



PRODUCT SHEET

SIMARIS control

Asset Management

Digital Intelligence for your power distribution systems at the medium- and low-voltage levels
[siemens.com/simaris-control](https://www.siemens.com/simaris-control)

SIEMENS

1

Overview	3
-----------------	----------

2

Feature overview	5
-------------------------	----------

Asset Transparency	6
Asset Transparency - Medium Voltage Switchgear	6
Asset Transparency - Low Voltage Switchgear	6
Asset Transparency - Generator Breaker Systems (GBS)	6
Condition Monitoring	7
Temperature and Humidity Monitoring – Basic (LV MV AIS and GIS)	7
Temperature and Humidity Monitoring – Advanced (MV AIS and GIS)	7
Partial Discharge Monitoring (MV AIS and GIS)	8
Circuit Breaker Monitoring - Basic (MV AIS and GIS)	8
Circuit Breaker Monitoring - Advanced (MV AIS and GIS)	9
Temperature Monitoring - Basic (LV)	10
Switching Device Monitoring - Basic (LV)	10
Switching Device Monitoring - Basic (HB1-C)	11
Switching Device Monitoring - Basic (HB3)	12
Transformer Monitoring - Basic	12
Peripheral Device Monitoring	12
Project specific requirements	12

3

License structure	13
--------------------------	-----------

4

Prerequisites	15
----------------------	-----------

5

Ordering	16
-----------------	-----------

6

Product Documentation	17
------------------------------	-----------

7

Topology	18
-----------------	-----------

8

Customer Support	19
-------------------------	-----------

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 Asset Monitoring:** Receive early warnings and alerts to prevent failures and optimize maintenance planning.
- **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

Improve your risk strategy with early warnings and alerts



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
- User-defined dashboards
- Energy monitoring - Basic
- Digital documentation repository
- Digital maintenance logbook
- Email notification for alerts
- 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)
 - Circuit breaker monitoring - Advanced (MV AIS and GIS)
("Asset Transparency for MV" license is mandatory to avail this package)

For Low Voltage switchgear:

- Asset Transparency - Low Voltage switchgear
- Condition monitoring modules:
 - Temperature monitoring - Basic (LV)
 - Switching device monitoring - Basic (LV)
("Asset Transparency for LV" license is mandatory to avail this package)

For Generator Breaker Systems (GBS):

- Asset Transparency - GBS
- Condition monitoring modules:
 - Switching device monitoring - Basic (GBS)
("Asset Transparency for GBS" license is mandatory to avail this package)

Non switchgear asset monitoring:

- Transformer Monitoring – Basic
(Generic distribution transformers e.g., Geafol, Fluidtrafo, Generic Transformers)
- Peripheral device monitoring – Basic
(Substation peripheral devices e.g., Generic HVAC, Fire & smoke detection systems, etc.)

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.
- Digital maintenance logbook for inspection protocols, manual maintenance tasks creation and assignments, maintenance history.
- Comprehensive alarm registry for all system alerts
- Single line representation for low-voltage switchgear.
- Control functionality for switching devices, particularly for low-voltage switchgear.
- Aggregated asset specific information on energy consumption, energy budget usage, and CO2 emissions (if applicable).

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.

Feature

Asset Transparency - Low Voltage Switchgear

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

Feature

Asset Transparency - Generator Breaker Systems (GBS)

A dedicated package is available to support asset transparency for Generator Breaker Systems (GBS). 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 offers a comprehensive evaluation of asset health, specifically focusing on individual feeders. This assessment is conducted through the use of dedicated rules and algorithms, which are developed using Siemens' domain expertise.

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, which can be caused by factors including moisture ingress, the accumulation of dust, or the presence of faulty components. By continuously tracking partial discharge activity, the system provides timely insights into the condition of critical insulation elements, thereby supporting proactive maintenance and reducing 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. By continuously monitoring the circuit breaker health, it is possible to identify potential faults early and plan an efficient maintenance schedule, thereby ensuring ongoing operational continuity.

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

Circuit Breaker Monitoring - Advanced (MV AIS and GIS)

The Advanced module builds upon the functionality of the Basic module by extending its monitoring capabilities to additional mechanical components within the circuit breaker. These include the opening/trip coils, closing coils, and the spring motor charging mechanisms. By encompassing these extra elements, the Advanced module enables a more comprehensive evaluation of the circuit breaker's overall mechanical health. This expanded scope significantly reduces the likelihood of unexpected failures and supports more targeted and effective maintenance planning.

The Advanced module supports monitoring the current profiles of both the opening/trip coils and the closing coils. This function aids in assessing the health status of these breaker components, offering early warnings and alerts if defects are detected within the coils. In addition, by tracking the current profile of the spring charging motor, the system can identify abnormalities in the kinematic chain during the spring mechanism charging process. Through the analysis of the most recent switching operation, the system provides an indication of the circuit breaker's readiness for the next switching operation.

The operation of the Advanced circuit breaker monitoring module is based on the observation of the excitation profile of the drive mechanism. Additional sensor hardware is required to activate and support these advanced monitoring functions.

Feature

Temperature Monitoring – Basic (LV)

Temperature 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. This capability assists in the identification of abnormal temperature fluctuations, allowing for timely intervention before problems escalate.

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

Feature

Switching Device Monitoring – Basic (LV)

The uninterrupted and reliable functioning of low voltage switchgear depends heavily on the effective monitoring of its critical components, such as Air Circuit Breakers (ACBs), Moulded Case Circuit Breakers (MCCBs), and motor controllers. Continuous monitoring of the health status of these switching devices enables the early identification of potential faults, facilitating the implementation of a proactive and efficient maintenance schedule. This approach is essential to ensure the ongoing continuity of operations and to minimise unexpected downtime.

The system's condition monitoring capabilities vary depending on the type of device installed within the low voltage switchgear. The monitoring system provides comprehensive information of health of the switching devices, including the status of main contacts, the remaining lifetime of circuit breakers, the date of the most recent maintenance activity, and indications as to whether maintenance or inspection is currently required or possible. This systematic approach supports informed decision-making regarding the operation and upkeep of the equipment.

Furthermore, the health status of switching components in motor control centres, such as contactors, is determined based on statistical data collected from the motor controller, for example, through devices like SIMOCODE Pro. The statistical data used for this assessment may include the number of switching operations performed, the number of trips recorded, and other relevant operational metrics. By leveraging this data, the system promotes targeted maintenance and enhanced operational reliability.

Feature

Switching Device Monitoring - Basic (HB1-C)

Continuous condition monitoring of switching devices within Generator Breaker Systems (GBS) plays a crucial role in identifying potential faults at an early stage. This proactive approach allows for the planning of efficient maintenance schedules, which, in turn, helps maintain uninterrupted operational continuity.

The Basic module is specifically designed to monitor the abrasion of vacuum interrupter contacts of circuit breakers, as well as the kinematic chain that forms the operating mechanism of mechanical components—including circuit breakers, disconnectors, and earthing switches. By focusing on these fundamental parts, the module delivers essential insights into their condition, thereby promoting data-driven preventative maintenance strategies and replacement activities ensuring operational reliability.

For circuit breakers, the system is capable of delivering a comprehensive evaluation of their electrical lifetime. This assessment is conducted using the 2P abrasion method, which determines the remaining number of switching cycles the breaker can perform at its rated current.

Across all switching devices installed within the switchgear, the system tracks the number of operation cycles. This information provides valuable insights into the mechanical lifetime evaluation of each switching device. Additionally, the system records the number of days since the last switching operation took place, delivering further data to support maintenance planning.

To safeguard the health of the operating mechanism, the system continuously monitors the auxiliary contact time for both opening and closing operations. The collection and analysis of these measurements facilitate a well-informed evaluation of the overall condition and reliability of the switching devices.

The functionality of circuit breaker monitoring - Basic is achieved by utilising the monitoring capabilities of the protection relay, which requires signals from the secondary protection core of the CT. No extra condition monitoring sensors or hardware are needed for this implementation.

A dedicated package is available to support Switching device monitoring for HB1-C Generator Breaker Systems (GBS). This feature offers the capabilities described in the Switching device monitoring - Basic (GBS) section above.

Feature

Switching device monitoring - Basic (HB3)

A dedicated package is available to support Switching device monitoring for HB3 Generator Breaker Systems (GBS). This feature offers the capabilities described in the Switching device monitoring - Basic (HB1-C) section above.

Feature

Transformer Monitoring – Basic

Transformer monitoring – Basic allows you to monitor key parameters of generic distribution transformers, such as temperature readings. The specific data to be monitored and the communication interfaces used depend on the project's configuration and requirements.

Feature

Peripheral device monitoring – Basic

Peripheral device monitoring – Basic allows you to monitor key parameters of substation peripheral devices, such as Generic HVAC, Fire & smoke detection systems, etc. The key parameters may include measurements, operational status and alarms. The specific data to be monitored and the communication interfaces used depend on the project's configuration and requirements.

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 (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) - Circuit breaker 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) - Asset Transparency - Low Voltage switchgear per 10, 20, 50 panels - Temperature monitoring - Basic (LV) per 10, 20, 50 panels (The „Asset Transparency for LV“ license is required in order to access this package) - Switching device monitoring - Basic (LV) per 10, 20, 50 panels (The „Asset Transparency for LV“ license is required in order to access this package) - Asset Transparency - GBS (HB1-C, HB3) per switchgear - Switching device monitoring – Basic (GBS) (“The „Asset Transparency for GBS“ license is required in order to access this package) (HB1-C, HB3) per switchgear - Transformer Monitoring Basic (per Transformer) (Distribution transformers e.g., Geafol, Fluidtrafo, Generic Transformers) - Peripheral device monitoring – Basic (per device) (Substation peripheral devices e.g., Generic HVAC, Fire & smoke detection systems, etc.)
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.

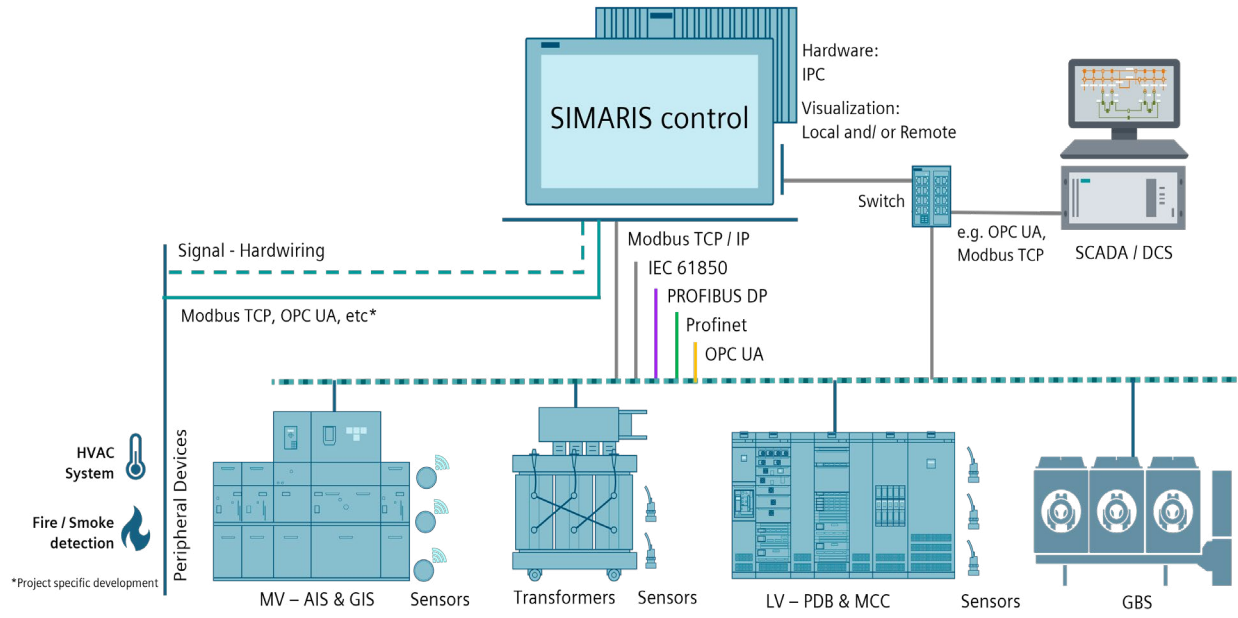
Product Documentation

Technical Documents	Document ID
SIMARIS control - User Guide	109993992

 [Technical Documents can be downloaded here](#)

Topology

General architecture of SIMARIS control



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.

Published by
Siemens AG
Smart Infrastructure
Electrification & Automation
Mozartstrasse 31c
91052 Erlangen, Germany

For the U.S.
published by
Siemens Industry Inc.
3617 Parkway Lane
Peachtree Corners, GA 30092
United States

© Siemens 2026

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract.