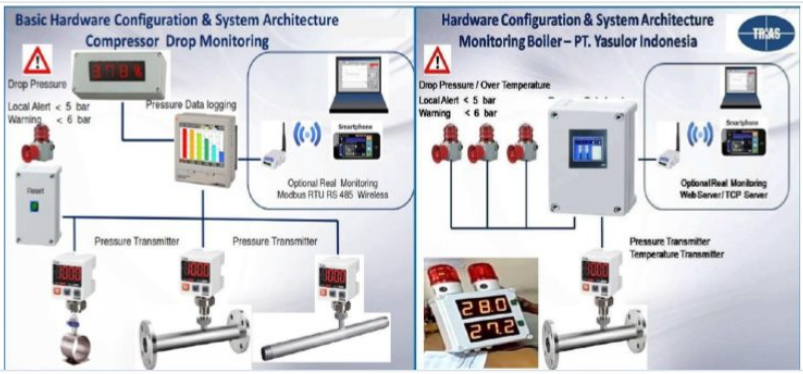
Weighing Hardware Configuration

An integrated system to control and monitor every event in the process — bringing the machine closer to the owner. Data is processed into MS Excel and monitored through the local network, with low-conductivity alarms, stock-inventory and dosing-execution monitoring, and optional wireless Modbus RTU RS485 real-time monitoring.



Critical Parameter – Utility Monitoring

Compressor pressure-drop monitoring and boiler monitoring (reference project: PT Yasulor Indonesia) — pressure/temperature transmitters, data logging, local alerts (e.g. alert < 5 bar, warning < 6 bar) and optional web/TCP-server remote monitoring.

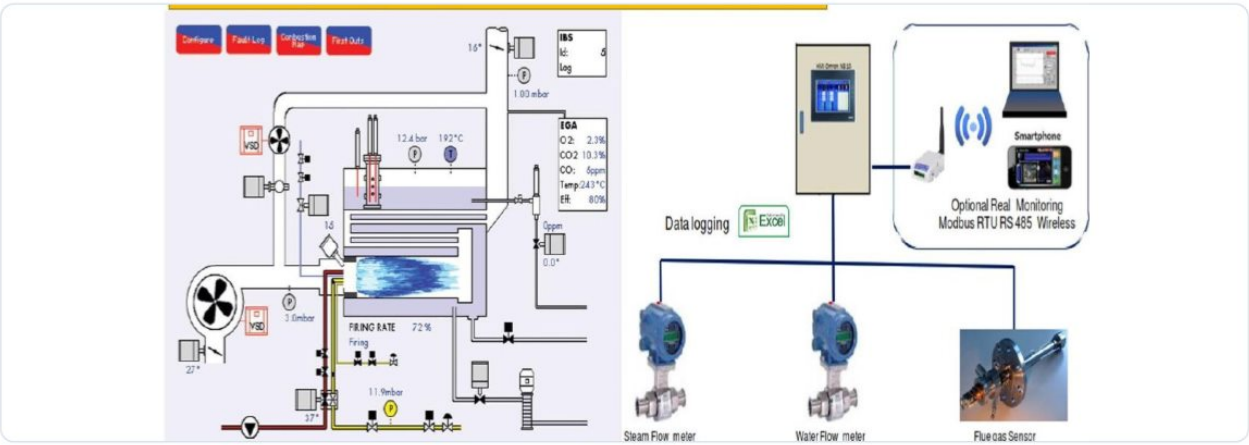


09 · ENERGY

Energy Management System

Boiler Efficiency – Energy Saving

Steam flow meters, water flow meters and flue-gas sensors feed a data logger (MS Excel) with optional wireless real-time monitoring, giving live visibility of combustion and boiler efficiency.



Our EMS supports energy-saving activities in factories, buildings and schools by building **visualised environments** and managing energy effectively — keeping energy conditions under control at all times, resolving energy-loss problems quickly, and ultimately reducing energy loss, increasing productivity and cutting production costs.

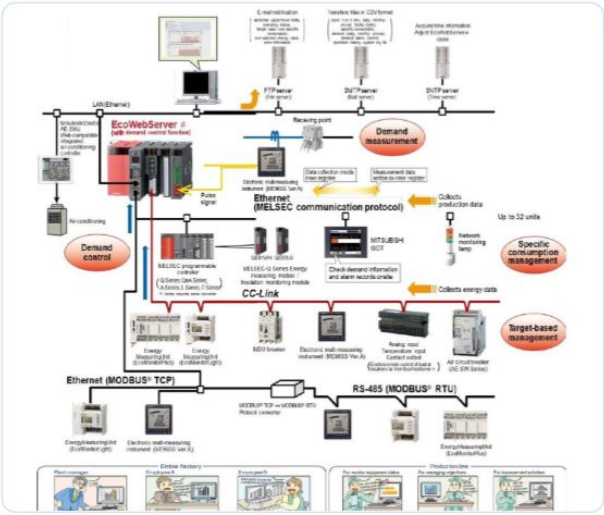
Why visualise energy?

Target value management turns actual conditions into ideal ones. It requires understanding the real situation and how much "unseen" waste exists — managing operations in detail, moving from months to days and from lines to individual equipment, and evolving from "seeing" waste to "understanding" it.

Demand management. Electricity charges are largely based on the highest demand of the year (contract demand). The EMS computes demand from pulse meters, estimates the value at the end of each 30-minute period, raises alarms (buzzer, lamp or contact output) when targets are exceeded, and can automatically interrupt loads — reducing demand and basic charges.

Visible management — five functions

- Monitor/manage energy by department
- Consumption-based management of energy-saving activities
- Monthly/annual target-based management
- Monitoring of equipment operating status
- Management and recording of energy data



EMS hardware configuration: EcoWebServer with demand control, multi-measuring instruments, CC-Link, Modbus TCP/RTU.

10 · ELECTRICAL INTEGRITY

Electrical Integrity Inspection

Assessment & power system studies

Power quality issues cause business problems

- Lost productivity, idle people and equipment
- Lost orders, goodwill, customers and profits
- Lost or unprocessed transactions
- Revenue and accounting problems
- Customer and/or management dissatisfaction
- Overtime to make up for lost work time

Today's competitive environment requires plant and building managers to be fully aware of the total cost of owning their power distribution system and to seek maximum return on capital invested in it. Digital simulation lets us study the performance of proposed and existing systems under many operating conditions — answering questions on expansion impact, short-circuit capacity, stability, load distribution and more.

Test & measurement equipment

Power quality analyser · Megger insulation resistance tester · Grounding clamp meter · Grounding tester · Thermal imager





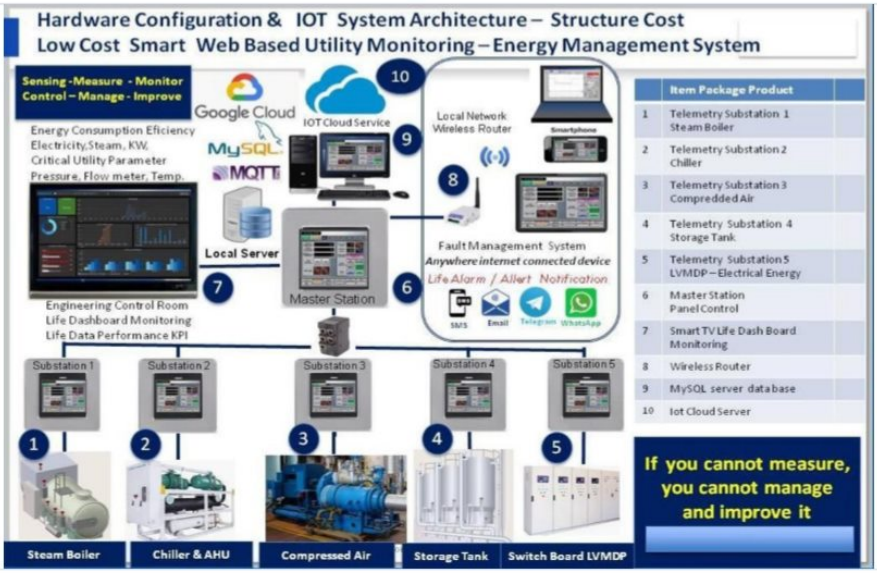
Field measurement: ampere, pressure, temperature, flow, voltage and harmonics.

11 · IOT MONITORING

IoT Systems for Plants & Ships

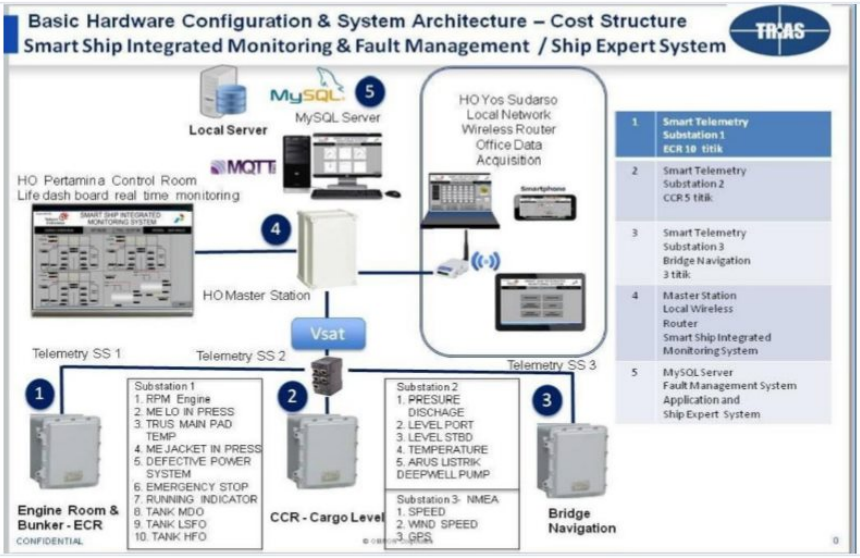
Low-Cost Smart Web-Based Utility Monitoring & Energy Management

Sense · Measure · Monitor · Control · Manage · Improve. Telemetry substations on the steam boiler, chiller & AHU, compressed air, storage tanks and LVMDP feed a master station panel, a smart-TV live dashboard, MySQL database and IoT cloud server — with fault management and alarm notification via SMS, e-mail, Telegram and WhatsApp. *If you cannot measure it, you cannot manage and improve it.*



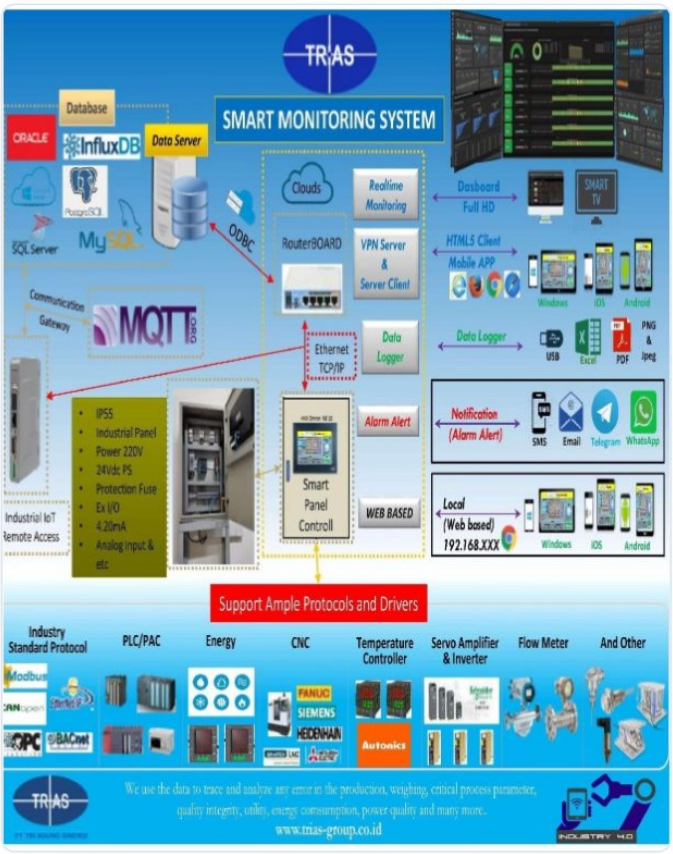
Smart Ship Integrated Monitoring & Fault Management / Ship Expert System

Telemetry substations in the **engine room & bunker (ECR)** — main engine RPM, lube oil pressure, thrust pad temperature, jacket water pressure, power failure, emergency stop, running indicators, MDO/LSFO/HFO tank levels; **cargo control room (CCR) —** discharge pressure, port/starboard levels, temperature, deep-well pump current; and **bridge navigation** (NMEA speed, wind speed, GPS). Data is sent via VSAT to the head-office master station and MySQL server for a live real-time dashboard.



12 · PLATFORM

TRIAS Smart Monitoring System



Architecture

- **Smart Panel Control** (IP55 industrial panel, 220 V supply, 24 VDC PSU, fuse protection, Ex I/O, 4–20 mA and analog inputs)
- Industrial IoT gateway with remote access via MQTT
- Data server: Oracle, InfluxDB, PostgreSQL, MySQL, SQL Server, cloud
- RouterBOARD with VPN server & client

Features

- Real-time monitoring on Full-HD dashboards and smart TVs
- HTML5 client & mobile app — Windows, iOS, Android
- Local web-based access
- Data logger export: USB, Excel, PDF, PNG/JPEG
- Alarm alerts via SMS, e-mail, Telegram, WhatsApp

Supported protocols & devices

Modbus, CANopen, EtherNet/IP, OPC, BACnet; PLC/PAC; energy meters; CNC (Fanuc, Siemens, Heidenhain, Mitsubishi); temperature controllers; servo amplifiers & inverters; flow meters and more.

We use data to trace and analyse any error in production, weighing, critical process parameters, quality integrity, utilities, energy consumption, power quality and much more — **ready for Industry 4.0**.

15 · COMPLIANCE

Legal Documents & HSE Policy

Company Legality & Supporting Letters

Available on request

Copies of our company legality documents and engineer registration certificates are shared directly with clients for tender and vendor registration.

- Deed of establishment & Ministry of Law and Human Rights approval
- Trading Business Licence (SIUP) & Company Registration Certificate (TDP)
- Taxpayer registration (NPWP) & VAT-registered entrepreneur (PKP) certificate
- Principal / partner support letters (Mettler Toledo, Omron, Eastern Pro Engineering)

Health & Safety Policy

Our general policy statement is:

- to provide adequate control of the health and safety risks arising from our work activities;
- to consult with our employees on matters affecting their health and safety;
- to provide and maintain a safe working environment and equipment;
- to ensure safe handling and use of substances;
- to provide information, instruction and supervision for employees;
- to ensure all employees are competent to do their tasks, and to give them adequate training;
- to prevent accidents and cases of work-related ill health;
- to maintain safe and healthy working conditions;
- to review and revise this policy as necessary at regular intervals.

Our commitment

With more than 20 years of experience in engineering services, TRIAS GROUP is here to deliver the best service for your business — as your best partner in electrical, instrument control and automation solutions, calibration services, consulting, contracting and technical supply.



LET'S WORK TOGETHER

Your Best Partner in Electrical, Instruments & Automation

Excellent Service · Customer Focus · Quick Response · Fast Delivery · Total Solutions

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