SIEMENS

Ingenuity for life

SICAM A8000 Series

Operation, telecontrol, and automation in the smallest spaces

NEW Part 2

siemens.com/sicam-a8000

SICAM A8000

CP-8050

PK2
ETH X2
LK2

ER   RY

PK3
ETH X3
LK3

RTX4
X4
RS-485
OH4

RTX5
X5
RS-232
OH5

One for all:

SICAM A8000 series

The SICAM A8000 series is a new modular device range for telecontrol and automation applications.

The most important features are:
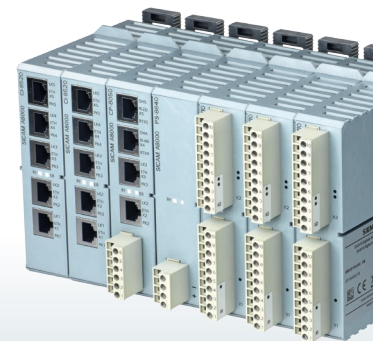
|			
Rough ambient conditions		Space-saving design	
Automation		High EMC stability	
Long product lifecycle		Integrated communication	
Cyber Security		Scalability	

What we've accomplished so far

We've launched of the SICAM A8000 series, specifically CP-8000/21/22 and associated I/O modules, accompanied by a wide range of communication activities: market launch manual, flyer, presentation, booklet and promotion pack.
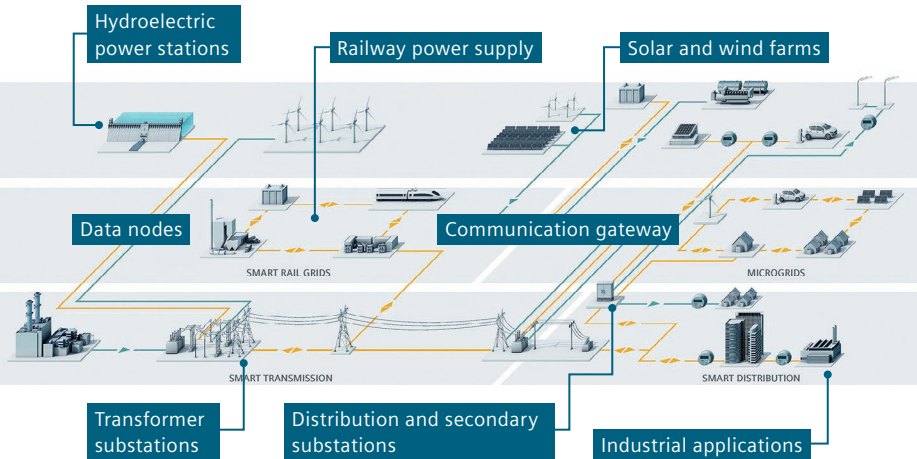
What's new
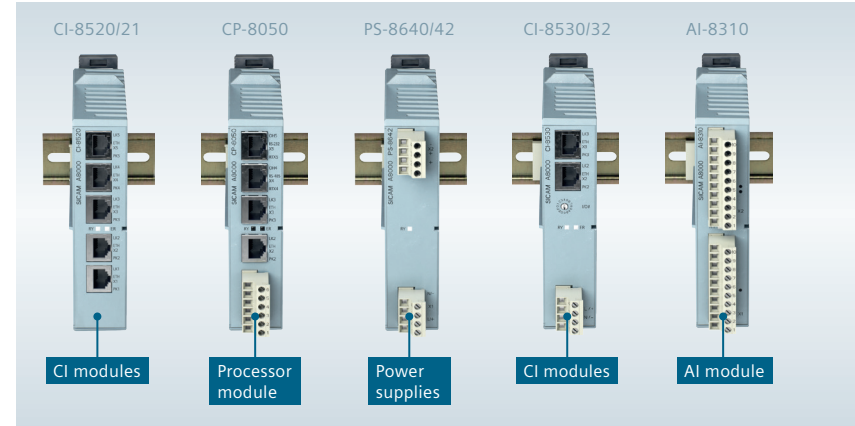
The SICAM A8000 series continues. A more powerful processor and power supplies, new communication, enhanced cyber-security functionalities, an additional I/Os and new parameterization software have been added to the series.

Wherever energy flows:

Universal platform allows versatile use

The SICAM A8000 device range is designed for many different tasks, from simple to complex. Always adaptable to the actual requirements, use it anywhere along the entire energy supply chain.

Hydroelectric power stations

Railway power supply

Solar and wind farms

Data nodes

Communication gateway

SMART RAIL GRIDS

MICROGRIDS

SMART TRANSMISSION

SMART DISTRIBUTION

Transformer substations

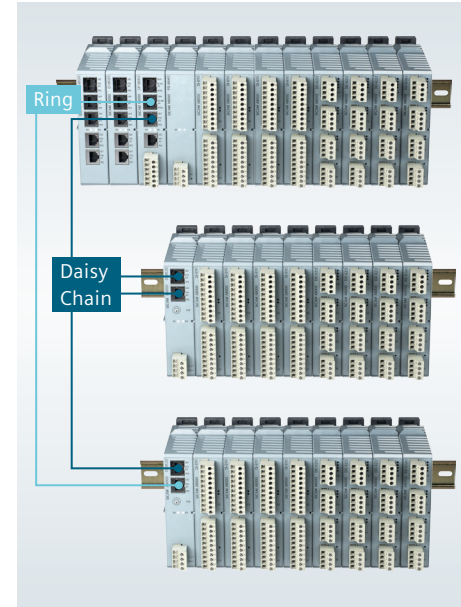Distribution and secondary substations

Industrial applications

Module by module:

Tailor precisely to your application

Ready to meet all challenges with a modular system concept and a powerful CPU:

- Daisy chain & ring
- Operates via standard Ethernet, max. 100 m
- Max. 16 I/O lines
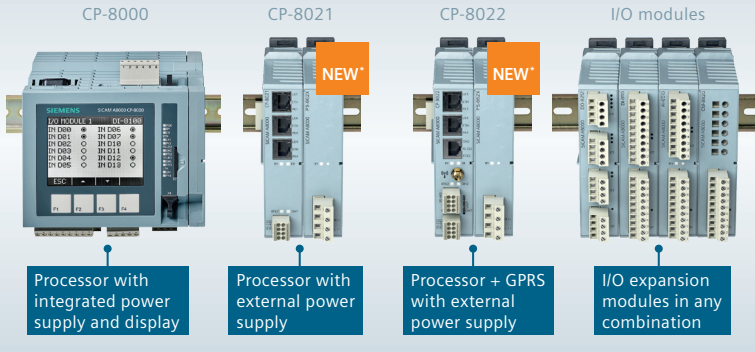- Max. 14 interfaces
- Integrated firewall

Ring

Daisy Chain

Great benefits right from the factory:

Well designed for practical use

1. Platform modularity for **versatile application options and reduced inventory**

2. Extended temperature range of -40°C to +70°C for **rough ambient conditions**

3. Highest EMC stability up to 5 kV (IEC 60255) for **direct use in substations**

4. Integrated short-circuit indicator functionality for **use in cable network monitoring**

5. Use of international standards such as IEC 61850 for **high investment security**

6. Integrated crypto chip and IPSec encryption **to fulfill the high cyber security requirements**

7. Multitude of interfaces and integrated GPRS module for **simple adaptation to existing communication infrastructures**

8. Integrated web parameterization tool for **simple engineering**

9. Plug-and-Play functionality of the modules for **time and cost savings**
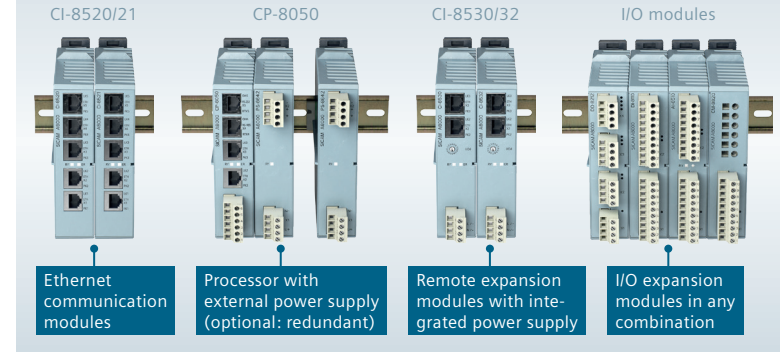
A strong team:

Equipped for any task

CP-8000	CP-8021	CP-8022	I/O modules
Processor with integrated power supply and display	Processor with external power supply	Processor + GPRS with external power supply	I/O expansion modules in any combination

The SICAM A8000 series consists of a combination of modules for processor, power supply and expansions for various tasks such as operation, telecontrol, automation and communication.
* The new position of the power supply module(s) allows for redundancy which can increase availability of the system.

CI-8520/21	CP-8050	CI-8530/32	I/O modules
Ethernet communication modules	Processor with external power supply (optional: redundant)	Remote expansion modules with integrated power supply	I/O expansion modules in any combination

To the SICAM A8000 we have added a new processor module with a powerful CPU, Ethernet communication modules with additional interfaces and communication modules for remote I/O assemblies.

Communication modules
CI-8520/21*

Temperature range	-25°C to +70°C
Interfaces	Max. two modules can be mounted 5 x Ethernet per module

CI-8520

Switch functionality	Freely configurable Integrated firewall RSTP, HSR, PRP

CI-8521*

Switch functionality	Freely configurable Integrated firewall Hardware-based application layer firewall RSTP, HSR, PRP

* in preparation

Power supplies
PS-8640/42

PS-8640

Nominal input voltage	DC 24...60 V
Output power	P_{out} 45 W

PS-8642

Nominal input voltage	DC 110...220 V AC 100...230 V
Output power 1	P_{out1} 45 W
Voltage output for external modem or signaling voltage	DC 24 V
Output power 2	P_{out2} 10 W

Processor module
CP-8050

Processor	Dual Core ARM Cortex A9
Memory	Internal FLASH 2 GB RAM: 512 MB ECC secured Optional SD card up to 2 GB
Real-time clock	Protected against power outages for up to 72 h
Interfaces	2 x RJ45 (Ethernet) 1 x RS-232 (RJ45) 1 x RS-485 10 x RJ45 (Ethernet) with optional CI modules
Communication	Up to 8 communication protocols simultaneously on one CP unit
Data points	200,000
System monitoring	Watchdog error relay

Expansion modules
CI-8530/32

Interfaces	2 x Ethernet
I/O interface extended	Up to 8 x I/O modules
Operating voltage	**CI-8530:** DC 18...78 V incl. tolerance **CI-8532:** DC 82.5...286 V incl. tolerance
Output voltage 1	U_{out1} DC 5.15 V ±2 % static ±3 % dynamic
Output current 1	0 A – 1.8 A
Output voltage 2	U_{out2} DC 28.0 V ±10 % static ±3 % dynamic
Output current 2	0 A – 0.43 A

Analog input module
AI-8310*

Inputs for temperature

Inputs	4, electrically isolated
Temperature sensors	Pt100 Pt1000 Ni100
Measurement	2-wire, 3-wire, 4-wire
Accuracy	0.19 % at 25 °C
Resolution	11 mΩ or 110 mΩ
Power supply	Max. 0.8 W (via internal bus)

* in preparation

Cyber Security

The SICAM A8000 series to meet the requirements of tomorrow:

- **Integrated crypto chip** protects data in a secure environment.
- **IPSec encryption** facilitates secure communication over IP networks.
- **https protocol** ensures secure transmission of sensitive data.
- **BDEW white paper conformity** fulfills the recommendations for secure control and communication systems.
- **Password protected access** ensures that only authorized persons can access the system.

Additional features with SICAM A8000 CP-8050:

- **Firewall** separates TCP/IP networks via an integrated software firewall. An additional hardware based firewall application is in preparation.
- **Firmware signature** protects against firmware manipulation.
- **Security logbook** saves SYSLOG in the event of a power outage.
- **Role based access control** according to IEC 62351-8 ensures that every user is granted only the rights corresponding to the assigned role.
- **Configurable system functions** make it possible to selectively enable individual or multiple system functions for each communication interface.

Convenient engineering:

Parameterize, commission and operate

With SICAM WEB

Access SICAM A8000 easily with a browser

Benefits:

- Access to all parameters 24/7
- One time address assignment
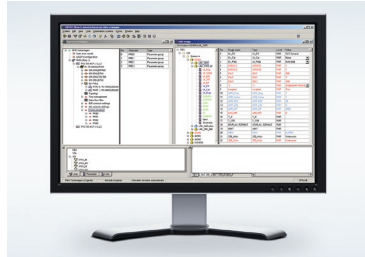- Unlimited users
- Maximum user friendliness

With SICAM TOOLBOX II

An integrated tool for all automation tasks

Benefits:

- Minimizes initial setup work
- Rational, efficient engineering

With SICAM Device Manager

- Project and device management for: CP-8000, CP-8021, CP-8022
- Device duplication
- Network connection to device via SICAM WEB

Benefits:

- Easy, clear management of projects and devices in folder structures
- Little parameterization work necessary thanks to device duplication and automatic adaptation of specific parameters
- Same look and feel as SICAM WEB

Order numbers

Module	Designation	MLFB
CP-8000	Compact device, -25 to +70 ℃	6MF21010AB100AA0
CP-8000	Compact device, -40 to +70 ℃	6MF21011AB100AA0
PS-8620	Power supply DC 24...60 V (12 W)	6MF28620AA00
PS-8622	Power supply DC 110...220 V (12 W)	6MF28622AA00
PS-8640	Power supply DC 24...60 V (45 W)	6MF28640AA00
PS-8642	Power supply DC 110...220 V, AC 230 V (45 W)	6MF28642AA00
CP-8021	Processor, 4 interfaces	6MF28021AA00
CP-8022	Processor, 5 interfaces + 1 x GPRS	6MF28022AA00
CP-8050	Processor, 4 interfaces (max. 14)	6MF28050AA00
CI-8520	Ethernet communication module	6MF28520AA00
CI-8521	Ethernet comm. with HW-based applic. layer firewall	6MF28521AA00
CI-8530	I/O interface module, electrical DC 24...60 V	6MF28530AA00
CI-8532	I/O interface module, electrical DC 110...220 V	6MF28532AA00
DI-8110	Binary input 2 x 8, DC 24 V	6MF28110AA00
DI-8111	Binary input 2 x 8, DC 48/60 V	6MF28111AA00
DI-8112	Binary input 2 x 8, DC 110 V	6MF28112AA00
DI-8113	Binary input 2 x 8, DC 220 V	6MF28113AA00
DO-8212	Binary output relay 8 x DC 24...220 V/AC 230 V	6MF28212AA00
AO-8380	Analog output ±20 mA, ±10 mA, ±10 V	6MF28380AA00
AI-8310	Analog input Pt100/Pt1000/Ni100	6MF28310AA00
AI-8320	Analog input 4 x ±20 mA/ ±10 V	6MF28320AA00
AI-8510	Analog input 3 x U (direct), 3 x I (LoPo)	6MF28510AA00
AI-8511	Analog input 3 x U (LoPo), 3 x I (LoPo)	6MF28511AA00
CM-8820	Power converter adapter module, in 3 x I (1 A/5 A) out (LoPo)	6MF28820AA00
CM-8811	I/O coupling module CP-8000	6MF28811AA00

The following applies to all products that include OpenSSL IT security functions:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (www.openssl.org).

This product includes cryptographic software written by Eric Young (eay@cryptsoft.com).