

Transformer station with integrated IoT connectivity



SIEMENS

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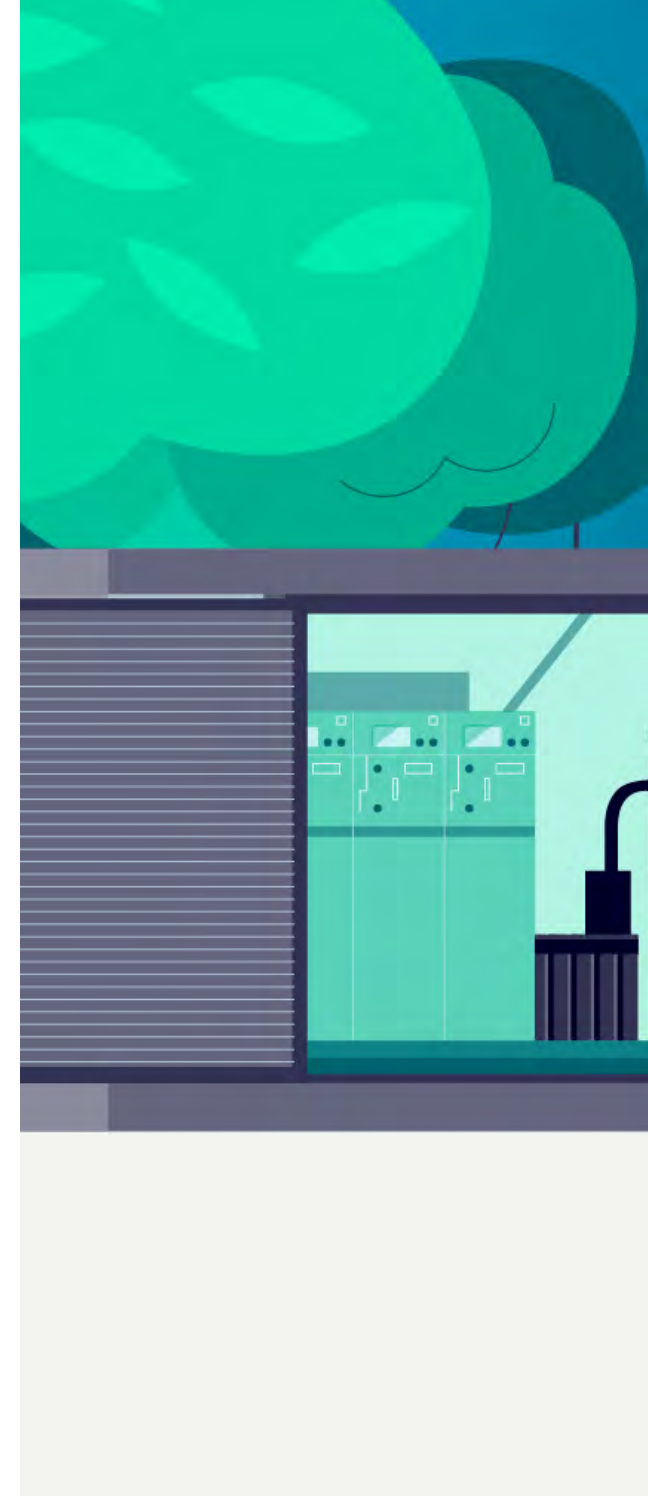
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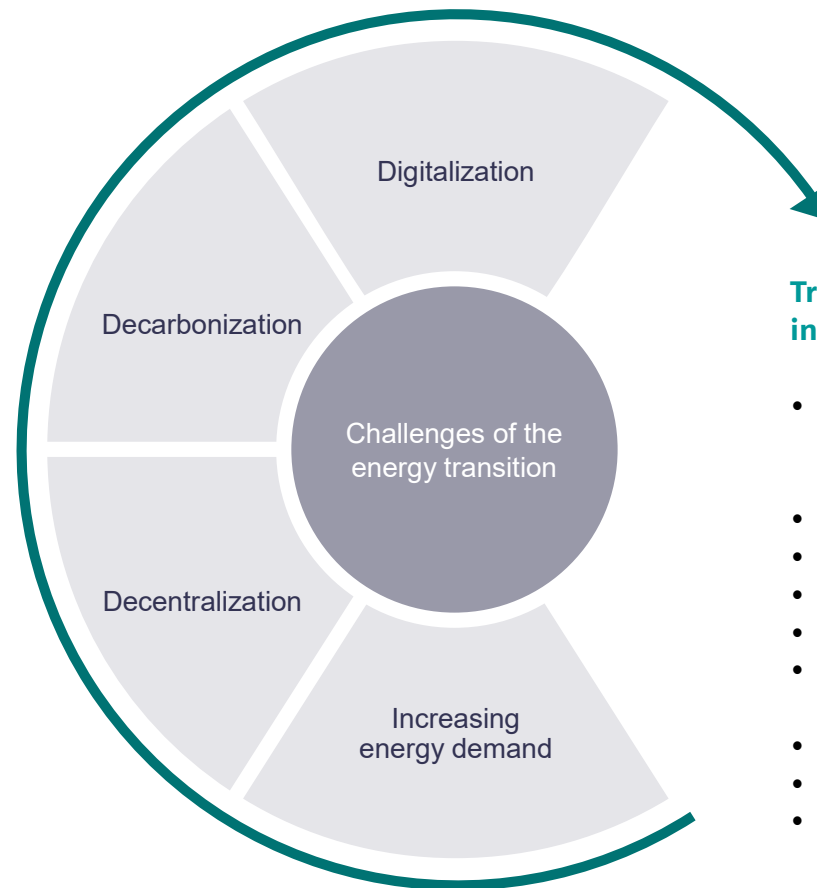


Situation of today's energy supply

Medium- and low-voltage power grids must adapt to the increasing integration of decentralized feed-ins renewable energies as well as through the emerging electromobility in individual passenger transport.

While the increased connection capacity needed can also be provided through grid expansion, effects due to changing energy flow direction, load fluctuations, and voltage band compliance can only be managed with intelligent solutions.

The transformer station with integrated IoT connectivity is the Siemens solution to equip your energy supply for the challenges of the energy transition. Digitalization, decarbonization, decentralization, and the increasing energy demand are the focus.



Transformer station with integrated IoT connectivity

- Future-proof functionality, consistently optimized for eco-friendliness and space-saving
- High efficiency and low operating costs
- Modularity and flexibility of components
- Effective grid and asset management
- Monitoring and ensuring energy quality
- Eco-efficient ring main unit and distribution network transformer
- IoT connectivity
- Standardized IEC communication protocols
- Sensors and apps for condition monitoring and distribution network automation
- Innovative low-voltage components

Overview of the components

Medium-voltage

By using intelligent fault indicators and sensors, medium-voltage switchgear of the 8DJH family become data suppliers, ensuring that the status of the distribution network is transparent at all times.

IoT

Digitalization enables cloud-based analysis of assets, power quality issues, network anomalies, and outages, as well as condition monitoring of equipment – from anywhere and at any time. Moreover, if necessary, monitoring is expanded through bidirectional communication by the controlling.

Transformer

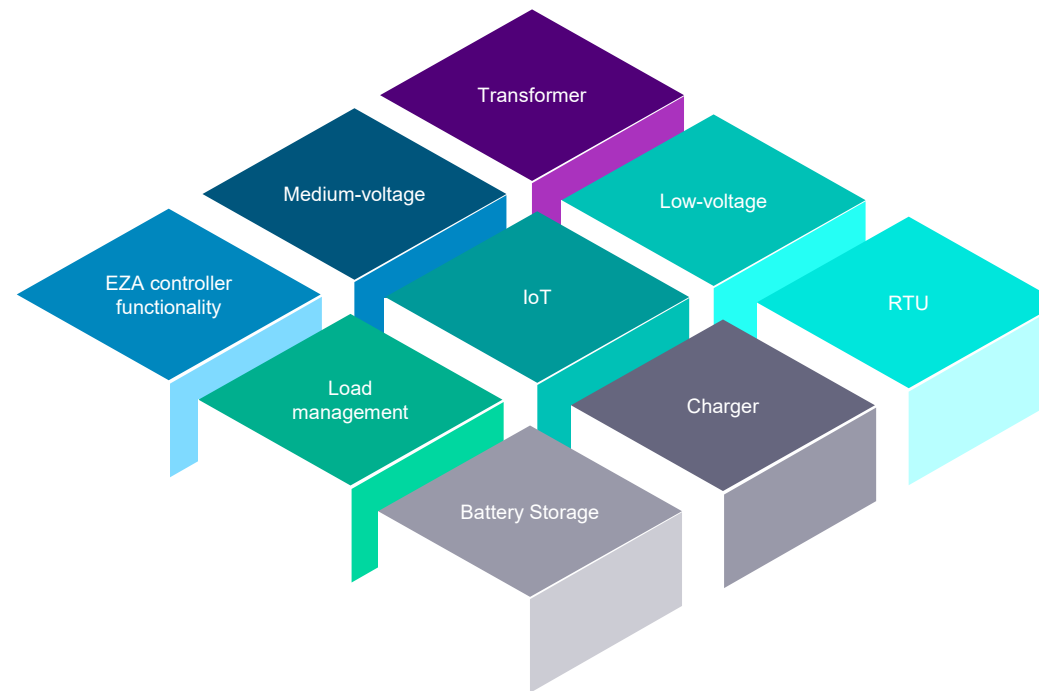
Monitor the status of your digital transformer and optimize the operational workflow.

Microgrid Controller (MGC/PPC) with EZA Controller Functionality

The SICAM application EZA Controller, certified according to VDE-AR-N 4110, is tasked with detecting the difference between target and actual values of various control variables at the grid connection point, such as reactive power, and determining the necessary adjustment of the corresponding control variables for forwarding to the generation units or components.

Load management

Dynamic load management adjusts the power of controllable consumers based on external specifications, such as those from network operators. In addition to local load management, integration into a visualization software (SaaS) can be implemented.



Low-voltage

In addition to the low-voltage components of protection technology, energy monitoring also plays a significant role. It provides more transparency over all energy data for standards-compliant monitoring, evaluation and control.

RTU

The economic and versatile solution for monitoring, controlling, and automating the complete transformer station.

Energy distribution in medium-voltage

A comprehensive portfolio for medium-voltage power distribution enables the implementation of smart grids for economic and responsible use of electrical energy. An integrated medium-voltage power distribution is the basis for green cities, energy-efficient infrastructures, buildings and industrial applications, as well as the highest supply reliability.



Reliable

For over 30 years, Siemens' gas-insulated medium-voltage switchgear has been making a crucial contribution to the sustainable security of energy supply. In this context, the switchgear of the 8DJH family forms the basis for applications in transformer stations. From pure block installations to modular single fields, the 8DJH family leaves little to be desired in realizing specific switchgear configurations.



Safe

The switchgear of the 8DJH family is environmentally independent. Hermetically sealed stainless steel enclosures make the high-voltage parts of the primary circuit of the 8DJH switchgear insensitive to certain aggressive environmental conditions, such as salty air, humidity, dust, and condensation. All units are arc fault tested and offer high operational and personnel safety.



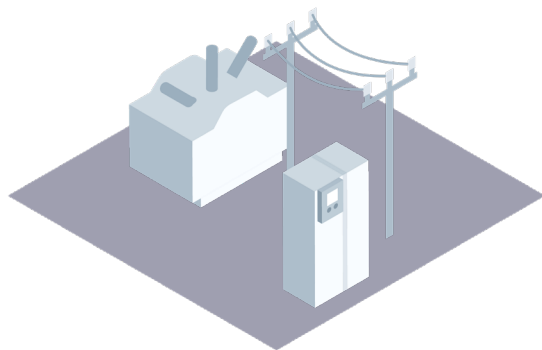
Economical

Everywhere space, compactness, longevity, and maintenance-free operation are of crucial importance, Siemens' gas-insulated switchgear provides the right technology.



Intelligent

The switchgear meets all the requirements for integration into a smart grid infrastructure. They can be equipped with motor drives, sensors for current and voltage measurement, voltage testing and measuring devices, short-circuit indicators, such as the SICAM FCM, and other detection systems. RTUs (Remote Terminal Units) can optionally be integrated directly into the switchgear panels, into low-voltage cabinets on the panel, or via a plug connection into separate low-voltage cabinets.



Medium-voltage
Gas-insulated switchgear type 8DJH

**Compact, maintenance-free and
climate-independent**

For the distribution of electrical energy, Siemens offers various gas-insulated switchgear types, which can be used in transformer and distribution systems of power supply companies, but also in industrial medium-voltage systems, e.g. mining industry, steel works or paper industry. Siemens gas-insulated switchgear is also the first choice for special applications such as wind parks, offshore platforms and ships.

In all these applications, gas-insulated switchgear technology from Siemens provides exceptional advantages in respect of climatic independence, personal safety and maintenance-free design. For the customer, this offers the high benefit of maximum supply reliability in his network, both as a provider of customers and as an energy supplier for production processes.



8DJH

- Up to 17.5 kV, 25 kA, 630 A busbar, 630 A feeder
- Up to 24 kV, 20 kA, 630 A busbar, 630 A feeder
- Metal-enclosed
- Type-tested switchgear according to IEC 62271-200

Dimensions RRT	mm
Width	1050
Depth	775
Height	1040 - 1700

[➤ siemens.com/8DJH](https://www.siemens.com/8DJH)



8DJH 36

- Up to 36 kV, 25 kA, 630 A busbar, 630 A feeder
- Metal-enclosed
- Type-tested switchgear according to IEC 62271-200

Dimensions RRT	mm
Width	1360
Depth	920
Height	1600

[➤ siemens.com/8DJH36](https://www.siemens.com/8DJH36)

Medium-voltage Gas-insulated switchgear type 8DJH - blue GIS

100% sustainable performance!

A sustainable future requires innovative, environmentally friendly, and digital solutions for medium voltage supply. All the well-known GIS benefits such as safety for individuals, maintenance-free operation, and compact design are now available without fluorine gas. The combination of Clean Air as an insulating medium and the proven vacuum switching technology paves the way for blue GIS products into a more sustainable future.



Clean Air

The insulating medium is based on the components of pure air



Vacuum interrupter

The switching principle is based on proven vacuum technology



Gas-insulated Switchgear

Customers will continue to benefit from all the advantages of gas-insulated switchgear in the future



8DJH 12

- Ring Main Unit up to 12 kV, 21 kA and 630 A
- Hermetically sealed
- Type-tested switchgear according to IEC 62271-200

Clean Air

- F-gas-free
- Global Warming Potential < 1
- Non-toxic and non-flammable
- Highly stable and suitable for all operating temperatures

Dimensions RRL	mm
Width	1050
Depth	775
Height	1400

[➔ siemens.com/bluegis](https://www.siemens.com/bluegis)



8DJH 24

- Ring Main Unit up to 24 kV, 21 kA and 630 A
- Hermetically sealed
- Type-tested switchgear according to IEC 62271-200

Clean Air

- F-gas-free
- Global Warming Potential < 1
- Non-toxic and non-flammable
- Highly stable and suitable for all operating temperatures

Dimensions RRT	mm
Width	1050
Depth	775
Height	1400

[➔ siemens.com/8DJH24](https://www.siemens.com/8DJH24)

SICAM FCM

Short-circuit indicator for cable and low-voltage power meter

The SICAM FCM (Feeder Condition Monitor) is a directional fault and ground fault indicator that uses protective algorithms and low-signal transformer technology according to IEC 60044-8 / IEC 61869-10 or works with conventional 1 A/5 A measurement transformers.

Alternatively, the SICAM FCM can also be connected using a capacitive voltage tap, allowing for cost-effective directional fault detection in the cable network. Additionally, the SICAM FCM offers the ability to provide real-time measurement values through its integrated Modbus RTU interface, ensuring precise assessment of the distribution network.

The SICAM FCM (Feeder Condition Monitor) also stands out as a cost-effective power meter in the low-voltage network. With its compact height, it is optimized for installation in low-voltage switchgear panels.



SICAM FCM – Benefits

- Cost savings due to precise and fast localization
- Selective fault information with directional indication as a basis for „self-healing“ applications
- Resupply times in a minute or second range (depending on primary equipment) allow minimum power-system outages and minimum ultimate consumer payment losses
- Up-to-date measured values for operation and planning support the focused use of investment funds in power-system planning and expansion
- High-quality measurement technology with a high measuring accuracy in connection with low-power current transformers – no calibration or adaptation to primary values required
- Use of inexpensive wide-range low-power current transformers
- Easy integration into the Multipurpose Automation Box

Dimensions	mm
Width	96
Depth	109.5
Height	48

➔ [siemens.com/sicam-fcm](https://www.siemens.com/sicam-fcm)

SICAM FCM plus with SIBushing

The SICAM FCM plus is a fault passage indicator featuring directional sensing and protective algorithms. Its measurement technology is based on low signal converter technology, in compliance with IEC 60044-8 / IEC 61869-10 standards.

It enhances transparency in the medium-voltage distribution network by transmitting current, voltage, and power measurement data for monitoring to the control system. Within the control system, it is then possible to observe and record load flow and voltage drops in the distribution network.

Furthermore, the SICAM FCM plus detects ground and short-circuits. With this information, the power network operator can swiftly identify the faulty network section in the event of an incident and precisely isolate it through suitable switching operations within the network. This allows for the prompt re-supply of customers, thereby minimizing network downtime.

The SIBushing is a component integrated with sensors for measuring current, voltage, and temperature.

Together, SIBushing and SICAM FCM plus make the perfect team for the innovative transformer station of the future.



SICAM FCM plus – Benefits

- Simple installation and pluggable interface via RJ45 connector
- Lower installation costs, faster troubleshooting, and easy maintenance (no buffer battery required)
- Suitable for isolated, compensated, and grounded networks
- Rapid fault localization
- Current measurement data for operational management
- Remote configuration via SICAM A80xx RTU and Modbus
- Minimum 8-hour fault status display in the absence of auxiliary power supply
- Up to 50 events can be stored
- Enhanced measurement accuracy
- Easy integration into the MAB

SIBushing – Benefits

- Cable connection of type C according to EN 50181 with integrated sensors
- Rogowski coil for current measurement according to IEC 61869-10, providing 22.5 mV at 50 A, 50 Hz
- Capacitive voltage divider for voltage measurement according to IEC 61869-11, with a conversion ratio of 10,000/1
- Measurement accuracy for current and voltage measurements is Class 0.5
- PT100 temperature sensor capable of monitoring the temperature at the cable connection
- The field probe maintains accuracy within a range of -5° C to +40° C without compensation
- With temperature compensation, the operational temperature range can be extended from -40 °C to +115 °C

➔ [siemens.com/sicam-fcmplus](https://www.siemens.com/sicam-fcmplus)

SIPROTEC 5

Universal protection devices 7SX82 and 7SY82

Universal protection devices cover a wide range of applications and offer many advantages in terms of both investment and operation. With universal protection devices, the equation is: Hardware + Functions.

- Optimization of investment and operating costs
- Easy adjustment to changed network conditions
- Full flexibility up to just before commissioning
- Significant reduction in device variance
- Reduced number of spare parts
- Additional functionality can be ordered, paid for, and used as needed – within minutes
- Easy functional expansion when network conditions or applications change after installation
- Universal protection can replace type-specific SIPROTEC devices



7SX82 – Benefits

- Always the right device tailored for the specific needs
- Protection and control for branches, lines, motors, and capacitor banks
- Virtual testing with SIPROTEC DigitalTwin
- IoT connectivity for easy access to your device data and associated fast response times
- Two pluggable communication interfaces
- Quick migration of existing application templates and parameter settings (e.g., 7SA82)



7SY82 – Benefits

- 8 patented universal LPIT (Low Power Instrument Transformer) inputs that support common sensor types according to IEC 61869
- Configuration of inputs is done within the software
- Large operating range for primary rated currents with just one type of sensor
- RJ45 sensor connection - quick and secure
- Proven advantages of the SIPROTEC 5 platform

➔ Universal protection relays

➔ [siemens.com/7SX82](https://www.siemens.com/7SX82)

➔ [siemens.com/7SY82](https://www.siemens.com/7SY82)

Low-voltage Distribution board SIVACON S1

SIVACON S1 has been conceived for installation in concrete compact substations without control aisle. If enclosure parts are provided, it can optionally be installed in a transformer substation with control aisle. Scalable in power and size, and thanks to its modular design, it offers ideal preconditions for an efficient setup of compact substations for a wide range of applications.

It can be integrated in both TN-C and TN-C-S systems and provides 3- and 4-pole switching technology.

As a distribution board, SIVACON S1 takes on two tasks: Distributing electric power to multiple consumer loads in the low-voltage network. Protecting the supply cables to these consumers from the effects of overload and short-circuits.

With its intelligent equipment, SIVACON S1 offers operators manifold analysis and control options. Communication with suitable applications in the cloud is cable-connected or wireless via mobile network.



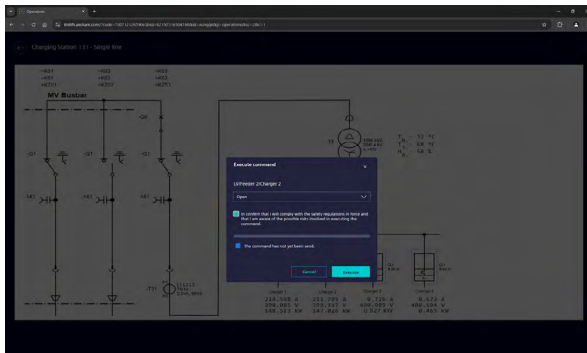
SIVACON S1 – Benefits

- Modular and compact
- Reliable power supply
- Smart power distribution
- Front access to all control and read-out devices
- Maintenance-free busbar joints and low-maintenance devices
- Practice-oriented covers of live parts
- Optional: complete remote diagnostics and remote control
- Resource-saving use of material, complete recycling possibility
- Space-saving design and optimized dimensions for installation in compact substations

➔ [siemens.com/sivacon-s1](https://www.siemens.com/sivacon-s1)

Low-voltage SENTRON circuit breakers 3WA and 3VA

Increasingly automated buildings, infrastructures, and industries, new technologies and strict standards require smart solutions in energy distribution and electrical installation. The safety of people and equipment must be ensured, as well as optimized energy consumption and reliable plant operation. Our SENTRON protection devices offer proven protection functions as well as options for integrating the devices into automation environments and for energy data collection. This lays the technical foundation for a safe, efficient power supply.



Safe remote operation of circuit breakers with Electrification X (SaaS)

[siemens.com/protection-devices](https://www.siemens.com/protection-devices)



3WA air circuit breakers

- The switch series 3WA, available since 2021, builds on decades of proven switching device technology and replaces its predecessor, 3WL.
- Consistent circuit breaker portfolio up to 1,150 V AC
- Three sizes with rated currents from 630 A to 6,300 A for AC applications
- High breaking capacity ICU from 55 kA to 150 kA at 500 V AC
- Simple functional extensions through uniform accessories for all sizes
- With two electronic trip units for the right performance for the suitable application
- With DAS+ protection functionality in new dimensions
- Additional features such as condition monitoring with ETU600



3VA molded case circuit breakers

- Modular, highly Variable System
- High plant availability thanks to an excellent selectivity concept
- Integrated measurement capture
- Simple integration into higher-level energy management and automation systems
- Extensive accessories for flexible functional extensions
- Minimal space requirements due to an extremely compact design
- Remote controllability via motor drives
- Complete SENTRON compact circuit breaker portfolio up to 1,600 A (IEC/UL) and 2,000 A

Low-voltage Fuse Switch Disconnectors 3NJ4 / 5 Intelligent Fuses 3NA COM Powercenter 1000



Fuse Switch Disconnectors 3NJ4 / 5

The fuse switch disconnectors 3NJ4 and 3NJ5 combine load switching and disconnection in one system. Thanks to the integrated NH fuse, they also protect installations against overload and short circuit. The extremely compact units can be installed even in tight spaces due to various connection options. Therefore, the switches are ideal for occasional manual switching and isolation of consumer circuits and power distributions in industrial and commercial buildings.

➔ [siemens.com/switching-devices](https://www.siemens.com/switching-devices)



SETRON 3NA COM LV HRC fuse link

Since transformer stations are often not networked, delayed detection of overloads leads to network failures and subsequent damage. The detection and localization of power outages are time-consuming. The communication-capable 3NA COM LV HRC fuse link offers a straightforward way to integrate local network transformer stations as central nodes into digital systems and bring transparency into network activities. Power providers can use the fuse at critical points in local network transformer stations to monitor the underlying network. Power outages are fixed significantly faster, and repair costs are reduced.

➔ [siemens.com/3NA-COM](https://www.siemens.com/3NA-COM)



3NA COM plus POC 1000

Up to 24 intelligent 3NA COM LV HRC fuse link transmit the required data to the data concentrator „Powercenter 1000,“ which provides the information to any gateway for the WWW via MODBUS TCP. This is a clever combination in which optimal protection against overload and short circuit, wireless knife-edge data capture, and processing for further analysis in the cloud are connected.

Multipurpose Automation Box (MAB)

The MAB is a versatile, immediately deployable solution that simplifies the monitoring and control of electrical systems. Its plug-and-play design supports various applications and optimizes network operation, making it an environmentally friendly choice that minimizes on-site effort. The MAB offers a solution for all automation tasks within a standardized system design. For the transformer station, it serves as the central interface for remote monitoring of all relevant operational data of all components, especially in the context of the network operator's telecontrol technology. Furthermore, it can also be used for IoT connectivity for a cloud application. Intelligent applications, such as SICAM Microgrid Control and SICAM Dynamic Load Management, enable the MAB to actively control and optimize the energy flow. Pre-verified hardware and software configurations allow for easy widespread deployment. The hardware can be customized and tailored to specific project and customer needs, ensuring it meets their exact requirements.

➤ Product video

➤ [siemens.com/MAB](https://www.siemens.com/MAB)



Benefits

- A universal gateway (SICAM A8000) for all use cases
- Simple integration of IoT applications, such as Electrification X
- Integration of local automation functions, such as EZA (renewable energy plant) controllers
- Integrated IT security



Remote Control Technology

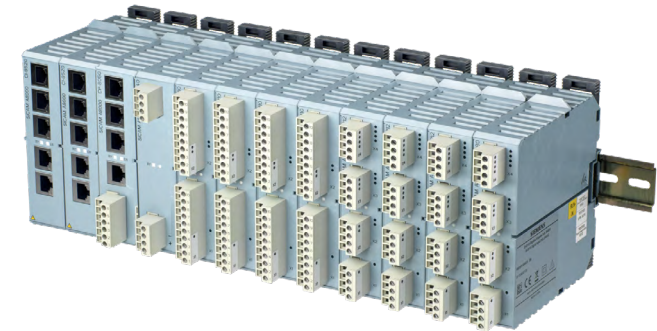
SICAM 8 and SICAM A8000

SICAM 8 is a universal all-in-one solution, both hardware and software-based, serving as a platform for all applications in the power supply sector. This platform enables the efficient and clear execution of various automation and management tasks.

SICAM A8000 is part of this platform and is a modular device series for remote control and automation applications. The scope of application for the SICAM A8000 series ranges from distribution network automation, integration of renewable energies (wind, solar, hydro), to railway power supplies and applications in the industry.

Customer requirements such as IT security, scalability, flexible communication, space-saving design, and layout for harsh environmental conditions were considered in the design of the SICAM A8000.

With the new CP modules and expansion modules, the modular SICAM A8000 series offers optimized solutions for all performance requirements.



SICAM A8000 – Benefits

- Suitable for rough ambient conditions thanks to mechanically stable modules and an extended temperature range from -40 to +70 °C
- High voltage strength up to 5 kV (IEC 60255) for use directly in substations
- Fulfills tomorrow's cyber security requirements with BDEW White Paper conformity, integrated crypto chip and IPSec encryption
- Integrated communications interfaces incl. GPRS "on board"
- Automation functions (IEC 61131-3), e.g. for controlling a regulated distribution transformer or for load control
- Space-saving design with a module width of 30mm (without display for CP) scalable by combining individual I/O modules
- Long product life cycle and high investment security by using standards as IEC 61850

➔ [siemens.com/sicam8](https://www.siemens.com/sicam8)

➔ [siemens.com/sicam-A8000](https://www.siemens.com/sicam-A8000)

Siemens Xcelerator and Electrification X

Siemens Xcelerator is an open digital business platform designed to empower customers to accelerate their digital transformation in a simpler, faster, and more scalable way. This platform stands out by boosting efficiency and resilience while maximizing flexibility. At its core, Siemens Xcelerator integrates hardware, software, and digital services, creating a comprehensive ecosystem that enhances cooperation and facilitates innovation.



Electrification X is a scalable IoT SaaS (Software as a Service) platform within the Siemens Xcelerator portfolio, bridging the gap between the real and digital worlds. Operators of renewable energy sources, transmission and distribution networks, as well as industrial and infrastructure clients, benefit from holistic management of their entire energy networks, increased operational uptime, and enhanced features such as reliability, energy efficiency, sustainability and cybersecurity.



OT Companion



Asset Management



Distribution Grid
Monitoring



Sust. / Energy
Management



Network Fault
Management



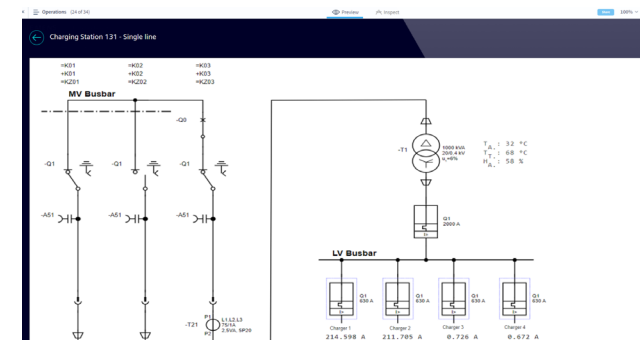
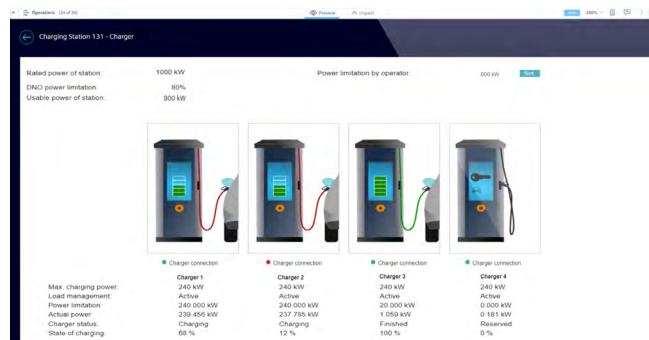
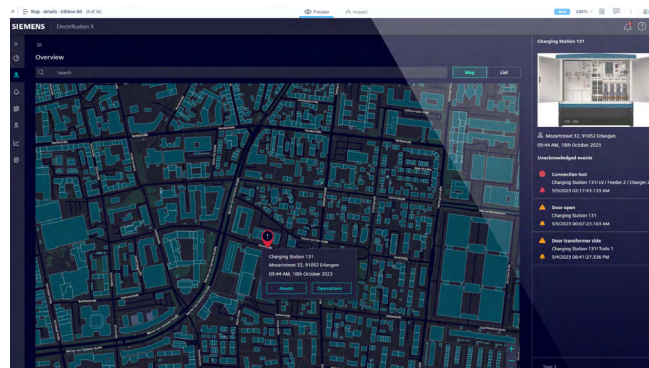
Load Management

siemens.com/xcelerator

siemens.com/electrificationx

Electrification X Load Management

Network expansion will increase exponentially. In this process, the energy system will become significantly more interconnected, creating a bidirectional flow of energy through decentralized generation, and will require much more complex automation and communication. In addition to the rapidly growing demands on the transformer station, there are also increasing requirements in energy management and preventive maintenance. How can you always be aware of the status of your energy supply, be informed about problems in real time, and prevent outages? The answer is provided by digitalization.



With the SICAM A8000 and compatible I/O modules, all signals and protocols from the OT are digitized and securely transmitted to the cloud application, Electrification X. This enables comprehensive monitoring and remote control, naturally adhering to the highest cybersecurity standards.

Electrification X – Benefits

- Cost-effective and future-proof solution
- SaaS (Software-as-a-Service)
- Monitoring and optional controlling
- Highest cybersecurity standards
- Clear energy management through measured values and load profiles
- Commissioning, onboarding and managed service as a complete solution from Siemens

➔ Website Load Management

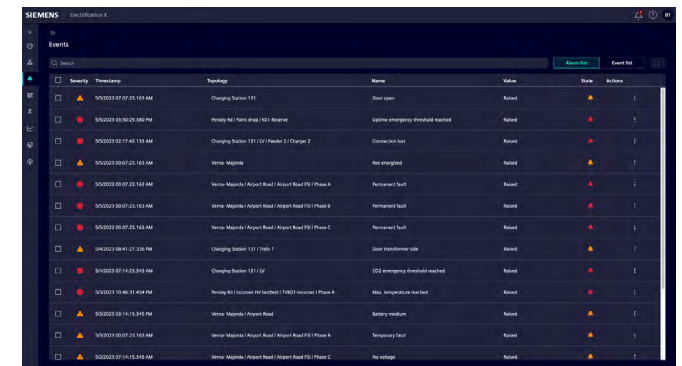
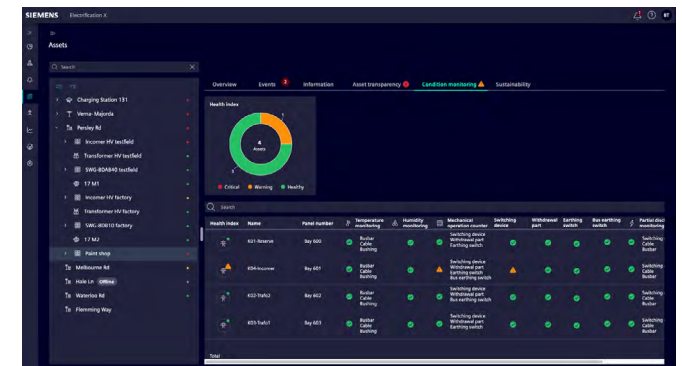
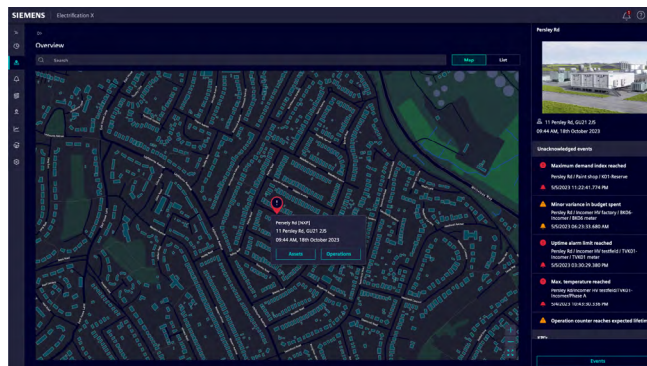
➔ Flyer Load Management

Electrification X Asset Management

The Electrification X Asset Management application is primarily used in the area of the primary distribution level in medium voltage (e.g., for the NXPLUS C, 8DA10, etc.). Particularly due to its optimal design for Siemens switchgear and components, the application creates numerous unique selling points, making it an essential part of our switchgear.

The application visualizes and monitors switchgear in real time. It is divided into the following functional areas:

- Operational Data
- Documents
- Health Status
- Maintenance



An IoT (Internet of Things) application is the only way to efficiently collect, visualize, and analyze all the measurement data. Thus, customers can not only detect errors directly when they occur but often even before they happen.

Asset Management - Benefits

- Predictive maintenance is possible
- Significant increase in facility availability
- Optimization of utilization and thus efficiency
- Lower operational costs (OPEX)

➔ Website Asset Management

➔ Flyer Asset Management

Electrification X Distribution Grid Monitoring

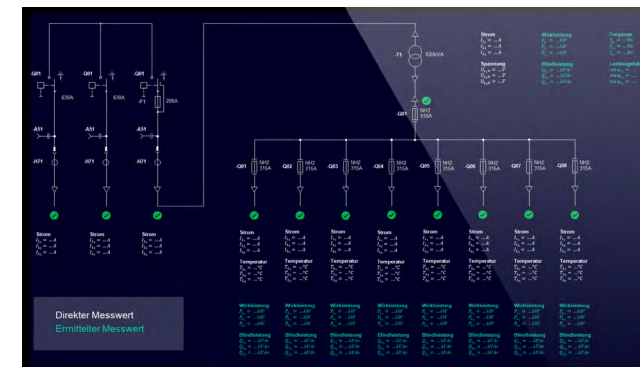
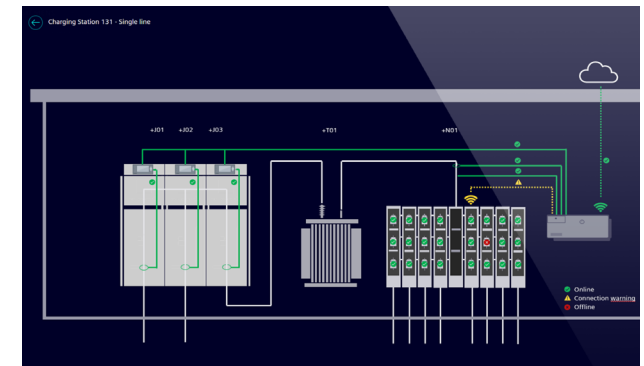
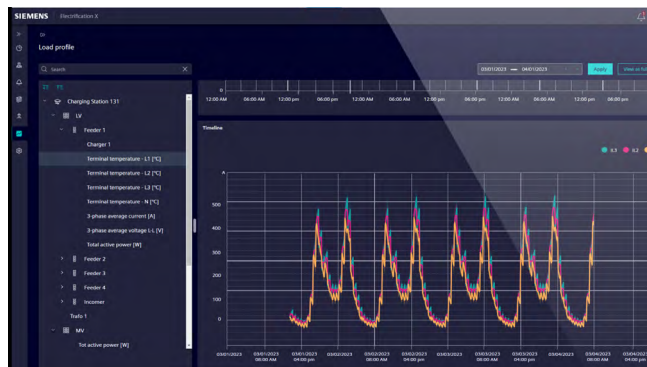
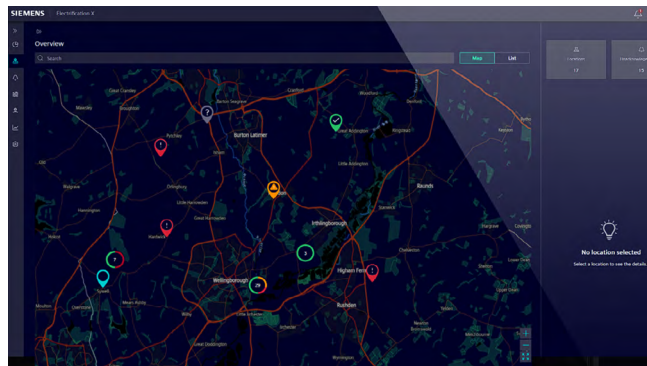
The application Distribution Grid Monitoring allows for the precise monitoring of all medium voltage distribution substations and the street distribution boxes of the low-voltage network. A comprehensive load monitoring in the low-voltage network provides insights into the networks' utilization, the load on essential network components, and enables the quick and early identification of critical bottlenecks in the distribution network as well as targeted deployment of service personnel.

Through Distribution Grid Monitoring, the necessary transparency in the distribution networks is created to handle the rapidly changing network conditions caused by, for example, PV systems and charging points for e-mobility, as well as to establish the foundation for the requirements of §14a EnWG (German Energy Industry Act).



➤ Website Distribution Grid Monitoring

➤ Flyer Distribution Grid Monitoring



The starting point in the browser-based web interface of the application is an integrated map view that includes all digitalized stations and serves as the basis for further analyses.

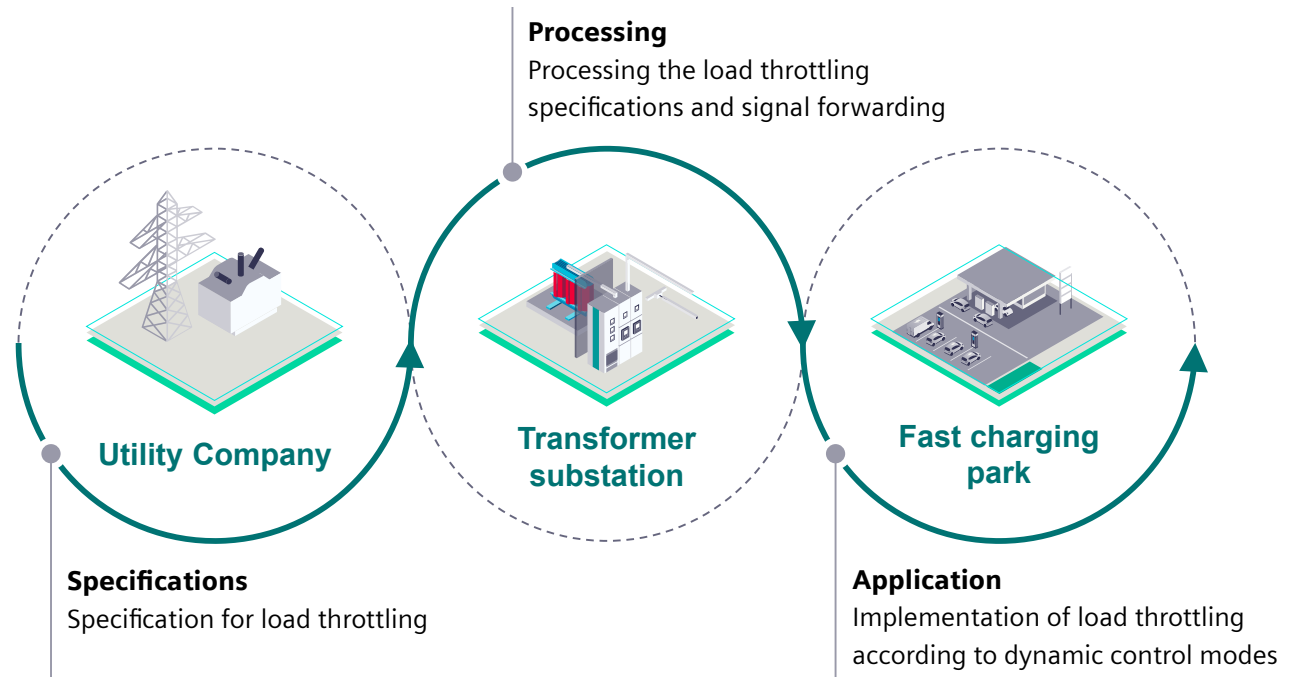
Distribution Grid Monitoring - Benefits

- Increase in network availability and service quality through monitoring
- Transparency about network utilization by evaluating consumption profiles
- Simple parameter setting and short commissioning times
- Comprehensive control of load peaks

Load Management

SICAM Dynamic Load Management

Load management refers to the optional controlling intervention by network operators to throttle the load. Charging facilities for electric vehicles must be adjustable according to the specifications of VDE-AR-N 4100 to ensure network operation (reduction of peak loads) as per the network operator's requirements. Under the Energy Industry Act §14a, a reduced network fee becomes effective in the contractual arrangement between the plant operator and the network operator if, in return, a network-friendly control of the charging stations is implemented by the plant operator. Despite the performance reduction required by the network operator, charging times for electric vehicles should be minimized.



The efficiency of implementation is to be designed solely by the plant operator. To realize minimal charging times despite the impending demand for power throttling, we offer our customers the solution SICAM Dynamic Load Management.

SICAM Dynamic Load Management - Benefits

- Cost-effective and future-proof solution
- The software can be integrated into the IoT concept (SICAM A8000)
- Minimization of charging times
- Simple installation and commissioning

➔ Website Dynamic Load Management

Lastmanagement SICAM Dynamic Load Management

By connecting the chargers via Modbus TCP, a manufacturer-independent implementation is created.

Depending on the use case (public parking lot, residential area, fleet parking, etc.), the customer can choose between various control modifications (Round Robin, First-In-First-Out, Split, etc.).

In addition to local implementation, the same hardware ensures integration into the IoT concept and a transmission of data to the cloud application Electrification X through complete compatibility.

Split

Uniform distribution of the available charging capacity through a threshold-defined, maximum available electric power; in cases of regular and defined parking duration or when there is no access to the status values of the charging units

Residential areas, company parking lots

Round-Robin

Vehicles are charged one after the other with the maximum charging power for a defined period. Vehicles with a lower charging requirement are thus charged more quickly

Fleet parking lots, public parking spaces

First-In/First-Out

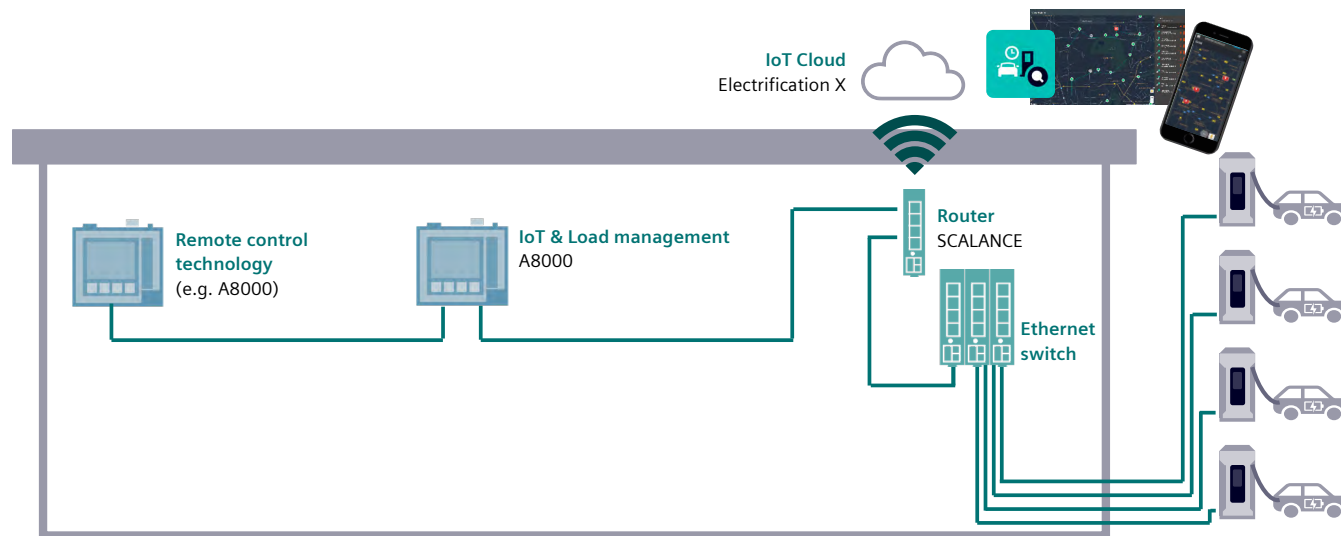
Vehicles are charged sequentially, depending on the time of arrival – the first connected vehicle has priority; the charging process for the next vehicle begins after the previous vehicle is fully charged

Fleet parking lots

First-In/Last-Out

Vehicles are charged sequentially, depending on the time of arrival – the last connected vehicle has priority; the charging process for the next vehicle begins after the previous vehicle is fully charged

Fleet parking lots

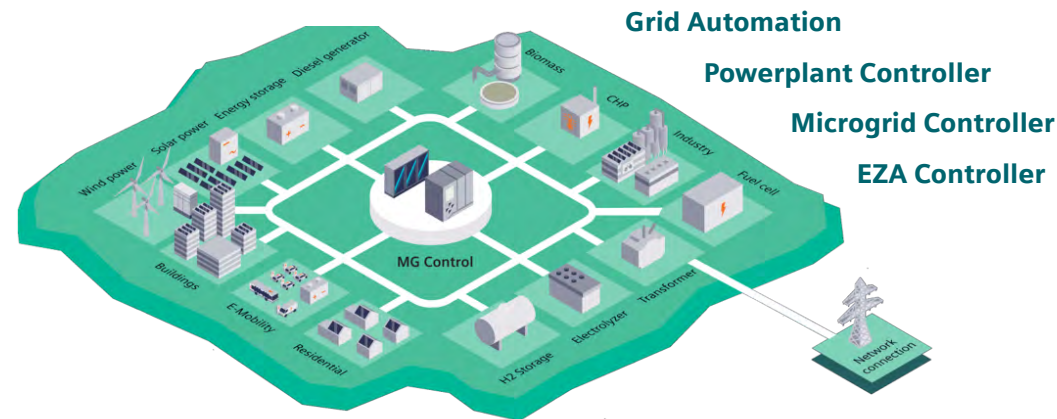


Cloud Connectivity

In addition to its primary functions, SICAM Load Management also offers the option to visualize and monitor the current status of the load management in the cloud application Electrification X.

Microgrid Controller (MGC/PPC) with EZA Controller Functionality

The Microgrid Controller is tasked with detecting the difference between target and actual values of various control variables at the grid connection point (e.g., reactive power) and determining the necessary adjustments of the corresponding control variables to be forwarded to the generating units or components. The target value specifications at the grid connection point are received by the control system through communication with the gateway of the utility network operator. The Microgrid Controller complies with the VDE-AR-N 4110:2018-11 standard for medium-voltage and is certified according to this standard.



A microgrid you can rely on - with the following features:

- EZA controller functionality including plant monitoring
- Grid outage detection, black start and island mode operation
- Automatic deployment of backup generators
- Optimized operation of fossil fuel power plants
- Reserve management
- Peak load reduction
- State of charge management for battery storage
- Load and generation forecasts
- Integration of electric vehicle infrastructure (Dynamic Load Management)

Benefits

- Maximum efficiency through optimally controlled energy supply system
- Excellent power quality through continuous system monitoring and control
- Cost-effective operation through tested, easy-to-apply optimization functions
- Comprehensive integration of renewable energies contributes to achieving CO₂ reduction goals
- Resource-efficient usage protects the environment and minimizes costs

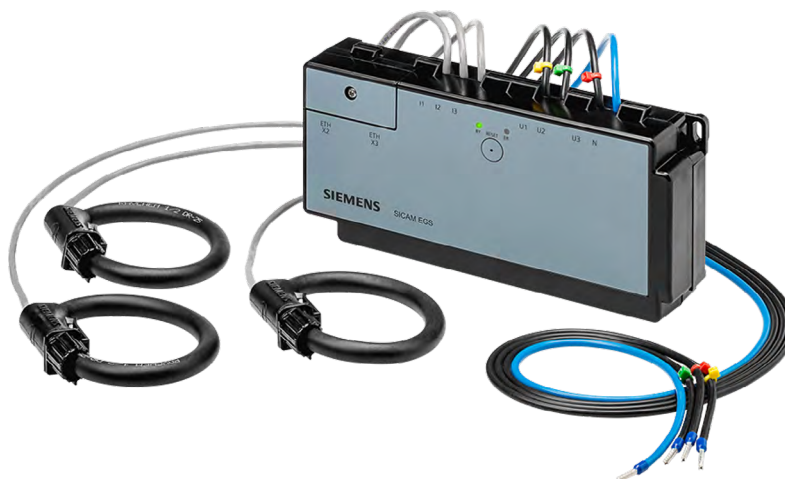
➔ [siemens.com/microgridcontrol](https://www.siemens.com/microgridcontrol)

SICAM EGS Enhanced Grid Sensor

SICAM EGS enables the combination of measurement and secure RTU gateway in one compact device while adhering to the highest security standards. SICAM EGS is an „All-in-One device solution“ for medium- and low-voltage transformer substations, cable distribution cabinets, and house connection boxes.

The following application areas are covered by SICAM EGS:

- Monitoring tasks in energy distribution
- Distribution network automation optimized for use in low and medium-voltage switchgear
- Asset monitoring for transformers and switchgear
- Monitoring of network connections for solar and wind parks as well as charging stations for electric vehicles
- Communication gateway for various networks and protocols
- IoT gateway for easy integration of products and solutions for metrology, sensors, protection and automation, power quality, and metrology to cloud-based platforms for asset management and data analytics



Dimensions	mm
Width	200
Depth	60
Height	97

SICAM EGS – Benefits

- Compact all-in-one solution with slim dimensions for minimal space requirements
- Integrated 3-phase measurement functionality for monitoring low-voltage networks
- Measurement and monitoring of current and voltage from distribution transformers with built-in sensors
- Automation functions (IEC 61131.3), e.g., for controlling a regulated distribution transformer
- Capturing the outgoing currents from the low-voltage fuse distribution via direct communication with the SENTRON 3NA COM current sensors
- Integrated communication using standards IEC 61850, IEC 60870-5-104, DNP3.0
- Connection of multi-measurement devices (e.g. SICAM FCM) via the integrated serial Modbus interface
- Ethernet interfaces and integrated LTE module for easy adaptation to existing communication infrastructures
- IoT connectivity: Provision of data via a secure internet connection for cloud-based applications and services (OPC UA Pub/Sub, MQTT, MindConnect)
- Compliance with IT security requirements in critical infrastructure
- An effective retrofitting solution for capturing and communicating alerts and measured values from medium-voltage switchgear and low-voltage fuse distribution in existing local network stations
- Compact device for use in cable distribution cabinets

➔ [siemens.com/sicam-egs](https://www.siemens.com/sicam-egs)

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