

SIEMENS

Ingenuity for life

SICAM A8000 Series

Operation, telecontrol, and
automation in the smallest spaces

[siemens.com/sicam-a8000](https://www.siemens.com/sicam-a8000)



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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 being:



Rough ambient conditions



Automation



Long product lifecycle



Cyber Security



Space-saving design



High electric strength



Integrated communication

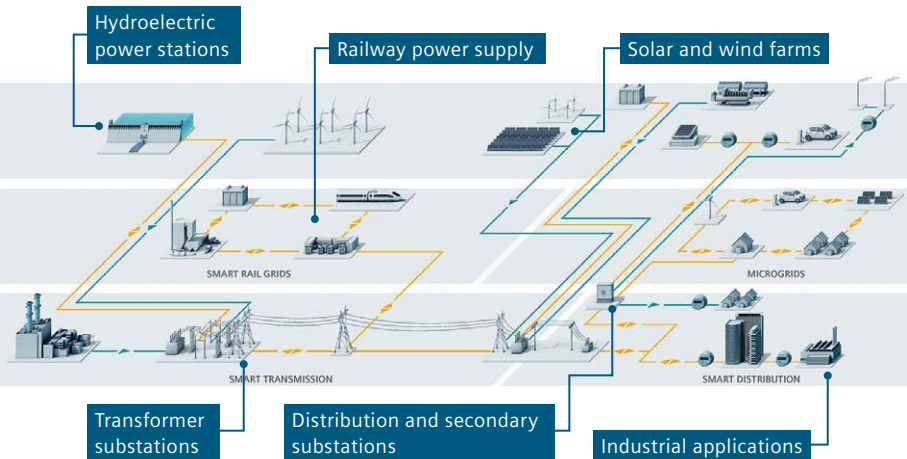


Scalability

Wherever energy flows:

Universal platform allows versatile use

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



Module by module:

Precisely tailored to the application

Individual tasks and application scenarios require modules that can be freely combined in nearly any way. Thanks to the different performance levels of the processor modules and the universal expansion modules, the SICAM A8000 series is nearly continuously scalable and can be expanded at any time.

Example 1: High performance and many interfaces for complex tasks

- Automation tasks in power distribution and transmission, micro-grids
- Control functions in hydroelectric power stations, including the turbines themselves
- Control and communication in railway power supply
- As a communication gateway for various networks and protocols

Example 2: Everything in view with the compact solution on site

- For use in distribution automation
- Optimized for use in MV switchgear
- Load-flow control available

Example 3: Space-saving design with no display and a slim CP module

- Grid connection for solar and wind farms
- Control and monitoring of electricity and gas distribution stations
- Simple gateway function



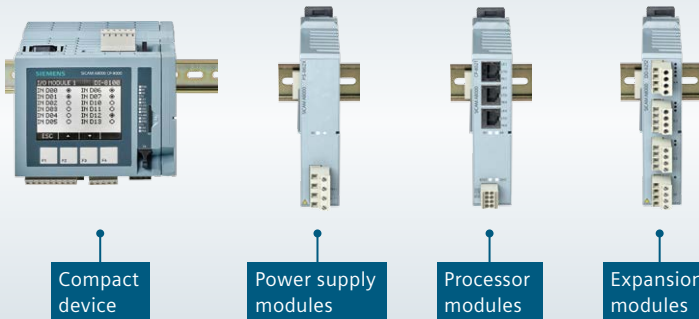
Great benefits right
from the factory:

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

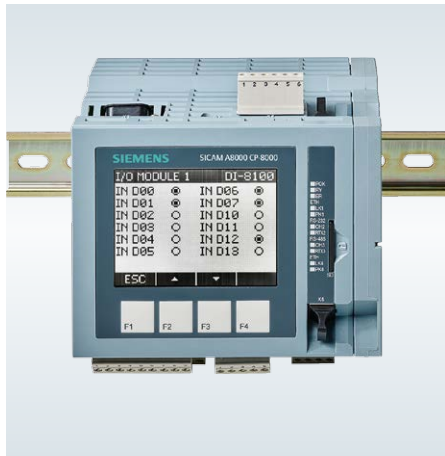


The SICAM A8000 series consists of a combination of modules for power supply, processor, and expansions and is used for various tasks such as operation, tele-control, automation, and communication. The SICAM A8000 CP-8000 compact device combines a power supply, display with function keys, and binary inputs and outputs.

Compact device

CP-8000

Size (L x H x D)	128 x 124 x 123 mm
Temperature range	-40°C to +70°C
Interfaces	2 x Ethernet LAN 1 x RS 232 1 x RS 485 (galvanically isolated)
Memory	SD card
Data points	20,000
Special features	Integrated power supply 12 DI, 8 DO integrated, max. 116 I/O (max. 6 expansion modules) Integrated function keys and display



Power supply

PS-8620 and PS-8622

Operating voltage	PS-8620: DC 18...78 V incl. tolerance PS-8622: DC 82.5...286 V incl. tolerance
Output voltage 1	U_{out1} DC 5.15 V $\pm 2\%$ static $\pm 3\%$ dynamic
Output current 1	0 A – 1.8 A
Output voltage 2	U_{out2} DC 28.0 V $\pm 10\%$ static $\pm 3\%$ dynamic
Output current 2	0 A – 0.43 A



Processor module

CP-8021

Size (L x H x D)	30 x 132 x 124 mm
Temperature range	-40°C to +70°C
Interfaces	2 x RJ45 (Ethernet) 1 x RS 232 (RJ45) 1 x RS 485 (spring-loaded terminals, 8-pole plug)
Memory	SD card up to 2 GB
Data points	20,000
Distributed archive	Available



Processor module

CP-8022

Size (L x H x D)	30 x 132 x 124 mm
Temperature range	-40°C to +70°C
Interfaces	2 x RJ45 (Ethernet) 1 x RS 232 (RJ45) 1 x RS 485 (spring-loaded terminals, 8-pole plug) 1 x RS 232/485 (selectable) 1 x GPRS
Memory	SD card up to 2 GB
Data points	20,000
Distributed archive	Available



Digital input modules

DI-8110/11/12/13

16 binary inputs	2 groups with 8 inputs each			
	DI-8110	DI-8111	DI-8112	DI-8113
Rated voltage	DC 24 V	DC 48/60 V	DC 110 V	DC 220 V
Max. operating voltage	DC 31.2 V	DC 78 V	DC 143 V	DC 253 V
Current consumption	< 5 mA	< 3 mA	< 1.5 mA	< 1 mA



Digital output module

DO-8212

8 binary outputs (relay)	4 groups with 2 outputs each; galvan. isolated	
Rated voltage	DC 24/48/60/110/220 V; AC 110/230 V	
Max. continuous current	8 outputs, each max. 3 A (5 A/1 minute)	
Switching capacity	Direct voltage	Alternating voltage
	Min. 50 mW at DC 5 V	Max. 1,250 VA; 5 A/V 250 AC, resistive load Max. 500 VA; 2 A/V 250 AC, $\cos\phi = 0.4$



Analog input module

AI-8320

AI-8320

4 analog inputs	4 groups with 1 output each; galvan. isolated	
Measurement range	Current measurement	-20...0...+20 mA
	Voltage measurement	-10...0...+10 V
Resolution	0.004% relative to the measuring range value	
Accuracy	0.15% at 25°C	



Analog input module

AI-8510

Inputs for measurement currents

Input voltage at I_N	225 mV as per IEC 60044-8
Max. measurement current	200% I
Rated frequency	45...65 Hz
Resolution	16 bit
Sampling	20 values per system period

Inputs for measurement voltage

Input voltage	100/ $\sqrt{3}$ VAC, 230 VAC, 400/ $\sqrt{3}$ VAC (parameterizable)	
Max. measurement voltage	150% U	
Rated frequency	45...65 Hz	
Resolution	16 bit	
Sampling	20 values per system period	
Intrinsic consumption	< 0.3 VA	at U=230 V
	< 0.02 VA	at U=110 V/ $\sqrt{3}$



Analog input module

AI-8511

Inputs for measurement currents

Input voltage at I_N	225 mV as per IEC 60044-8
Max. measurement current	200% I
Rated frequency	45...65 Hz
Resolution	16 bit
Sampling	20 values per system period
Internal impedance	22 k Ω

Inputs for measurement voltage

Input voltage	$3.25/\sqrt{3}$ VAC
Max. measurement voltage	150% U
Rated frequency	45...65 Hz
Resolution	16 bit
Sampling	20 values per system period
Internal impedance	22 k Ω



Current transformer adapter module

CM-8820

Inputs for measurement currents

Rated current I_N	1 A/5 A (parameterizable)	
Max. measurement current	200% I	
Rated frequency	45...65 Hz	
Intrinsic consumption	< 0.1 W < 0.3 W	at I=1 A at I=5 A
Thermal withstand capability	10 A 100 A	continuous 1 s

Outputs for measurement currents

Rated voltage at I_N	225 mV as per IEC 60044-8	
Max. voltage	450 mV	
Rated frequency	45...65 Hz	



Analog output module

AO-8380

4 analog outputs	All outputs galvanically isolated
Output current	-20...0...+20 mA at max. 500 W -10...0...+10 mA at max. 1 kW
Output voltage	-20...0...+20 V at min. 1 kW
Accuracy	0.3% at +25°C 0.4% at 0...+50°C 0.7% at -20...+70°C 0.8% at -40...+70°C



Advantages tested in practise:

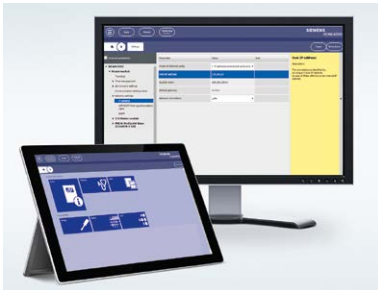
Mounting and commissioning made easy

Easy mounting

- Compact DIN rail mounting
- Detection of the plugged modules during startup
- Individual combination of modules
- Consistent bus for I/O modules

Convenient engineering tools

- SICAM WEB
- SICAM TOOLBOX II



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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 (eyay@cryptsoft.com).

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