

PRODUCT SHEET

SIMARIS control
Asset Management
V 3.0.X

Digital Intelligence for your power distribution systems at the medium- and low-voltage levels.
siemens.com/simaris-control

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Overview

In today's data-driven era, digitalization is essential for power distribution systems. Operators and maintainers need real-time insights into asset performance and health to make informed decisions, minimize downtime, and optimize maintenance planning.

SIMARIS control is an on-premise monitoring and diagnostics solution for electrical power distribution assets at low and medium voltage level. Its modular architecture delivers tailored solutions for evolving market needs.

Our value proposition

- Asset Transparency: Access operational data directly on-site.
- Continuous condition monitoring: Receive early warnings, timely alerts, and actionable recommendations to prevent unexpected breakdowns, optimize maintenance planning, and support informed decision-making.
- Data Archiving: Analyse historical events and trends for better decision-making
- Flexible Visualization: Choose local or remote visualization options

Your benefits



Secure Data Processing and Storage
Keep your data safe and accessible locally



Maximized Uptime and Availability
Keep your systems operational and efficient



Reduced Manual Inspections
Eliminate manual data collection and analysis with continuous asset monitoring.



Optimized OPEX
Enable data-driven maintenance and replacement planning



Enhanced Risk Management
Enhanced your risk strategy with early warnings, timely alerts, and actionable recommendations for informed decision-making.



Prevent Unplanned Downtime
Ensure reliability through continuous health monitoring of assets.

Standard features and functions supported by SIMARIS control

- Limit supervision
- Multi-Trend windows for monitoring historical data
- Digital documentation repository
- Central alarm list

In addition to these standard features, SIMARIS control provides specialized options that can be purchased to suit your project needs. Details about these features are mentioned in the following chapter.

Feature overview

SIMARIS control provides modular, flexible and scalable functionalities that can be purchased on modular perpetual-based license model.

For Medium Voltage switchgear (AIS/GIS):

- Asset Transparency - Medium Voltage switchgear
- Condition monitoring modules:
    - Temperature and Humidity monitoring - Basic (MV AIS and GIS)
    - Temperature and Humidity monitoring - Advanced (MV AIS and GIS)

      (“Asset Transparency for MV” license is mandatory to avail this package)
    - Partial Discharge monitoring (MV AIS and GIS)
    - Circuit breaker monitoring - Basic (MV AIS and GIS)

      (“Asset Transparency for MV” license is mandatory to avail this package)

Asset Transparency

The Asset Transparency package includes:

- Graphical representations of the assets
- Deep dive into individual feeder/devices displaying real-time operational data (Operations and Measurements), status, and alarms from the different components.
- Trend visualizations of historical operational data for analysis.
- Digital document repositories for system manuals, product manuals, SLD, User specific documents, etc.
- Comprehensive alarm registry for all system alerts

Feature
Asset Transparency - Medium Voltage Switchgear

A dedicated package is available to support asset transparency for Medium Voltage switchgear (AIS and GIS). This feature offers the capabilities described in the Asset Transparency section above.

Condition Monitoring

Continuous monitoring of asset health conditions delivers early warning and alerts, facilitating effective risk management by identifying potential breakdowns and failures prior to occurrence. Condition monitoring enables data-driven maintenance and replacement planning, enhancing system uptime and availability by ensuring operational reliability. This proactive strategy promotes improved risk mitigation and efficient maintenance planning for electrical assets.

The information regarding the health status of assets is intended for guidance purposes only and does not constitute a binding basis for maintenance or operational actions. Nonetheless, it may assist in risk assessment related to assets and in taking informed decisions on maintenance scheduling or the replacement of components or assets themselves.

Certain condition monitoring modules may require additional sensors and IoT hardware to evaluate the health status of the assets.

Feature
Temperature and Humidity Monitoring – Basic (MV AIS and GIS)

Temperature and humidity monitoring is aimed at improving the safe operation of switchgear while minimising the frequency of inspection visits. By facilitating continuous observation of the temperature of essential components and the environmental conditions within the switchgear, the system ensures that any potential issues can be identified promptly.

The system features customisable threshold settings, enabling it to deliver early warnings and alerts based on individual temperature and humidity measurements. This capability assists in the identification of abnormal temperature fluctuations, allowing for timely intervention before problems escalate.

Continuous tracking of temperature and humidity eliminates the reliance on manual inspection visits, thus streamlining the maintenance process and enhancing operational efficiency. Furthermore, the use of fixed temperature sensors in busbar and/ or cable compartments promotes safety by removing the requirement for personnel to access restricted areas solely for obtaining temperature readings.

Feature
Temperature and Humidity Monitoring – Advanced (MV AIS and GIS)

Building upon the advantages of temperature and humidity monitoring - basic, the advanced monitoring system provides a comprehensive evaluation of asset health for individual feeders. Leveraging Siemens' domain expertise, dedicated rules and algorithms generate early warnings, timely alerts, and actionable recommendations to optimize maintenance and improve asset reliability.

The advanced monitoring capabilities facilitate the early detection of hotspots within the system. This is crucial for promptly identifying issues such as loose connections at cable and busbar joints, as well as stressed connections that may result from improper civil conditions, for example, an uneven floor impacting the connection of feeders or busbars or affecting the operation and contact of withdrawable vacuum circuit breakers (VCBs). Additionally, the asset health evaluation helps in recognising aggressive environmental conditions, such as increases in contact resistance caused by oxidation or corrosion at the joints.

With temperature and humidity monitoring - advanced, users are able to manage operational risks more effectively, enhance the performance of switchgear operations, and optimise maintenance schedules for improved reliability and efficiency.

Feature
Partial Discharge Monitoring (MV AIS and GIS)

Partial discharge monitoring is a critical function in medium voltage switchgear, facilitating early detection of faulty components and substandard installations within switchgear systems. This monitoring specifically targets areas such as medium-voltage cable plugs, insulators, bushings, and voltage transformers, where the early signs of insulation degradation may occur.

The primary focus of Partial Discharge Monitoring is to detect the gradual deterioration of insulation caused by factors such as moisture ingress, dust accumulation, or faulty components. By continuously monitoring and analyzing partial discharge activity, the system assesses insulation health, provides early warnings and alerts, and delivers actionable recommendations to optimize maintenance planning, improve asset reliability, and minimize the risk of unexpected failures.

To facilitate accurate monitoring, dedicated sensors are installed within the switchgear to gather the necessary data. These sensors capture real-time information related to partial discharge events, enabling the swift identification of emerging issues before they can escalate and impact overall system reliability.

Feature
Circuit Breaker Monitoring - Basic (MV AIS and GIS)

The circuit breaker is a critical component within medium-voltage switchgear. Through continuous monitoring and analysis of circuit breaker health, the system evaluates asset condition, provides health status assessments, generates early warnings and timely alerts, and offers actionable recommendations to support informed maintenance decisions, improve asset reliability, and minimize the risk of unexpected failures.

The Basic module is designed to monitor the vacuum interrupter contacts and the kinematic chain, which constitutes the operating mechanism of the mechanical components. This level of monitoring provides essential insights into the condition of these fundamental parts, supporting preventative maintenance and operational reliability.

The circuit breaker monitoring - Basic module provides a comprehensive evaluation of the circuit breaker's electrical and mechanical lifetime. The electrical lifetime assessment relies on two methods: the I2t method and the 2P abrasion method.

The module tracks the number of operation cycles, providing valuable insights on remaining mechanical lifetime of the breaker. In addition, it records the number of days since the last switching operation was performed.

To ensure the health of the operating mechanism, the Basic module continually monitors a range of parameters. These include make time, break time, auxiliary contact time for both opening and closing, and the pole scattering time for open and close movements.

Collectively, these measurements allow for an informed evaluation of the condition and reliability of the circuit breaker's operating mechanism.

The functionality of the circuit breaker monitoring basic module is based on the monitoring capabilities provided within the protection relay, requiring no additional sensor/ hardware for implementation.

Feature
Project specific requirements

In accordance with project requirements, data can be transferred to higher-level system, such as SCADA systems. Both the data to be transmitted and the communication interface are subject to variation based on the project's unique configuration and requirements.

License structure

Base Software License	**WinCC OA V3.21 or above** (Selection of licenses based on project requirements)
Standard License Structure	**SIMARIS control** **Asset Management**
Modules	• Asset Transparency - Medium Voltage switchgear AIS and GIS per 10, 20, 50 panels • Temperature and Humidity monitoring - Basic (MV AIS and GIS) per 10, 20, 50 panels • Temperature and Humidity monitoring - Advanced (MV AIS and GIS) per 10, 20, 50 panels (The „Asset Transparency for MV" license is required in order to access this package) • Partial Discharge monitoring (MV AIS and GIS) per 10, 20, 50 panels • Circuit breaker monitoring - Basic (MV AIS and GIS) per 10, 20, 50 panels (The „Asset Transparency for MV" license is required in order to access this package)
Subscription term	Onetime purchase
Billing term	As per standard agreement
Upscale	Effective immediately, pro-rated billing
Connected Devices	To be purchased separately

SIMARIS control operates on an Industrial Grade PC (IPC), which serves as the dedicated hardware platform for the system. The software application is directly installed onto the IPC, enabling the reliable collection, storage, and visualisation of operational data. All data is maintained securely on-premise, ensuring that condition monitoring and data analytics activities are conducted within the customer's own infrastructure. The selection of the appropriate IPC is based on the specific requirements of each project.

SIMARIS control is built upon the WinCC OA software framework. In order to operate SIMARIS control, a WinCC OA software licence is required as the foundational software licence. This base software licence is available as a perpetual licence, providing lifetime validity. The licensing mechanism utilises a hardware dongle, necessitating an available USB port on the industrial PC (IPC). The selection of the appropriate base software licence is determined by the specific requirements of each project. These requirements may include the number of data points needed, the communication protocols to be integrated, and the number of visualisation interfaces required.

To access the runtime dashboard of SIMARIS control, a valid SIMARIS control licence is essential. The SIMARIS control application is constructed on a modular framework, which supports a variety of functions to meet project-specific requirements. All available modules within SIMARIS control can be licensed as perpetual licences, ensuring lifetime usage for the customer.

Prerequisites

Supported Connected Devices

In order to enable asset management capabilities within SIMARIS control, specific field devices, sensors, and the associated connectivity hardware must be procured and installed. These components are necessary to support the intended asset management operations.

All required devices and hardware must be purchased and installed on-premise at the location designated by the Customer, as mutually agreed upon by the Customer and Siemens. The Customer holds responsibility for the installation of the Connected Devices at the site, as well as for any costs that arise in relation to carrying out this functionality. Installation and operation must be performed in compliance with the relevant Documentation provided for the Connected Devices.

For order information, Customer may contact its local sales representative.

Ordering

Ordering Process

To order SIMARIS control, Customer must request a quote from its Siemens sales representative. Depending on the offering, Customer can then place the order. The “Terms and Conditions” consist of the “Siemens Terms of Sale (STS) - Base Terms” and the “Specific Supplemental Terms for on-premise Software of Infrastructure & Industry Business” , the offer, the Acceptable Use Policy, the Siemens Data Processing Terms, this Product Data Sheet and any other Supplemental Terms which may be referenced in either of the mentioned documents.

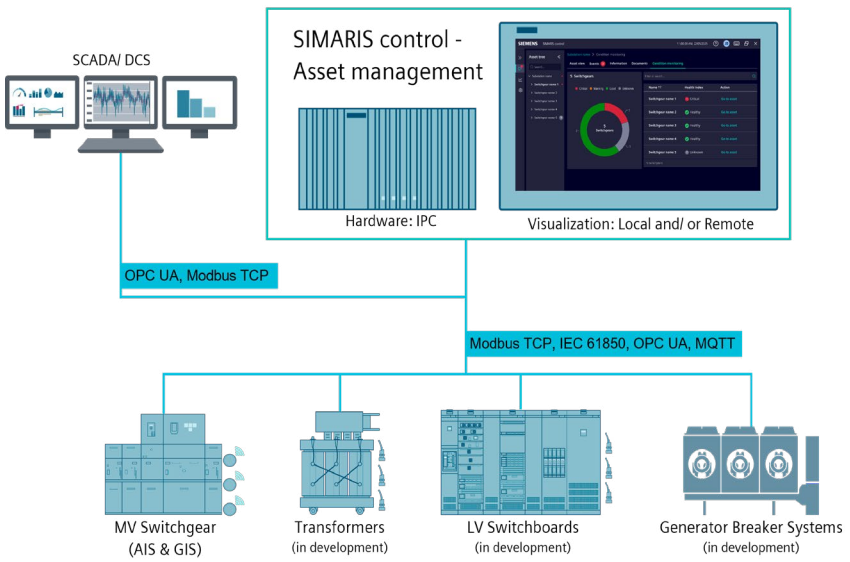
Product Documentation

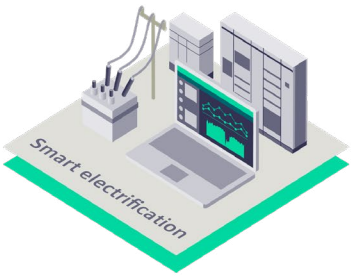
Technical Documents	Document ID
SIMARIS control - User Guide	109993992

Technical Documents can be downloaded here

Topology

General architecture of SIMARIS control





- ✓ Secure Data Processing with Local Storage
- ✓ Continuous monitoring with health status of connected equipment
- ✓ Suitable for new (greenfield) as well as existing (brownfield) projects

Note: The product graphics are for indication purpose only.

Customer Support

Siemens offers helpdesk support.
Customer may contact its local Siemens representative for support requests.

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