Integrated Electrical Distribution & Process Automation Solutions for Iron & Steel Industry

Helping metal companies maximize productivity and optimize operational and maintenance cost
Steel is present everywhere in our daily lives, and the steel industry’s success in meeting the challenges of the 21st century will have a major impact on virtually every single person in the world.

> Be more competitive
> Reduce energy consumption
> Protect the environment
> Protect employees
Be more competitive

Steel manufacturing is an extremely challenging industry that constantly demands new solutions to enhance your competitive edge. It is strongly driven by the requirements of the automotive and construction industries, whose financial pressures further increase those of steel manufacturers. In addition, fluctuations in the iron ore market add economic pressure to optimise productivity and achieve the most cost-effective processing environment possible.

Increase production and yield

Our process solutions target the critical points:
> Process efficiency
> Measurements and control
> Tuning
> Heat efficiencies

Improve product quality and production management

Beyond process, Schneider Electric delivers tools for production intelligence:
> Production management and knowledge-based solutions
> Integration with quality control systems
> Raw material tracking
> Real-time and interactive access to information for planning, managing, and optimising plant operations

1.3 billion tonnes of steel was used in 2008

Tarun Khulbe
VP & Chief, Cold Rolling Division
Jindal Steel - India

“One of my dream projects has always been to bridge the information gap between our shop floor and top floor in terms of real-time process information. We wanted to equip our managers in such a way that they would have visibility and control of the processes across the entire plant at all times. Being the first complete plant-floor-to-ERP integration project in Indian industry, we needed a solution provider with the experience and technical background to integrate existing, highly diversified automation systems and provide a durable yet flexible solution. My dream came true when the project was successfully completed, and I congratulate Team Schneider and Team JSL for their organization, planning, efficient execution and unwavering efforts in implementing this project.”
Reduce energy consumption

Steel production is a very energy-intensive process and it requires large amounts of natural resources. In fact, energy costs account for up to 40% of the total cost in some countries. Therefore, optimizing process efficiency is one of the most effective ways to reduce energy consumption and lower costs, with the added benefit of reducing the steel industry’s impact on the environment.

Reduce energy-specific consumption

- Power, control and energy efficiency integrated actions
- Energy management systems
- High-efficiency drives and motor monitoring & control
- Process and production optimisation

up to 40% of the cost to produce steel is spent just on energy
Employees

Nothing is more important than the safety and health of your employees, and Schneider Electric can help you in your efforts to achieve your “zero accident” objective.

Protect people and assets

Safe equipment

- Reliable and high-availability systems
- Validated and tested solutions
- Access control and surveillance

The environment

The CO₂ emissions from the global steel industry have reached roughly two billion tonnes annually, accounting for approximately 5% of global man-made CO₂ emissions.

Control gas emissions

From production intelligence to process control, we bring solutions that deliver:

- Process optimisation that reduces emissions
- Emissions reporting, KPIs tracking and historian tools

The CO₂ emissions from the global steel industry have reached roughly two billion tonnes annually, accounting for approximately 5% of global man-made CO₂ emissions.

1.9 tons of CO₂ are produced for every ton of steel

8,028 reported lost-time injuries in the steel industry in 2006

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Added value at each process phase

> Be more competitive
> Reduce energy consumption
> Protect the environment
> Protect employees
Integrated Electrical Distribution, Process Automation, Instrumentation and Surveillance Offer

- HV/MV
- Power Transformer (Minera)
- MV main switchboard (Pix 36/HWX)
- MV drive systems
- Distribution Transformer (Trihal)
- MV/LV
- Medium-voltage drive (Altivar 1200)
- LV Switchboards (BLOKSET)
  - Circuitbreakers
  - Motor Control & Management
  - Drive systems
  - Capacitor Banks
  - UPS
- LV drive (Altivar process)
- CCTV
- LV drive (Altivar process)
- CCTV

EcoStruxure

PlantStruxure

MachineStruxure

Remote Meter

Business Server

Field Server

Alarm Manager

IT Security

by Schneider Electric

PELCO

by Schneider Electric

Foxboro

by Schneider Electric
Comprehensive product portfolio

Simple, Transparent, Sustainable and Upgradable
Project and maintenance services across value chain
Standard open and interoperable communications

Supply Chain Planning Optimisation
Advanced Planning, Scheduling, Simulation and Optimisation

- Business Planning and Forecasting
- Capacity Planning
- Process Beneficiation Planning
- Work Planning and Scheduling
- Maintenance Planning

- Mine Plan
- Load & Haul
- EDM & Blend
- Processing
- Commission

- Blend & Store
- Rail & Freight
- Refining
- Concentration
- Extraction

- Pan, Rail and Shipping Planning
- Load & Haul
- Material Logistics Planning
- Accommodation Planning
- Energy Planning
- Waste Planning

MES - Ampla
Historian, Unified Operations and Operator Training

- Inventory Control
- Daily Accounting
- Asset Optimisation
- Hatch & Ship Loading Plan Conformance
- Vessel & Berth Plan Conformance

- Shift Logs & Actions Register
- Consumables & Utilities
- Business Planning and Forecasting
- Pan, Rail and Shipping Planning

Historian, Unified Operations and Operator Training

Process Control
Quantum and MS40 PLC’s
Advanced Process Control

- SCADA / DCS
  CitectSCADA, Powerlogic, SCADA, InTouch, Foxboro, Triconex Safety + HMI

- Energy Management
  Demand management, Powerlogic SCADA Energy events

- Security
  Security plan and policy, Network separation, perimeter protection

- Communications
  Conexum switches, WiFi, Ring networks

Critical Power
Engineered UPS Solutions, Costing solutions, 3 & 1 phased UPS’s

- Data Center
  Prefabricated factory assembled and engineered data centre

- Security
  CCTV, Access control, Workforce management

Power Distribution
MV/LV Transformers, MV/LV Switchgear, MV Primary Cubicles, Capacitors, Prefabricated factory assembled and engineered substations - e House

- Energy Management
  Active front and regeneration

- Electrical Protection
  Sepam, Masterpact, Compact NSX

- Load cont / Protection
  Teys - U, Teys - T

- Intelligent Power and Motor Control Centre (iPMCC)

- Energy Measurement
  PM70, PH10, PH500

- VSD and Soft Starters
  ATV Range, ATV Range, Engineered Drives

Simple, Transparent, Sustainable and Upgradable
Project and maintenance services across value chain
Standard open and interoperable communications

MV Main Switch Board - Air Insulated Switchgear PIX-36

Whether you generate, distribute or use electric power in today’s economic climate, you need a cost effective solution which is reliable, safe and easy to use. This version has been optimized for the primary distribution range up to 36 kV/31.5 kA/2500A.

PIX-36 is equipped with Vacuum Circuit Breaker The fully metal clad design makes this product robust for all applications. It offers space saving and complies strictly with the latest IEC standards. Safety is the number one priority.

LSC2B, Best Service Continuity Class
Using four distinct compartments (circuit breaker, current transformers, busbar and low voltage equipment) and the use of earthed automatic shutter, PIX-36 is compliant with loss of service continuity class LSC 2B. This provides complete safety for the operator in all operating conditions.

Ergonomic
PIX - 36 is characterized by a reduced width which offers savings on space and civil costs. Even with its reduced size of 1,000 mm, it offers spacious compartments enhanced by its withdrawable design and allows easy access for insulation and maintenance work.

This new truck-mounted breaker design eliminates the need for a separate handling truck, which enhances maneuverability at this voltage rating.

Highest Internal Arc Classification
A unique design for operator safety, the front hinged door is located on four flanges, this contributes to the highest level of IAC certification - IAC AFRL 3.150.1 sec. according to the latest IEC 62271 - 200.

Customer benefits
- Internal Arc tested upto 31.5 kA for AFLR - PM with loss of service continuity-LSC (2B)
- All operations with doors closed, including racking in/out of breaker.
- Use of earthed automatic shutters ensuring operator safety.
- Designed for Classes S1, E2, M2, C2
- Fully type test as per IEC standards.
- Interrupters completely insensitive to adverse environmental conditions, achieved by the latest concept of solid encapsulation.
- With a compact width of 1,000 mm, it offers savings on space & civil costs.
- All necessary positive interlocks installed, as per IEC guidelines.
HV/MV - Minera MP oil immersed medium power transformer

Minera MP oil-immersed medium voltage power transformer is dedicated to all applications up to 100 MVA and is designed to meet your needs.

High quality level for more reliability

Magnetic core
The transformer’s magnetic core is manufactured from a high grade, cold-rolled, grain-oriented silicon steel. The lamination stacking is step lap type. The magnetic core is generally a multi-layer circular cross section and the slotting and cutting of the magnetic core is made by automated machines. In order to reduce transformer sound level to a minimum, the magnetic core and its framework are carefully sized to minimize the vibrations and, in particular, magnetostriction effects, which constitute the main sources of sound in medium power transformers. Moreover, in order to reduce the no-load losses and/or the no-load transformer current, the quality of the magnetic steel and the induction, together with the design of the magnetic core, are carefully chosen to meet the requirements.

Our company follows a policy of continuous improvement taking into account the latest worldwide developments. This ensures that our transformers are state-of-the-art and fully compliant with the modern world’s highest requirements: fast delivery time, improved quality and recycling capacities, reduced size and, on request, very low noise and losses values.

Tank construction
The main tank construction type is panel radiator type. The corrugated wall tank is also available in some ranges. Radiators are welded or removable. Tank welding is done by qualified welders. To validate the oil-tightness after complete assembly, the tank is leak tested under gas or liquid overpressure.

Low voltage windings
The low voltage winding material is copper or Aluminium according to the rated power. The shape of the conductor is rectangular or foil type. To obtain a controlled temperature gradient, cooling ducts are added in the coil. The low voltage winding is built around the magnetic core. An insulating barrier is wound or installed around the low voltage coil in order to provide an electrical separation between LV and HV coils.

Surface protection
One of our major quality commitment is to provide high-quality surface protection. The coating (painting) type is chosen in accordance with the environmental conditions considering the degree of pollution, humidity, etc. Zinc Spray / Hot dip galvanized Tank, HV/LV covers and conservator can also be provided.

High voltage winding
The high voltage winding material is copper or Aluminium according to the rated power. To obtain a controlled temperature gradient, the cooling ducts are added in the coil. High voltage coils are in long layer or disc type. Due to recent developments in the winding process, interlayer insulation and wire insulation have allowed the automation of the winding process.

Tappings
The tap changers allow voltage adjustment for a variation of the supply network voltages on the primary side of the transformer or for increasing or decreasing the secondary voltage. Tappings are provided on the primary winding connected to an off-circuit or on-load tap changer. The operating handle for hand operated tap changer is mounted outside. In general, tapping range for off-load tap changer is 3, 5 or 7 position and for on-load tap changer it is from 7 to 27 positions. We provide tap position & range as per customer requirements.

Customer benefits
> Extremely versatile
> Robust construction
> High quality and reliability
> Continuous improvement
> Tailor made
> Highly economical thanks to reduced operating and maintenance costs
> Strong after sales support
Altivar 1200
Medium-voltage variable speed drive, 315 to 16,200 kVA
Fan, pump, compressor, conveyor applications

Distribution Transformer - Trihal
The new worldwide quality reference

Altivar Process for MMM
Altivar Process offers dedicated features for mining, minerals and metals processes.

Predictive maintenance
Maintain machinery and prevent workers injuries or unplanned downtimes. Accurate diagnostics, remote control and remote services capabilities make your process safer and efficient to realize maximum payback for the long term.

Real-time data acquisition
Diagnose most issues before they turn into process upsets or before sending operators into the field and identify necessary adjustments to ensure sustainable efficiency of your process.

Native Ethernet-based communication
Optimizes visibility of system operations for improved reliability, lower maintenance and energy savings. Ensures seamless integration in architectures for improved process and energy management.

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Diagnose most issues before they turn into process upsets or before sending operators into the field and identify necessary adjustments to ensure sustainable efficiency of your process.

Applications
Coal Mine
- Belt conveyor (single drive, multiple drives)
- Mine ventilator
Power Plant
- Boiler induced draught fan
- Boiler forced draught fan
- Primary fan
- Condensate pump
- Sewage pump etc.
Metallurgy
- Kiln head exhaust fan
- Blast furnace blower
- Primary dedusting fan
- Dry quenching circulating fan
- Main exhaust fan for sintering
- High-pressure phosphorous removal pump

Faithful to the vocation of feeling firsts, our full range Trihal dry type cast resin transformer is now gratified with the highest tests performances level:
- C3*
- E3
- F1
- Partial discharges ≤ 5pC

Prove of its high grade design and manufacture quality, it will perfectly answer to a critical need for power companies to improve personnel safety and decrease the potential for loss of service to improve personnel safety.

Customer benefits
C3*
- Resistance to thermal shock
- Highest performance under severe ambient conditions
- Superior behaviour on load changes
- Extended service life

E3
- Insensitive to total condensation or/and heavy pollution
- Suitable to installation in harsh environment (e.g Wind turbine)

F1
- Full safety for all type of buildings
- Suitable to fire hazard area
- Guarantee your safety

≤ 5 pC
- Improve transformers aging
- Extended service life
BLOKSET, high safety and availability switchboard up to 6300 A

A wide range of solutions:
Electrical distribution / PCC
> For high power incomers or feeders up to 6300 A,
> Withdrawable solution for high availability and safety applications
> Fixed solutions for economical applications
> Power factor correction

Motor Control Center / MCC
> Fixed-typed motor control center for economical solution
> Withdrawable motor control center for high availability and safety applications,
> Solution with motor controllers, soft starters and drives
> Protection levels: IP20, IP31, IP42, IP54

General data
Rated voltage (Ue) : 690 V AC
Main busbar rating : Up to 6300 Amp
Distribution busbar rating : Up to 3200 A
Rated short-time current (lcw) : Up to 85/100 kA rms 1s
(rated peak current lpk 187/220 kA)
Rated conditional short-circuit current (lcc) : Up to 85/100 kA 1s
Internal arcs : 85 kA 0.4s as per IEC 61641
Earthling system : TT/IT/TNS-TNC
Form : 1/2b/3b/4/4b
Withdrawability : FFF/WWW
Standard : IEC61439-1/2
Seismic Zone : UBC/CBC (Uniform/California Building Code), Zone 4, floor & roof levels
Installation : indoor environment (EMC) type 2
Communication buses : Ethernet, Modbus SL, Profibus DP, DeviceNet, CanOpen

Integrated process control

Ironmaking plants require robust, future-proof architectures, and distributed architectures that use Ethernet TCP/IP as the communications backbone can provide the greatest openness and transparency at all levels of the plant.

Robust
Fully redundant systems ensure the continuous operation of your installations, from control and supervisory systems down to the I/O and field device level.

Future proof
Schneider Electric adopts open standards for connectivity to allow your plant to keep up with evolutions in technology. Our hardware and software is developed to ensure the utmost compatibility with installed legacy systems, ensuring that you have a clear path for forward migration.

> A typical Blast furnace architecture based on fully redundant systems
PlantStruxure process automation system

Ironmaking plants get an extremely large amount of data that is difficult to synthesize into a coherent picture for decision-making purposes. But when properly integrated and analysed together, this data can deliver powerful information to drive greater productivity, better utilisation of energy resources, and increased profitability.

PlantStruxure™ is a collaborative system that lets you meet your automation needs and satisfy the growing need for energy management. In a single environment, energy and process data can be measured and analysed to yield a fully optimised plant.

Engineering & Operation

Flexible system engineering tools support your efforts to be more efficient. They help you accelerate control system configuration, reduce engineering time and minimise project risk.

Think “process”

Our advanced system engineering and application generation software integrates numerous controllers and supervisory systems into a common database. It structures the entire application according to the process functional diagram and delivers a true distributed control system environment that is flexible and open.

Standardise, reuse and extend

The system delivers an object-based approach to configuration and includes feature-rich application libraries specifically focused on the process industry. Engineers can use standard libraries “as is”, modify them, or create new ones to meet specific requirements.

Maintenance and asset management

Asset management tools provide a single environment for field device configuration, commissioning, and ongoing management. Our system supports FDT/DTM in order to help you minimise maintenance and preserve your investment in existing field devices.
Process controllers

Regulatory and advanced process control
Each controller performs multiple tasks, giving you the fastest and most efficient processing of your control algorithms, communications and I/O processing.

Having all the IEC control languages, it allows the system to be flexible according to the user profile: Process engineers, electricians, maintenance people. Also, the application can be organised using mixed languages according to each sub-system requirement (sequencing, process, etc.).

Connectivity
Open to dedicated systems
> Expert systems
> Moisture analysers
> Gas analysers

Connectivity to major instrumentation fieldbuses
> Hart
> Foundation Fieldbus
> Profibus PA
> Modbus
…with transparency to higher levels through Ethernet

Off-line simulation
The simulation function built into the system enables engineers to replicate the functionality of an application in a PC environment. This helps identify errors in the application and reduces testing and commissioning time.

Prebuilt object libraries provide all of the functionality needed for continuous or regulatory control. Additional libraries are available for applications that need advanced process control, including:
> Fuzzy logic
> Multivariable predictive control
> Statistical process control

Operation and supervision

Total control of your production
Supervisory systems offer complete visualisation and operation of your processes. The operator has a user-friendly graphical view from all systems and variables, allowing them to make decisions and take action in real-time.

Integration with programming software
Integrated database eliminates duplicated work.

Performance
Multiple servers (clustering technology) assure high performance data updating.

Reliability
Ability to work with multiple redundant servers.

Process analysis tool
Powerful tool that integrate alarm and trend screens to analyse process disturbances.

Scalability
Easy to expand or modify the system as your challenges change.

Display client
Display client

File server (primary)
File server (standby)
Alarms server
Alarm server
Trend server
Trend server
Reports server
Reports server
Web server (primary)
Web server (standby)

> Clustering ensures high performance, reliability, and easy scalability
High availability

Ironmaking processes cannot simply be stopped and started, and unplanned stoppages represent an enormous financial risk. So our process control systems provide maximum availability to keep your production running 24x7.

Automatic and bumpless

The hot-standby capability of our controllers, data servers and networks results in an automatic and bumpless switch to the standby system in the event of a failure. This switch is transparent to the operator and the process continues as normal. Redundancy features are integrated into an alarm system, so that operators are automatically notified in case of a failure.

Online changes

Online controller change functionality helps minimize downtime and lets you update your application simply and securely without interrupting your process.

With a redundant data server configuration you have the option to make changes in the system configuration and then roll-back these changes if they do not operate as expected, all without disturbing production.

In order to ensure easy maintenance, the system controllers also feature hot swap capability for processors, cables, input/output modules and power supplies.

Motor management and control

Our iPMCC (intelligent Power Motor Control Center) solutions for continuous and critical processes were developed through our specific expertise in energy management and industrial process automation. As the cornerstone of energy efficiency in your plant, they incorporate a wide range of functions to supply power, start up, control, as well as protection and monitoring of your low voltage network electric motors.

Information for engineering

Installations can be constantly improved thanks to rich and detailed information provided by your iPMCC.

Remote control and monitoring of your installation

A continuous, real-time communication interface with your control and monitoring systems for energy management and process control.

Information for local operating, maintaining and upgrading your installation

Information on electrical distribution, motor operation and power consumption can be accessed.

> Part of a coking plant architecture showing the high-availability control system
Production management tools

Schneider Electric production management tools help you obtain a more visible and traceable process with comprehensive real-time information, from raw materials to cold rolling. They fully integrate process control, energy efficiency and ERP systems to enable faster production response and more accurate decision making.

User requirements
Scheduling and execution
- WIP Tracking and Genealogy
- Equipment performance
  - Downtime
  - Equipment KPI
  - Alarm and message
- Production Management
  - Segments operation
  - Traceability
  - Process Overview
  - Production Events
- KPI Management
  - Dashboard
  - Reporting

Process Energy Optimisation

Make energy a variable, manageable cost
Our solutions exceed traditional boundaries of energy management by integrating business and energy strategies across your entire enterprise. Stakeholders from management to operations will be empowered by actionable energy intelligence to give true accountability to energy cost centers, reveal energy efficiency opportunities, isolate problems and drive cost and risk reduction strategies.

Energy as a process variable
We integrate control systems, energy efficiency tools and production management as a single strategy - Delivering a true Production Energy Optimization.

Emissions Reporting
Summarizes corporate emissions performance by aggregating data from all business units. Tracks how well your organization’s emission reductions projects are performing by comparing monthly CO₂ output to targets and base year totals, with breakdowns of CO₂ output by commodity (fuel type).
Adheres to the framework of the International GHG Protocol, accurately monitoring, modeling and reporting on emissions from all sources.

Connect to plant and business systems
Our Manufacturing Execution System connects to multiple plant and business systems, collecting the relevant data and presenting it as easy-to-understand, real-time intelligence for productivity analysis, data mining, querying and reporting.
It is also used to identify bottlenecks, analyze causes of production downtime, calculate key performance indicators, report accurate views of production inputs and outputs, analyze work-in-process, track real costs of production, and many, more critical production issues.

> CO₂ emission distribution form different procedures in the traditional BF-BOF process

12% Sinter plants
8% Steel plants
2% Coking plants
2% Others
76% Blast furnaces
Protecting people and monitoring your equipment and installations

Pelco (by Schneider Electric) produces the most respected solutions for imaging systems, including:
- discreet camera domes and enclosures
- explosion-proof and day/night camera systems
- electronic access control
- video matrix systems
- digital video recorders
- IP solutions
- fiber optic transmission systems for video/data.

Video analytics

Video analytics is the extraction of meaningful and relevant information from digital video. The goal is the successful understanding of a scene by a device in real time. Pelco Video Analytics is a powerful and versatile imaging analysis system which delivers the power of intelligent video where needed. Video analytics tools can be used for people and asset protection and customized for specific process challenges:
- detect removed items
- find irregularities in movement
- discover zone violations
- identify objects
- measure the number of designated 'target objects' within a pre-defined zone.

Thermal imaging

Thermal imaging combines the power of an advanced thermal imaging device with the precision of sophisticated positioning system software to create a completely integrated, single addressable thermal imaging system.

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Services

Project management

Looking for commitment on our part for your modernisation projects and new plants? You can count on the experience and involvement of our teams. Schneider Electric has global and local project teams to manage your automation, energy management and electrical distribution projects. Our tools, standards and proven architectures allow us to apply these best practices to your project with the confidence, safety and quality you want.

Consultation

Our experts and consultants can help you analyse existing conditions and propose, define and deploy specific solutions to meet your objectives.

Pre-project

Our consultants can help you to define the best process control architectures, intelligent motor control center solutions, energy management networks, and electrical distribution systems according to your requirements and budget.

Operations

We can help you to get more from your plant. For example, as an energy efficiency specialist, we can provide special consultation services and audits to understand, evaluate and propose solutions and strategies to improve the energy efficiency of your installation, saving money, and reducing downtime.

Maintenance contracts

For long-term reliability and high performance of your installation, we can jointly develop a program of customised services to meet your needs.
- telephone support for priority access to our experts
- web access for the latest software revisions
- priority access to genuine replacement parts
- assurance of on-site assistance within a guaranteed time.

We help you anticipate technical risks and perform essential modernisations by planning ahead of equipment obsolescence. You avoid production shutdowns. You control maintenance costs by optimised replacement parts stock management.

Partnership program

For specialty process know-how, Schneider Electric has a strong worldwide network that comprises the major EPCs, OEMs and System integrators in the steel processing world. Within this collaboration environment you have the access to a strong combination between the best process providers and Schneider Electric, delivering a powerful and complete solution.
Effective energy management has a life cycle that begins and ends with strategy. Schneider Electric offers a comprehensive approach that answers key questions at each stage of the process. Our extensive experience proves that addressing these questions leads to maximum return on your energy investment.

Whether you have a need in one area or you’re ready to address your entire energy management life cycle, we will guide you to cost-effective solutions that help you manage risk and capture every opportunity.

**Answers that transform energy into an asset**

Schneider Electric energy and sustainability services support you at every stage of the energy management life cycle. Comprehensive energy management is a tremendous asset, allowing you to redirect your resources into your core business.

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**What is my strategy?**

Make a comprehensive plan that fits your goals and chart your progress.

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**How do I buy?**

Negotiate the best terms with every supplier and minimize risk.

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**How do I control?**

Monitor your operations to ensure reliability, uptime, power quality, and billing accuracy.

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**How do I optimize?**

Execute targeted efficiency projects with ROI that can be proven.

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**How am I performing?**

Use robust support services and reporting software to ensure optimum performance.
You need insight to plan, to respond to changing power conditions that impact your operations, and to make informed decisions in real time. Our power management software provides this insight with extensive analysis and reporting tools, as well as intuitive visualisation and control interfaces that turn your power data into meaningful, actionable information.

**Real-time and historical power quality analyses**
Detect, diagnose, evaluate, and isolate power quality disturbances. Trend measured parameters to identify potential disturbance patterns. Display millisecond-accurate alarms and trends for sequence of events and root cause analysis. Amalgamate trend and alarm data for sophisticated disturbance views and analysis.

**Intuitive visualisation and reporting tools**
Display any measurement from your electrical distribution network; integrate live Internet data streams into smart dashboards. Access network diagrams, waveforms, and real-time or historical trend graphs from the convenience of any Web browser. Use predefined or custom device comparison tables for an at-a-glance status of the assets in your network. Distribute preconfigured or fully customised reports manually, by schedule, or by alarm/event trigger.

**Real-time energy consumption monitoring**
Track and trend any parameter to reveal demand peaks and systemwide energy costs. Identify patterns in operational usage trends. Disseminate information to a larger audience and educate stakeholders to help drive changes in behaviour. Optimise network capacity and avoid overbuilding.

**Seamless hardware integration and system interoperability**
Native support with a vast selection of Schneider Electric products as well as third-party devices enhances overall capability. Open standards-based interoperability lets you cater to other departments and share data with third-party SCADA, automation, building management, and accounting systems for a comprehensive view.

**Dynamic control interfaces**
Control of devices, objects, and electrical distribution points in real time with dynamic single-line diagrams. Use point-and-click navigation to reveal deeper layers of detail in the electrical distribution system.

**Robust, flexible platform architectures**
Designed for step-by-step investment, our software delivers exceptional scalability to grow with your changing business requirements, thereby driving down the total cost of ownership. Choose from pre-engineered or customised options. Full redundancy for communications, network servers, alarming, trending, and data synchronisation is also possible.

Get the functionality you need to be successful. Our power management software is available in a variety of specialised editions to address the unique needs of your business. Specialised application modules and tailored, tested, and validated architectures match your terminology, your work flow, and your equipment. So it all operates seamlessly in your unique environment.