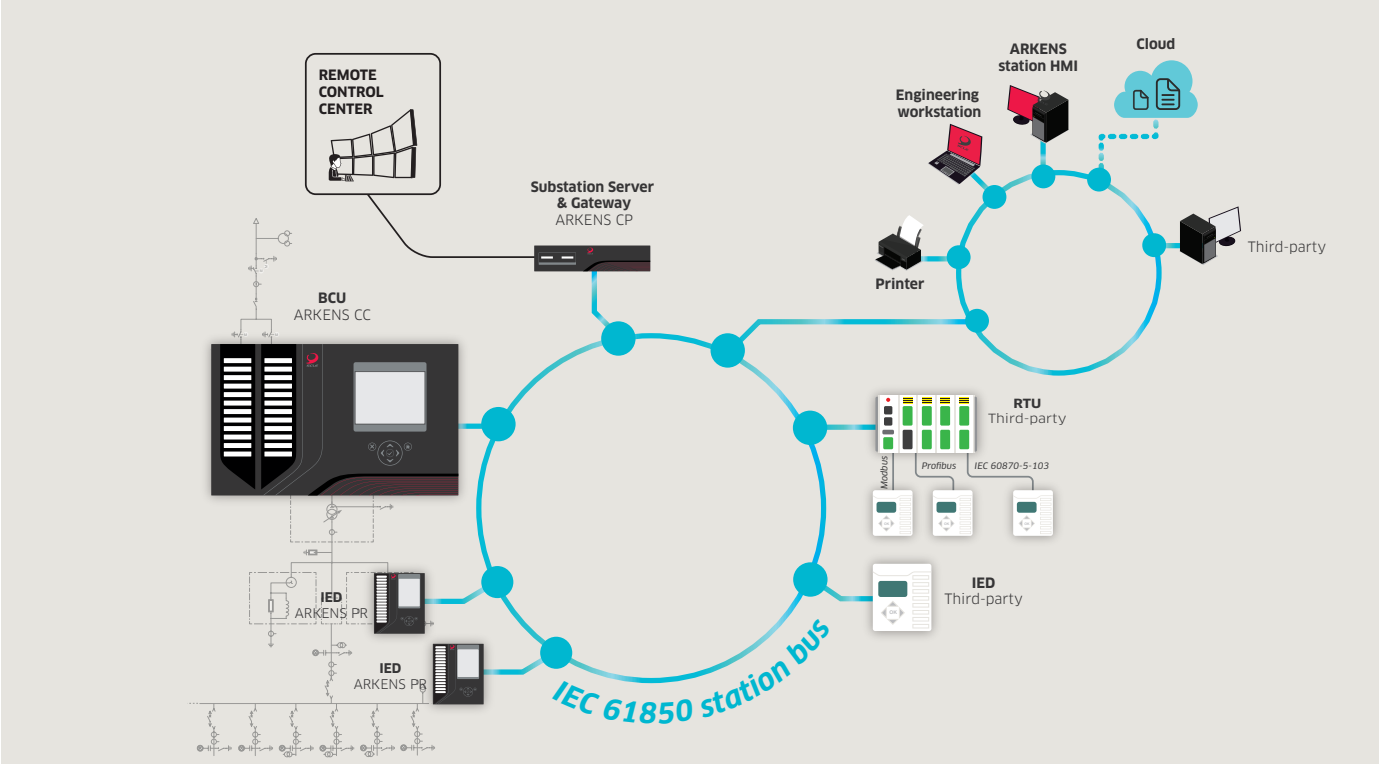
ARKENS CC

High voltage substation Bay Controller Unit
IEC 61850 & HSR / PRP

The ARKENS CC BCU is designed to carry out the control, command and local automation tasks of High Voltage substations thanks to its wired interface based on I/O modules and analog cards ; ARKENS CC is connected to the local IEC61850 station bus and to the remote control center thanks to its versatile and safe network interface. The HSR/PRP function ensures the highest system availability and data integrity with zero recovery time.

ARKENS CC integrated in your substation:



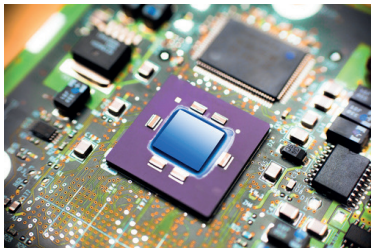
Configurable and programmable

The ARKENS Suite includes an IEC 61850 configuration tool.

ARKENS CC is a Programmable Logic Controller in which you can load your own automatisms, designed with an editor compliant with the IEC 61131-3 standard.

Sustainable

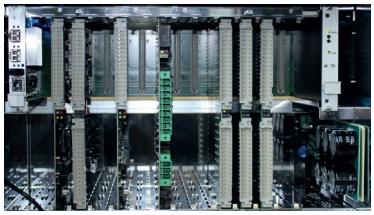
A long-term sustainable performance



The CPU module embeds a powerful dual-core ARM CPU combined to a FGPA which guarantee great sustainability to the equipment.

ARKENS CC embeds a hard real-time OS that ensures accurate information and a reliable decision-making process.

Modular



Its 6U format with 14 x 6U slot cards and 2 x 3U slot cards allows a great functional modularity thanks to different electronic modules available on order.

Rugged and secured

Long-term reliable and available in High Voltage substation harsh conditions

Wholly designed by SCLE SFE engineers, ARKENS CP meets high-level EMC requirements within a wide range of temperatures to ensure the best long-lasting and the highest reliability in harsh conditions.

Its 2 Fiber Ethernet ports allow a reliable access to the substation network in a High voltage environment.

Redundancy and cybersecurity

The HSR/PRP function ensures the highest system availability and data integrity with zero recovery time. The computer redundancy is available on request to avoid the loss of substation critical functions.

Cybersecurity: compliant with the IEC 62351 standard.

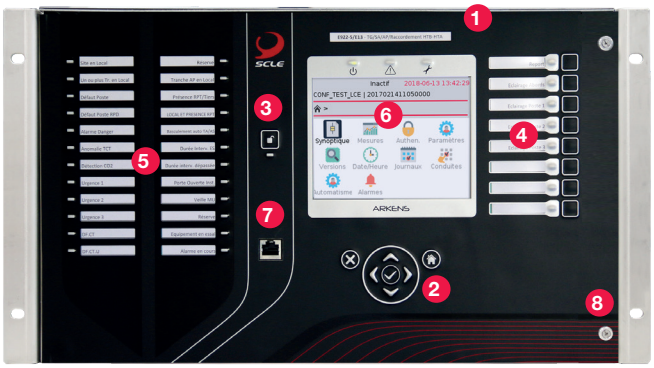
Versatile

ARKENS CC supports IEC 61850 GOOSE and MMS (client/server) communication protocol ; it can also communicate with other equipments via industrial field bus such as ModBus TCP, CAN OPEN, PROFIBUS and PROFINET.

The Ethernet maintenance link available in the front panel allows to connect thin client and use web browser to realise local operational tasks.

ARKENS CC is expandable: beyond the possibility of using 14 I/O modules, it provides CAN expansion connections. It allows to chain multiple ARKENS CC in a secure industrial fieldbus link.

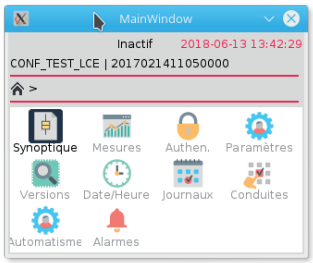
Customizable & user-friendly

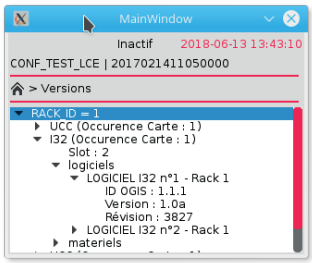


1. A 16-key keyboard
2. 7 navigation buttons
3. 1 on-site control button
4. 8 customizable buttons associated with 8 RGB LEDs
5. 24 LEDs (12 RGB and 12 monochrome) including 4 customizable
6. A 320 x 240 resolution LCD color screen / 18 bits (262 k colors)
7. RJ45 maintenance port
8. A rotating front panel for easy access to all cards

Key functions:

- Real-time event recording display
- Event log acknowledgment
- Rights management
- Measurement / Metering
- I/O cards status
- Control mode
- Free drawing
- Intuitive navigation





General features

HARDWARE CONFIGURATION	
CPU	Dual-core ARM Cortex-A9 SOC with FPGA
Memory	Application Memory: 4GB of NAND Flash ; RAM: 1GB DDR3 Cache L1: 32KB, Cache L2: 512KB, On-chip RAM: 256KB
Power Supply	48V or 127V
Interfaces basiques	2 substations network interfaces with redundancy on option: 2x RJ45 GB or 2x FO OM1 LC (100BaseFx or 1000Base-X(SX-LX), Others: -2 x RJ45 100MB. (1 Maintenance link and 1 permanent optional link) -1x USB2.0 for the connection of front panel display. -CAN2.0 expansion bus to chain additional I/O racks.
I/O Modules	2x 3U modules slot: - 1 CPU module - 1 Power supply module 14x 6U modules slots: - 32x Optocoupler 48VDC inputs module & 32x Optocoupler 127VDC inputs module for connections with circuit breakers - 24x Relay outputs module - 8x analogue Measurand inputs, 8 bits - 14x analogue Set point outputs, 8 bits

General features

PROTOCOLS	
IEC 61850 ed2	MMS Client, MMS Server, GOOSE Subscriber, GOOSE emitter
HSR/PRP	Network redundancy with zero recovery time
NTP/SNTP	Clock synchronisation
FieldBus protocols	Modbus RTU/TCP, CANopen, Profibus, Profinet, EtherCAT, EtherNet/IP, DeviceNet, (available on request)

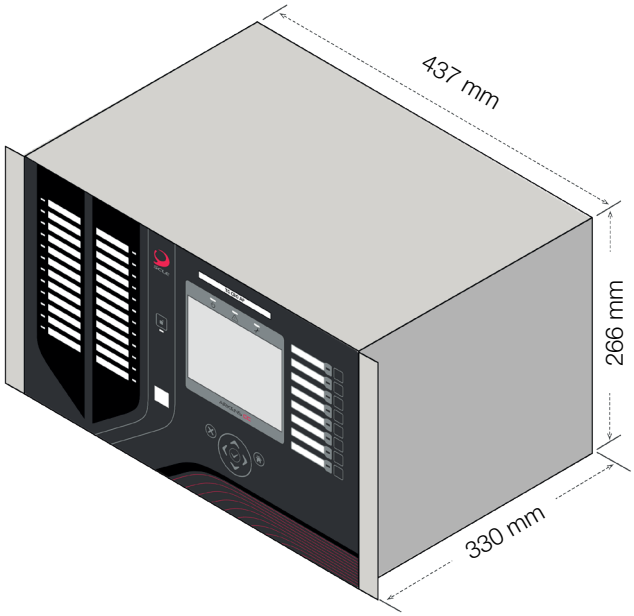
REAL-TIME CLOCK
Max. Error +- 50ppm over entire Temperature range with maintenance-free buffer, summer/winter time changeover, leap year correction

SUPPLY VOLTAGE	
Voltage range	+48 VDC + 20% / -20% or +127 V +20% / -20%
Max Power consumption	40 W

STANDARDS	
EMC immunity	IEC 60255-26, IEC 61000-6-2, /-4, IEC 61000-4-2, /-3, /-4, /-5, /-6, /-8, /-11, /-16, /-17, /-18, /-29,
EMC transient emissions	CISPR 11, CISPR 22 device class A
Electrical safety	IEC 60255-5 (Electrical Relays-Part 5)
Vibration	NF EN 60068-2-6 1g, IEC 60255-21-1, /-2, /-3
Shock	IEC 60255-21-2
Earthquake	IEC 60255-21-3
Environment	NF EN 60068-2-1, /-2, /-14, /-30

ENVIRONMENT	
Operating	-10°C to +55°C
Storage	-25°C to +70°C
Relative humidity	93% without condensation

MECHANICAL DATA	
Housing	L 437 mm x H 266 mm x Depth 330 mm
Mounting	19 ‘’ rack, 6U
Ingress protection	Front: IP 52 - Others: IP 32
Shock protection	IK 07



ARKENS CC

SCLE SFE - Headquarters
25, chemin de Paléficat - BP 30407
31204 TOULOUSE Cedex 2 - France
Phone: +33 (0)5 61 61 74 00 - Email: contact@scle.fr
www.scle-sfe.fr

Commitment to a sustainable performance