



جال الطاقة
JAL Energy

Local Electrical Manufacturing

Intelligent systems for utility and industrial power networks.

AUTOMATION • PROTECTION • MONITORING • METERING



Who We Are

Saudi made

Integrated electrical expertise.



JAL Energy is a specialized Saudi company established from JAL International, drawing on over 40+ years of experience in the Kingdom to serve utilities, oil and gas, petrochemicals and infrastructure.

We engineer, manufacture, integrate, test and support electrical automation, protection, monitoring and metering systems locally.

Core Capabilities

- Intelligent Substation Automation and Power System Integration.
- SCADA, RTU and Sequence of Events Recording Systems.
- Control, Protection and Relay Systems up to 380 kV.
- Energy and Revenue Metering Systems.
- Dynamic System Monitoring, Digital Fault Recording and Traveling Wave Fault Location.

Local Manufacturing and Lifecycle Support

In-Kingdom delivery enables close customer coordination and responsive site support. Our approach supports Saudi talent, domestic supply chains and technology localization in line with Saudi Vision 2030.

Markets We Serve

Our market focus includes Saudi Energy, Saudi Aramco, SABIC and major industrial organizations. Customer approvals and qualifications are addressed for each product and project scope.



Vision Mission and Core Values

The principles behind our delivery.



Vision

To be a leading Saudi manufacturer and integrator of electrical systems, supporting a reliable, intelligent and sustainable energy sector.

Mission

To deliver locally engineered automation, protection, monitoring and metering systems through skilled people, proven technology and disciplined execution.

Core Values

Safety and Quality - Protect people and assets through safe practices and consistent quality.

Integrity and Accountability - Work transparently and honor our commitments.

Innovation and Teamwork - Combine expertise and collaboration to solve customer challenges.

People and Development - Build Saudi technical capabilities through training and knowledge transfer.

Localization and Responsibility - Strengthen domestic manufacturing and supply chains.

Customer Relationships - Deliver dependable solutions and responsive support.

Financial Discipline - Manage resources responsibly for sustainable performance.



Substation Automation and Integration

Connecting field equipment, station systems and control centers.



System Engineering

JAL Energy engineers integrated Substation Automation Systems linking bay equipment, protection IEDs, station HMI and remote control centers. Architecture, redundancy and interfaces are coordinated with the approved operating philosophy.

Technical Capabilities

- IEC 61850 station-bus integration, IED data models, SCL configuration and GOOSE messaging where specified.
- Bay control, breaker status, local/remote selection, permissives, interlocking, alarms and event reporting.
- Managed Ethernet networks, gateway data mapping and GPS-based time synchronization to project requirements.
- Integration with RTU, SCADA, metering, annunciation and AVC/RTCC systems through approved interfaces.

Integration and Validation

Engineering covers architecture drawings, signal lists, communication schedules and configuration control. FAT/SAT verifies point mapping, control sequences, interlocks, timestamp alignment and specified network failover. Handover includes as-built drawings, configuration backups and test records.

SCADA RTU and SOER Systems

Clear visibility. Reliable control. Traceable events.



Supervisory Control and Data Acquisition

JAL Energy integrates SCADA, Remote Terminal Units (RTU) and Sequence of Events Recording (SOER) systems for substation and industrial networks, coordinating field signals with station and control-center databases.

Technical Capabilities

- Analog and digital I/O engineering, scaling, deadbands, data quality flags and event reporting.
- HMI mimic diagrams, equipment status, alarm priorities, trends and historical data.
- Remote commands with select-before-operate where specified, permissives, local/remote authority and feedback checks.
- IEC 60870-5-101/104, IEC 61850, DNP3, Modbus and OPC interfaces, subject to equipment capability.
- SOER captures timestamped breaker operations, protection trips and alarms using coordinated time synchronization.

System Verification

Testing covers point-to-point signals, command execution, event order, communication loss and specified failover/recovery. Access controls, network segmentation and backups follow customer cybersecurity requirements. Deliverables include I/O databases, panel drawings, configuration files and FAT/SAT records.

Control Protection and Relay Systems

Engineered for substations up to 380 kV.



Protection and Control Engineering

JAL Energy engineers and manufactures control and relay panels for substations up to 380 kV, aligning schemes, CT/VT interfaces and relay configuration with approved protection studies and customer requirements.

Protection Functions

- Transformer differential and restricted earth fault; line distance and line differential protection.
- Busbar differential, breaker failure, auto reclosing and synchronism check schemes.
- Overcurrent, earth fault and project-specified load shedding functions.
- Breaker trip/close circuits, interlocks, trip circuit supervision and interfaces with SAS, RTU and disturbance recorders.

Engineering and Verification

Scope includes schematics, panel layouts, terminal schedules, CT/VT burden checks and auxiliary supply coordination. Relay settings follow approved studies and customer authorization. Wiring checks, secondary injection, logic tests and trip/close verification support FAT/SAT. Handover includes as-built drawings, setting files, configuration backups and test reports.

Energy Metering and AC DC Panels

Accurate measurement and dependable station supplies.



Energy and Revenue Metering

JAL Energy manufactures metering panels incorporating energy meters, CT/VT interfaces, test blocks and communications for utility substations and industrial networks.

- Active/reactive energy, import/export measurement, demand and load profiles according to meter capability.
- Main/check metering where specified; meter accuracy, ratios, burdens, sealing and communication interfaces to approved utility requirements.
- CT shorting and voltage isolation facilities support safe meter testing and maintenance.

AC and DC Distribution

AC panels supply station auxiliaries; battery-backed DC panels feed protection relays, control circuits and breaker trip/close circuits. Engineering addresses supply ratings, fault levels, feeder protection, earthing and circuit identification

- Dual supplies, automatic changeover, voltage supervision and failure alarms where specified.
- DC feeder segregation, supply monitoring and earth fault alarm interfaces coordinated with the station battery/charger system.

Testing and Handover

Verification covers wiring, polarity, ratios, meter configuration, communication checks, feeder operation and specified changeover functions. Deliverables include panel drawings, feeder schedules, equipment data and test records.

DSM DFR and TWFL Systems

Understand disturbances and locate transmission line faults.



Disturbance Monitoring and Fault Analysis

JAL Energy integrates DSM, DFR and TWFL systems to support grid stability assessment, protection performance analysis and transmission line fault investigation.

Recording and Location Functions

- **DSM - Dynamic System Monitoring:** records operating conditions and dynamic voltage, current and frequency behavior to support analysis of oscillations, power swings and reclosing.
- **DFR - Digital Fault Recording:** captures high-speed pre-fault/post-fault waveforms, digital states and event records from configured triggers.
- **TWFL - Traveling Wave Fault Location:** uses synchronized wavefront arrival times at line terminals to estimate fault position in double-ended applications.

Integration and Technology

Engineering covers analog/digital inputs, CT/VT interfaces, trigger logic, time synchronization, record retrieval and communication links. Project-selected platforms may include Qualitrol IDM+ and TWS-FL, and AMETEK TR-3000 / DR-300. Functions follow the selected configuration.

Testing

FAT/SAT checks input mapping, trigger response, timestamp alignment, waveform capture and record retrieval. TWFL verification addresses sensors, line data and terminal coordination; location performance depends on equipment and installation.

Why JAL Energy

Local capability backed by disciplined project execution.



We combine Saudi engineering and manufacturing with JAL Group's industrial experience to deliver coordinated electrical solutions.

Our Strengths



Local engineering,
manufacturing and site support.



Integrated automation,
protection, monitoring and
metering expertise.



Equipment selection aligned
with approved customer
requirements.



Controlled documentation
and lifecycle support.

Our Clients





Quality & Safety Policy

Quality Policy

We at JAL Energy Ltd. are dedicated to a never ending commitment to excellence in the quality of our products and services for the satisfaction of our customers. And we are committed to:

- Consistently meet customer requirements on our product and services in terms of quality, on time delivery, reliability and performance.
- Strictly adhere and continuously improve the established management system and business process.

We pledge to meet this commitment through involvement and teamwork of entire management team and employees.

Safety Policy

Safety Policy Safety is an essential part of JAL Energy Policy. The provision of safe working conditions is of the utmost importance to JAL Energy. No activity on the project will ever be of such importance than safety. Never safety will be sacrificed for the sake of expediency. JAL Energy has established Safety Management System that provides a safe working environment and prevent the occurrence of accidents. Every Manager and Foreman will be responsible for the health and safety of its employees and for ensuring that the working conditions do not pose any risk to the health and safety of other persons, all employees are empowered according.

Local manufacturing and customer support
in the Kingdom.



Building no.3211, Al Dammam 367
Dammam 2nd Industrial City
Dammam 34334
Kingdom of Saudi Arabia

✉ info@jalenergy.com.sa

🌐 www.jalenergy.com.sa

☎ 013 8128888