

CONNECTING AN ALL-ELECTRIC WORLD

SICAM Automation Highlights

Michael Schachinger | PLM for SICAM A8000

One for all

SICAM A8000 Series



The design of the SICAM A8000 equipment series has been specifically tailored to meet market requirements and customer needs.

- From simple to complex, always adapted in line with the actual requirements of the area of application
- Fulfills cybersecurity requirements
- Use of standards ensures secure investment
- Reduced stock inventory thanks to modular platform
- Usable along the entire energy supply chain

SICAM A8000 Series

All requirements combined in a single platform

SIEMENS
Ingenuity for life



Rough ambient conditions



Automation



Long product lifecycle



Cyber Security



Space-saving design



High electric strength



Integrated communication



Scalability

A strong team

SICAM A8000 - equipped for any task

SIEMENS
Ingenuity for life

CP-8000



Processor with integrated
power supply and display

CP-8021



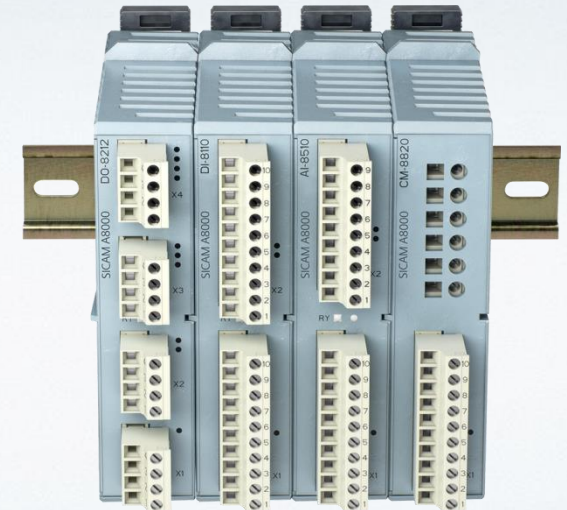
Processor with
external power supply

CP-8022



Processor + GPRS with
external power supply

I/O module



Expansion modules
combinable as needed

A strong team

SICAM A8000 - equipped for any task

SIEMENS
Ingenuity for life

CI module



Ethernet
communication module



CP-8050



Modular processor with external
power supply (optional: redundant)



CI module



Detachable
expansion module



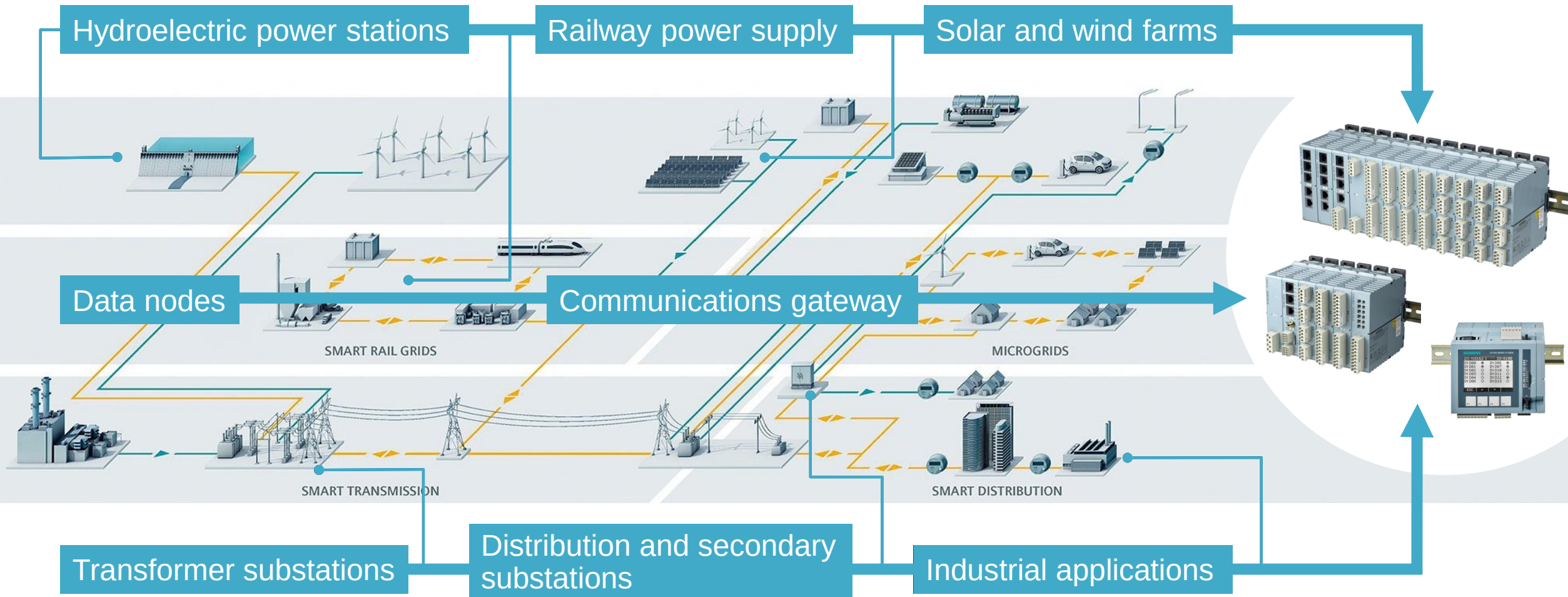
I/O module



I/O expansion modules
combinable as needed

Wherever energy flows SICAM A8000 - universal platform allows versatile use

SIEMENS
Ingenuity for life

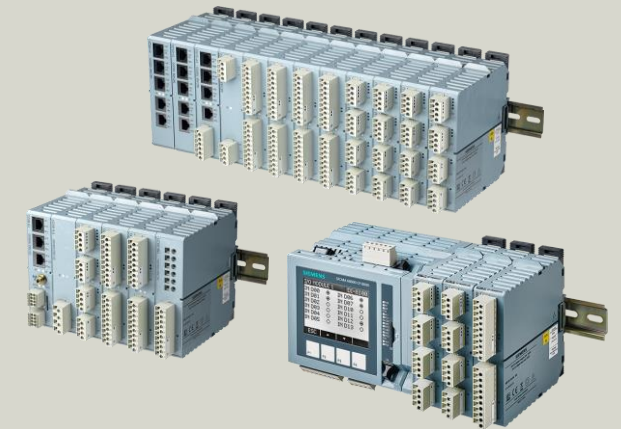


SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- Cyber Security
- Retrofit
- SICAM Device Manager
- Digitalization



The entire family at a glance

SICAM A8000 - expansion modules

SIEMENS
Ingenuity for life

DO-8212

8 binary outputs

DC 24/48/60/110/220 V; AC
110/230 V

DO-8230

in preparation

Transistor output

16x binary output
DC 24-60 V

CM-8820

3 inputs current

Input: 1 A/5 A
(parameterizable)
Output: 225 mV
according to
IEC 60044-8

AI-8340

in preparation

4x VT

50 Hz and 16,7 Hz
0,2% Accuracy
2x DO for
Syncrocheck

AI-8330

in preparation

3x CT

1A/5A
0,2% Accuracy
In conjunction
with AI-8340

DO-8221

in preparation

Secure command output

DC 24-220 V, AC 230 V
1-out-of-n monitoring
External wiring check

DI-8110

16 binary inputs

DC 24 V

DI-8111

DC 48/60 V

DI-8112

DC 110 V

DI-8113

DC 220 V

AI-8310

4 analog inputs

(2 groups with 2 AI
each) for Pt100/Ni100
in 2-, 3-, or 4-wire
design

AI-8320

4 analog inputs

-20...0...+20 mA
-10...0...+10 V

AO-8380

4 analog outputs

-20...0...+20 mA
-10...0...+10 mA
-10...0...+10 V

AI-8510

AI-8511

3 inputs current/voltage

I: 225 mV as per IEC 60044-8
U: 100/√3 VAC, 230 VAC, 400/√3 VAC
I: 225 mV as per IEC 60044-8
U: 3.25/√3 VAC

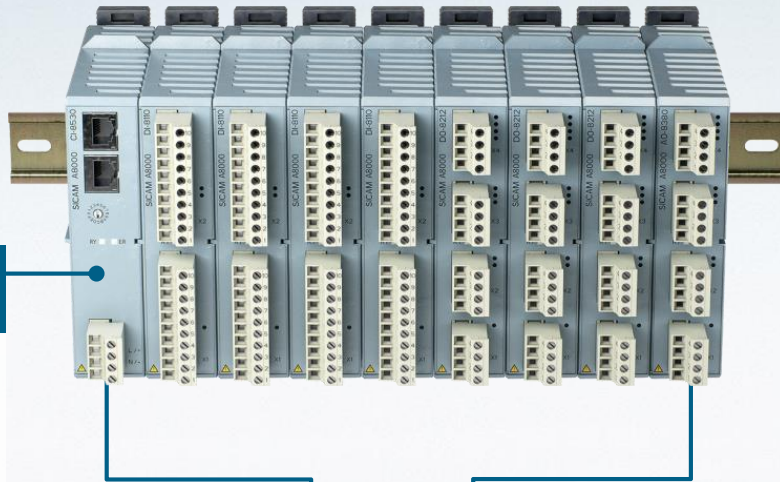
The SICAM A8000 I/O LED module

Support during commissioning and operation



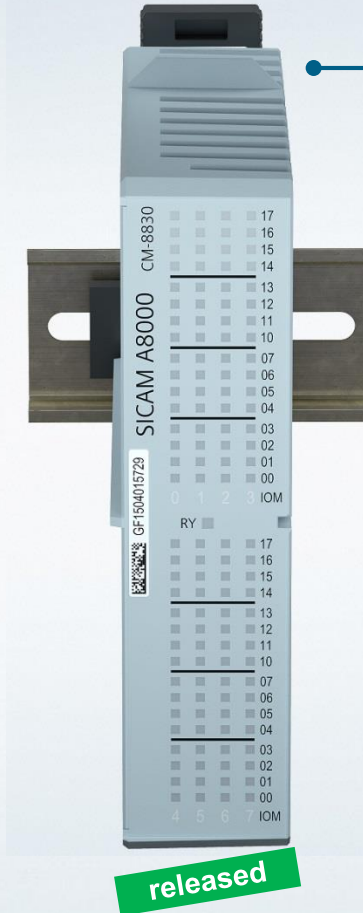
Remote I/O Adapter

Up to 16 remote I/O rows
connected to CP-8050 with:
CI-8530: DC 24–60 V
CI-8532: DC 110–220 V



SICAM I/O row

Up to 8 I/O modules
DI / DO / AI / AO



CM-8830

SICAM I/O LED module

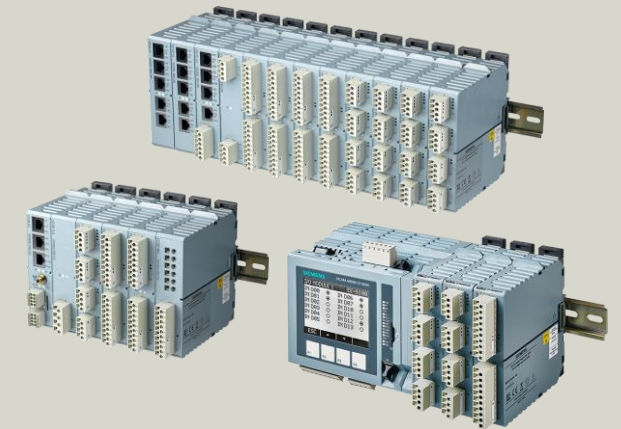
- 128 Process LEDs for 8 I/O Modules
- Can be added subsequently to existing I/O rows (FW Update)
- Direct FW support - No dedicated engineering necessary
- Position is free to choose right from PS-86xx/CI-853x
- Power consumption <0,6W
- Process visualization after configuration of I/O modules
- Error LEDs per Module show process errors after engineering

SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- **CP-8050 is ready for data node applications**
- Cyber Security
- Retrofit
- SICAM Device Manager
- Digitalization



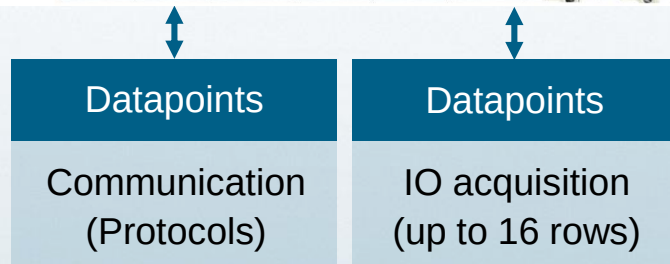
SICAM A8000 CP-8050

Enhanced Featureset – Extended Processing

Sales Release
V4.00

SIEMENS
Ingenuity for life

CPCI85	Up to 4x EPCI85
400.000 datapoints	400.000 datapoints
400 connections	200 connections
8 Protocols	4 Protocols
1 PLC ressource	1 PLC ressource

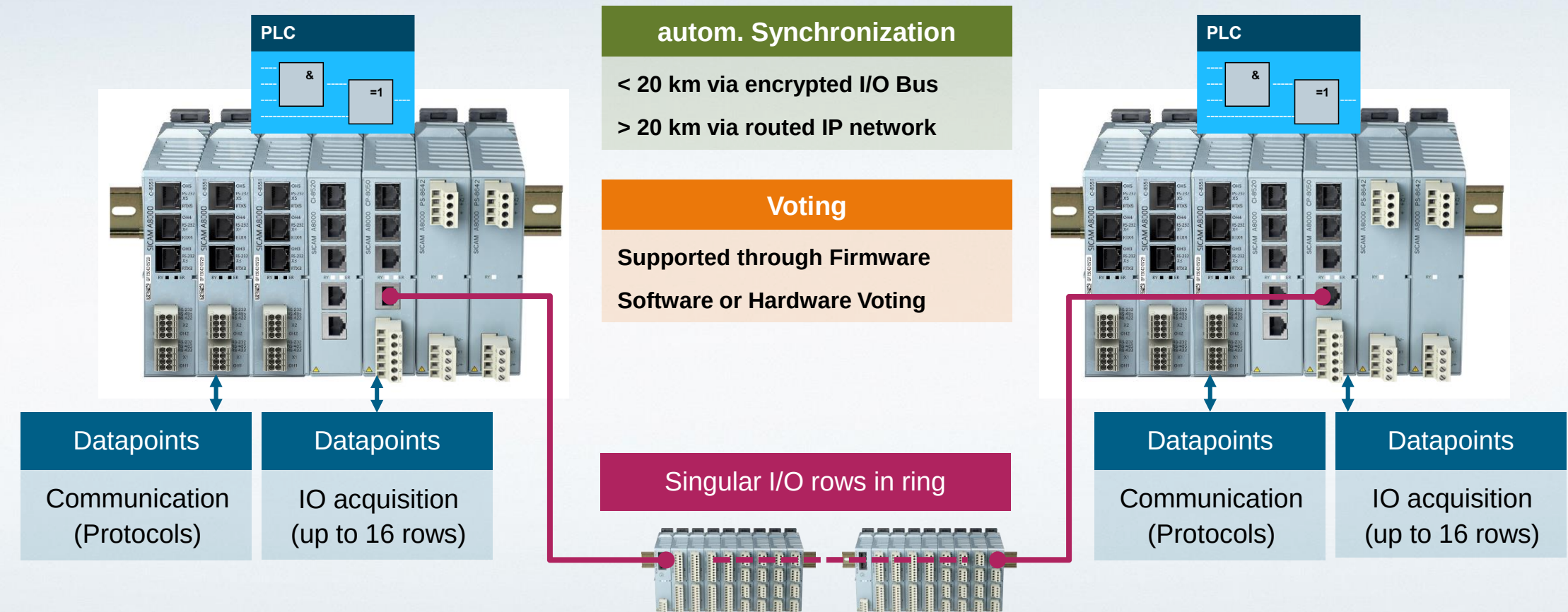


- Today's CP-8050 Base-Firmware CPCI85
 - Limited to 400.000 datapoints
 - Limited to 400 connections
 - Limited to 8 protocols
 - Limited to 1 PLC resource
- Tomorrow's Extended-Processing-Firmware EPCI85 will unlock the full potential of CP-8050 performance and offer a scalable feature-set.

SICAM A8000 CP-8050

Enhanced Featureset – Redundancy Concept

Sales Release
V4.00

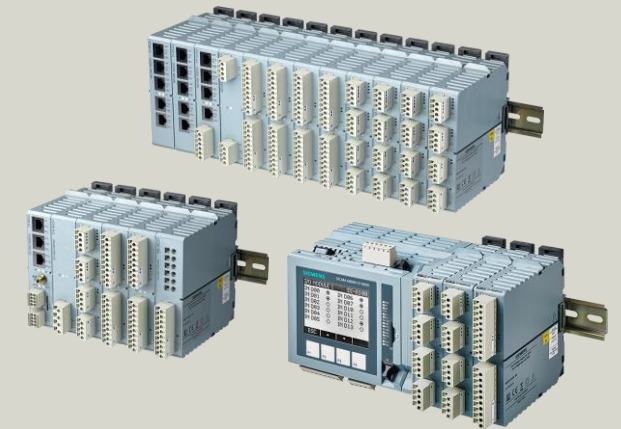


SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- **Cyber Security**
- Retrofit
- SICAM Device Manager
- Digitalization



Cyber Security

SICAM A8000 - meeting the requirements of tomorrow



Integrated crypto chip

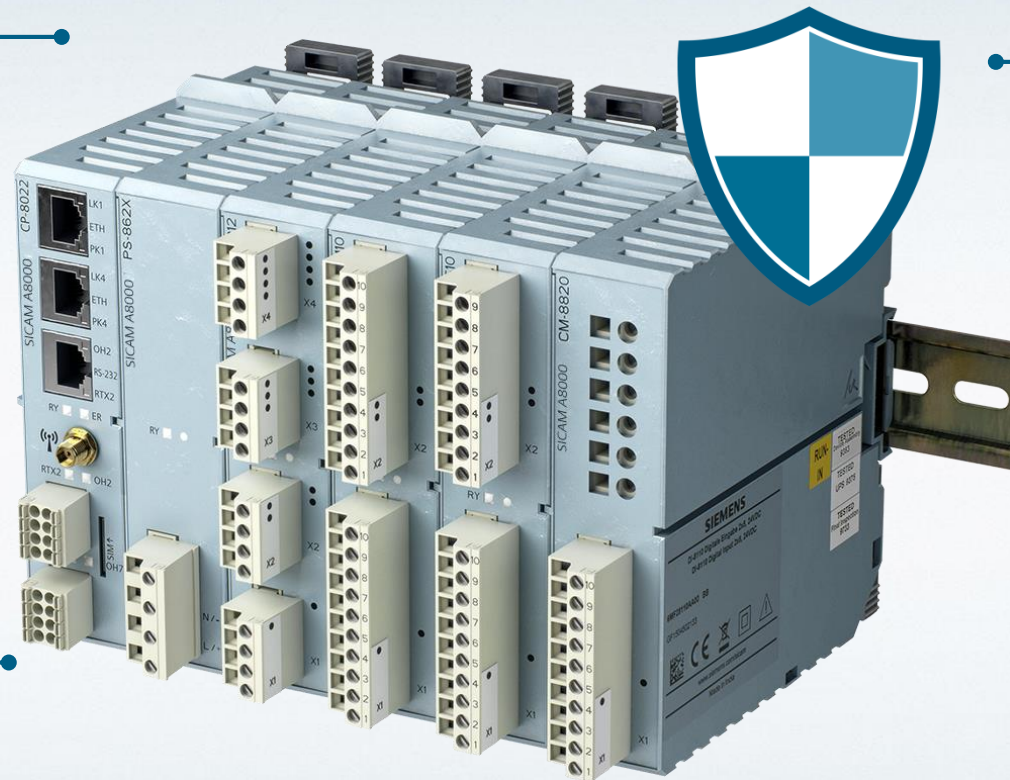
Protects data in a secure environment

IPSec encryption

Enables secure communication via IP networks

Secure and reliable https protocol

Guarantees the secure transmission of sensitive data



Compliant with BDEW White Paper

Fulfills the recommendations for secure and reliable control and communication systems

TLS encryption

acc. to IEC 62351-3
for IEC104 & IEC61850

Security Logbook

Non-volatile storage of
SYSLOG events

Cyber Security

SICAM A8000 - additional features with SICAM CP-8050



Firewall

For the separation of TCP/IP networks via integrated software firewall or additional hardware-based application firewall

Firmware Signature

Protection against firmware manipulation

Configurable System Functions

Selective activation of individual or multiple system functions per communications interface

Certificate Exchange

Via EST & SICAM GridPass

Role Based Access Control

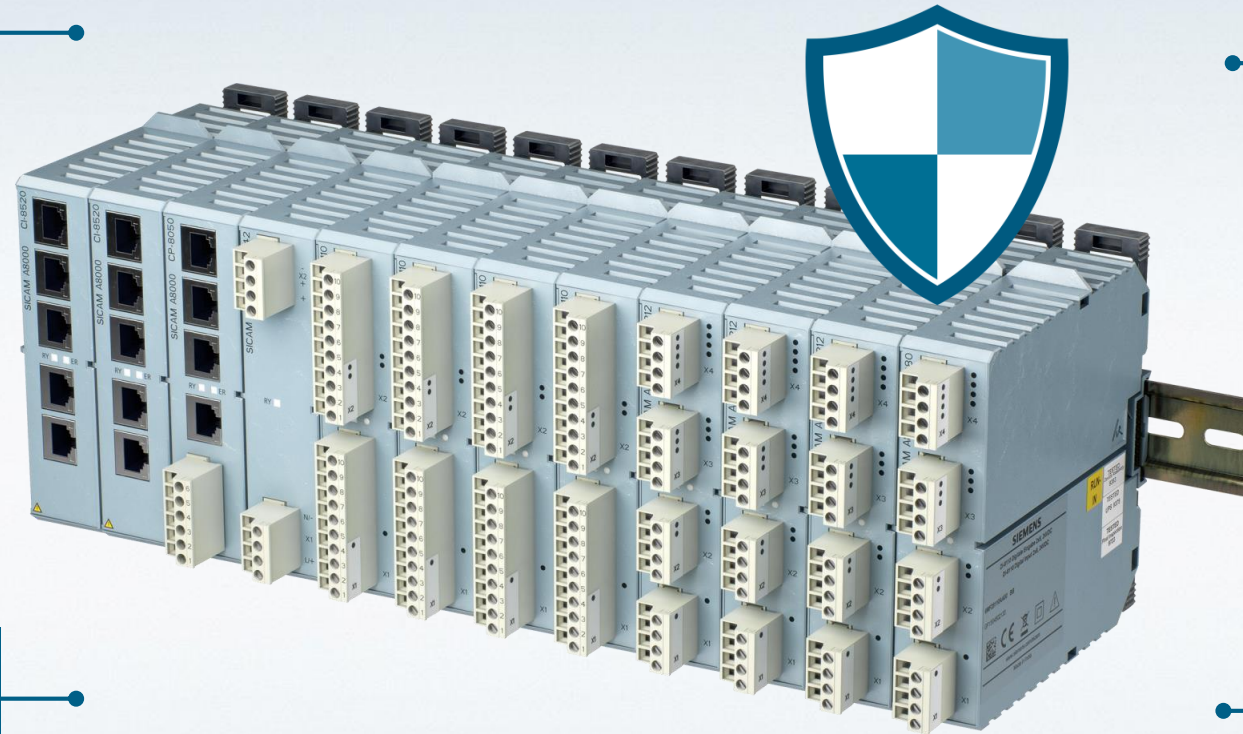
RBAC in accordance with IEC 62351-8 ensures that users may exercise only the rights that correspond to their assigned role

Authenticated NTP

Client & Server

LDAP Client

Certificate based LDAP authentication acc. to IEC 62351-8

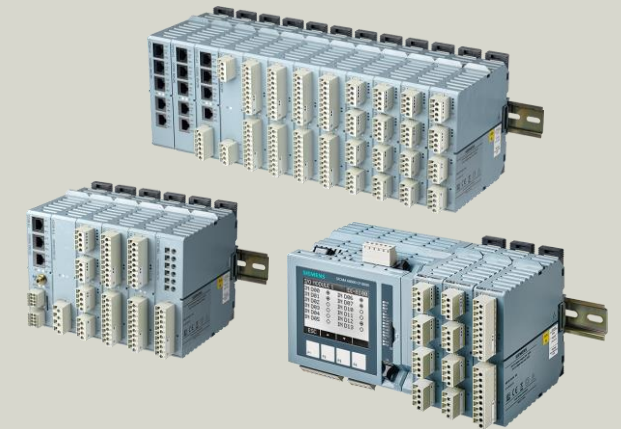


SICAM A8000 - universal platform allows versatile use



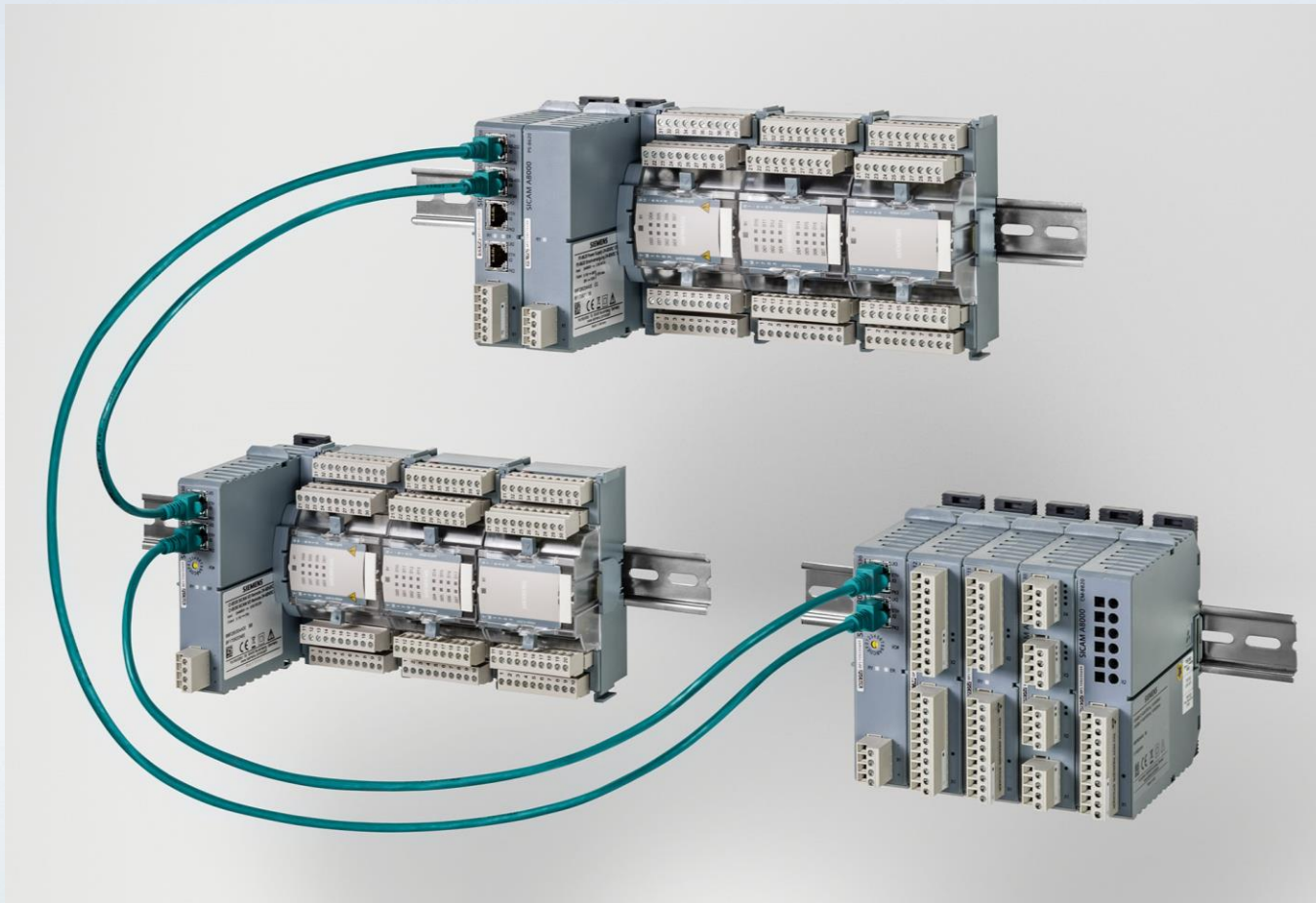
SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- Cyber Security
- **Retrofit**
- SICAM Device Manager
- Digitalization



SICAM A8000

Retrofit of SICAM MIC, EMIC and SICAM TM applications



Migration Scenario for SICAM I/Os

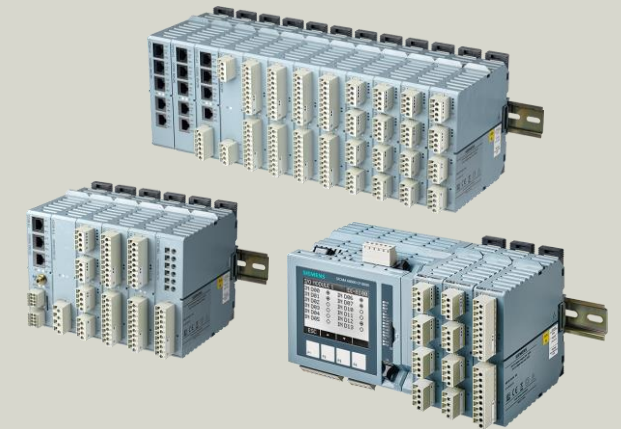
- SICAM A8000 CP-80xx support SICAM I/Os
- Coupling module is available
- PLC can be transferred via Engineering Tool
- Homogenous I/O rows needed

SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- Cyber Security
- Retrofit
- **SICAM Device Manager**
- Digitalization



SICAM Device Manager:

The intuitive engineering tool for SICAM A8000



Offline parameterization

Online connection with device
via SICAM WEB

Duplication of devices

automatization functions
via integrated CFC editor

Project and device management

For CP-8000/CP-802x
For CP-8050



Customer benefits

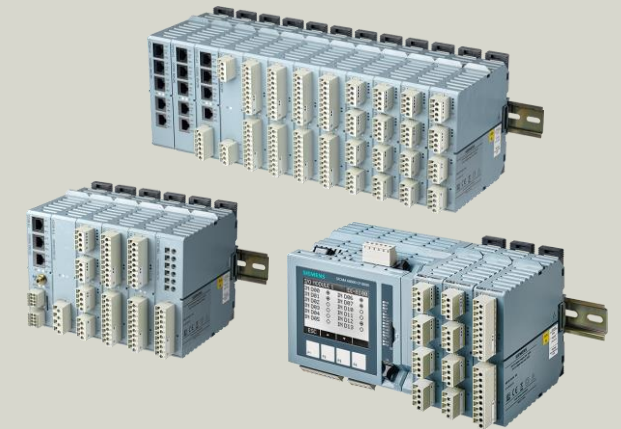
- Simple, clear management of projects and devices in folder structures
- Little time and effort needed for parameterization thanks to duplication of devices and automatic adjustment of specific parameters
- Full compatibility between SICAM WEB and Device Manager
- Look-and-feel correspond to SICAM WEB

SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- Cyber Security
- Retrofit
- SICAM Device Manager
- **Digitalization**



Vision for SICAM A8000: Edge computing platform for Digital Grid



Edge Computing

Run tailored Customer Apps on A8000

- Provide SDK to design APPs
- Integrate MATLAB/Simulink code
- Grid voltage or closed loop control for Micro grid
- Independent deployment and lifecycle

IoT Connectivity

Provide interoperable IoT connectivity based on standards



Upgrade Strategy

- Enable legacy devices with IoT
- Zero configuration change
- Highest degree of security
- Migration for telecontrol protocols

SIEMENS



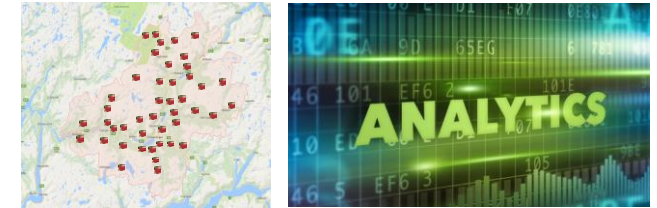
Automation IEDs

Sensors

Gateway



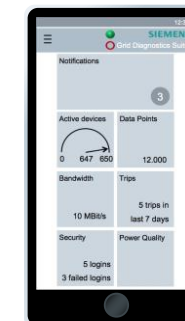
Cloud based Services



Provide data for central services to leverage investment in automation and monitoring

e.g. SICAM Navigator

Mobile Dashboard



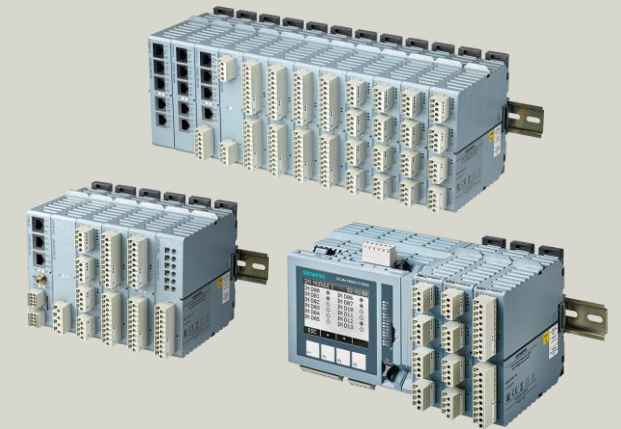
Provide data for mobile services to leverage investment in automation

SICAM A8000 - universal platform allows versatile use



SICAM A8000 Highlights

- New I/O Modules enable new applications
- CP-8050 is ready for data node applications
- Cyber Security
- Retrofit & Packing density
- SICAM Device Manager
- Digitalization



Contact



Michael Schachinger
Product Lifecycle Manager
SI DG SA&P PR AT-PLM

Siemensstraße 90
1210 Vienna

Phone: +43 664 88 55 67 56

E-Mail:

michael.a.schachinger@siemens.com

siemens.at/future-of-energy