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# SICAM CMIC

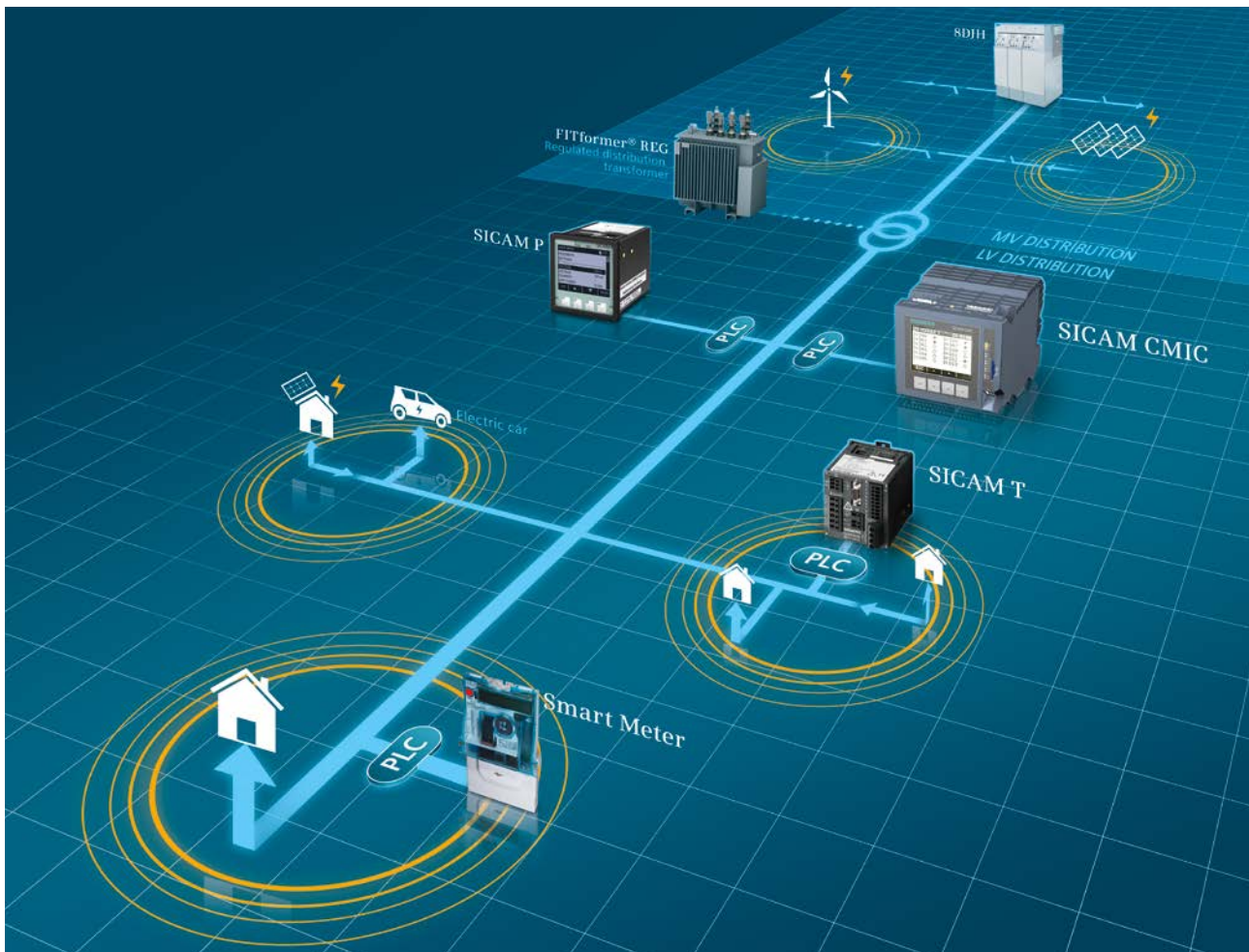
The smart cube for your distribution network

Answers for infrastructure and cities.

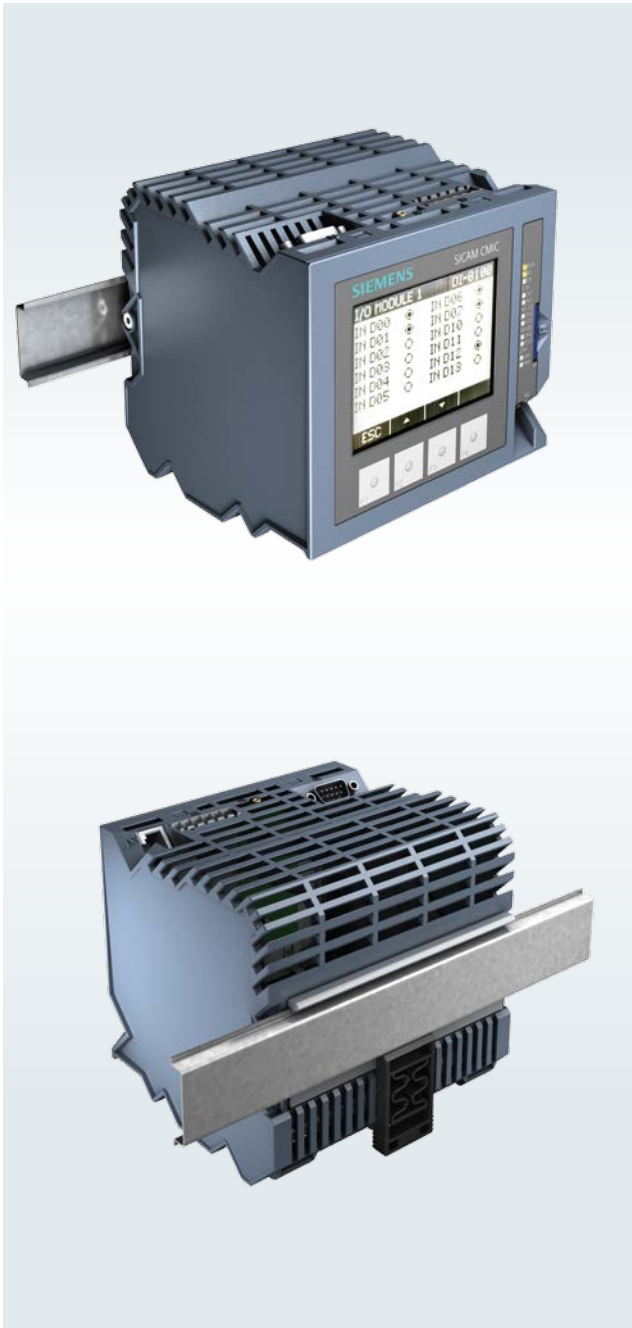
# Simply smart: The compact telecontrol unit SICAM CMIC compact micro

## Three-stage intelligence

Supervision/monitoring	<ul style="list-style-type: none"><li>● High availability</li><li>● Rapid fault location</li></ul>
Telecontrol	<ul style="list-style-type: none"><li>● Minimizing downtime</li></ul>
Load flow control	<ul style="list-style-type: none"><li>● Management of distributed infeeds</li><li>● Minimizing losses</li></ul>



# Outstanding performance: SICAM CMIC gives you a clear advantage

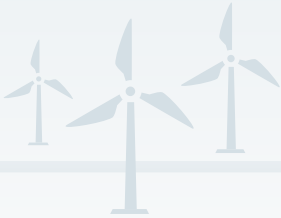


SICAM CMIC is a universal system. It is suitable for electrical distribution substations, gas distribution substations, hydropower plants, pipelines, railway power supplies, as well as in building protection or for alarm signaling.

Your advantages at a glance:

- **Link it up:**  
Coupling of additional devices thanks to integrated node functionality
- **Set it up:**  
Configuration, diagnostics and tests via a Web server; alternatively per SICAM TOOLBOX II
- **Be mobile:**  
Reduction in work load through remote maintenance, remote diagnosis and remote parameterization
- **Control faultlessly:**  
Interlocking and local control in compliance with IEC 61131-3 thanks to smart user programs
- **Keep everything under control:**  
Local operation and indication via a display and function keys
- **Make it easy for yourself:**  
Data storage on SD card;  
plug-and-play for start-up and service
- **Stay flexible:**  
Use of SICAM CMIC under all ambient conditions thanks to wide temperature range and extremely high degree of EMC

# Versatility across the board: SICAM CMIC makes it possible



## Future-proof and universal use

The economic demands on virtually all power supply processes are increasing: That's why it is imperative to make more intensive and more reliable use of existing operating resources. To do this, small substations are being automated to an increasing extent and integrated in modern, efficient control systems – for comprehensive and reliable system management. What this requires, in addition to straightforward monitoring functionality, are control functions and the integration of other equipment. SICAM CMIC provides all this and more – check it out for yourself.

## Small and rugged in any location

Ambient conditions often place high demands on supply substations. No matter whether they are transformer substations, utilities substations, or small telecontrol stations – they usually lack heating and air-conditioning systems to guarantee adequate ambient conditions. This is exacerbated by restricted space, which requires a very high degree of electromagnetic compatibility (EMC). SICAM CMIC is perfectly equipped to tackle these challenges. The device is suitable for broad application in the field, and can be deployed within a temperature range from  $-40$  to  $+70$  °C and where strict EMC requirements apply.

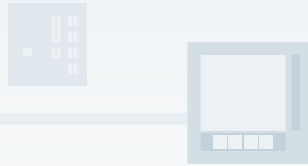
## Flexible and easy to maintain

The SICAM CMIC SD memory card has a number of functions. First of all, it provides data for parameterizing the SICAM device. This means that your accurate parameters are always available locally, which saves you the need to perform complicated loading procedures on the PC. Secondly, exchanging devices for service purposes is a simple plug-and-play process, because the configuration is transferred directly to the replacement device with the SD memory card. Together with the extensive remote-fault diagnosis options, this reduces downtimes to a minimum, from hours to a matter of minutes.





# Easy to operate: Keep yourself in the picture



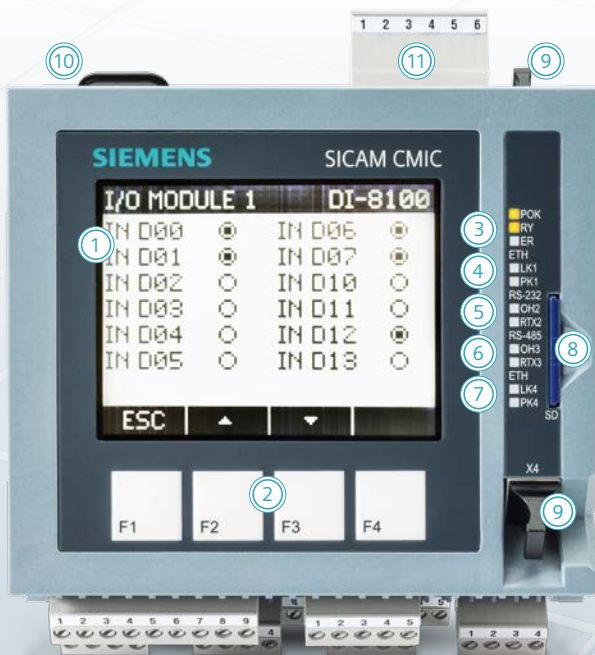
## Expandable and talented in multiple disciplines

Thanks to its node functionality SICAM CMIC is flexible and can even be used as a telecontrol substation with any form of communication to the control center. If the scope of signals of a SICAM CMIC should ever be insufficient, additional SICAM CMICs or other devices can be connected. Freely programmable user programs for local control, interlocking or regulating functions round out the versatile attributes of the SICAM CMIC.

## Communicative and always in contact

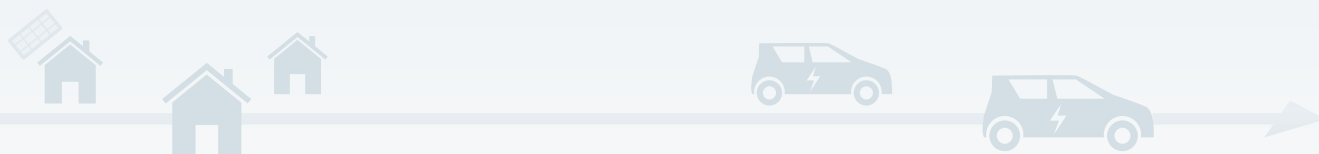
There are several possible means of communicating with the control center:

- **Joint communications**  
You can connect external communications modules via the V.28 interface for transmission in joint traffic. The standard protocols are freely selectable (IEC 80870-5-101, DNP3.0, Modbus RTU). Additional protocols are available on request.
- **Dial-up traffic**  
Various connection-oriented transmission media are supported as standard via dial-up traffic (analog, ISDN, GSM, TETRA).
- **LAN/WAN**  
In the case of communication via LAN/WAN networks, transmission is implemented either in accordance with IEC 60870-5-104 or DNP(i) – based on Ethernet TCP/IP.



- ① LC display
- ② 4 function keys
- ③ 3 LEDs for status (POK, RY, ER)
- ④ 2 LEDs for Ethernet
- ⑤ 2 LEDs for RS-232
- ⑥ 2 LEDs for RS-485
- ⑦ 2 LEDs for Ethernet
- ⑧ SD memory card
- ⑨ Connection for RJ45/Ethernet
- ⑩ Connection for RS-232 (underneath)
- ⑪ Connection for RS-485 (underneath)

# All sides of the cube: A short profile of SICAM CMIC



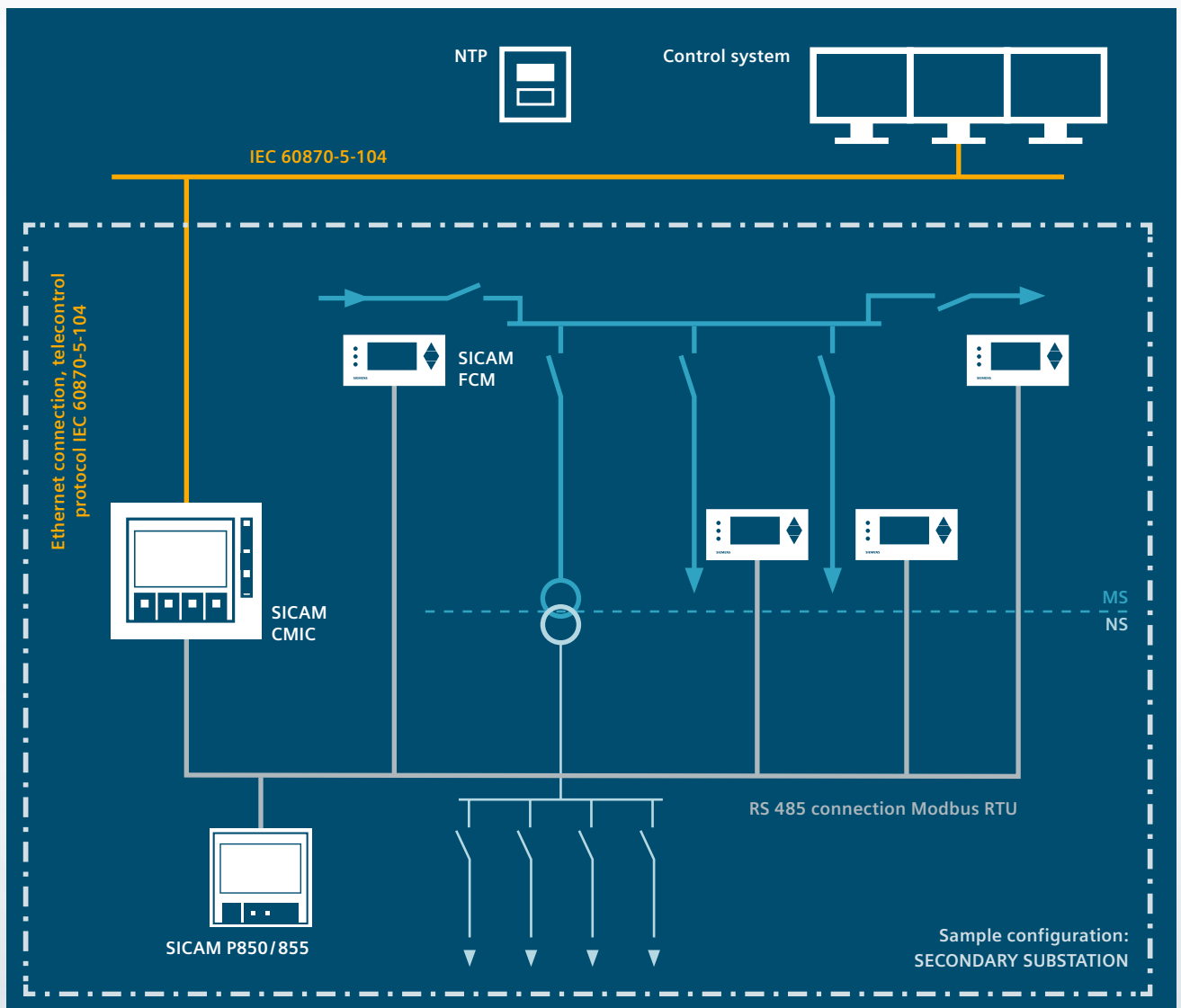
## SICAM CMIC: Portrait

- Maintenance-free, small compact device for mounting on DIN rail
- Local operation via 4 function keys and display
- 12 digital inputs for messages
- 8 digital outputs for commands
- Ethernet-LAN 10/100BASE-TX, 2 ports, RS-485 and RS-232/V.24 interfaces with the common protocols: IEC 60870-5-101/-103/-104, Modbus, DNP3.0, DNP(i), etc.
- Freely programmable user programs in accordance with IEC 61131-3
- Configuration via LAN, WAN
- Configuration via SICAM telecontrol center or SD card
- Simplified service thanks to SD card (storage of parameters and firmware)
- Tomorrow's security standard (BDEW White Paper conformity and integrated crypto chip)

## SICAM CMIC: Technical data

Digital inputs and outputs	<ul style="list-style-type: none"> <li>● 12 electrically isolated digital inputs (from 24 to 60 V DC) – 1 x 4 with common root and 1 x 8 with common root</li> <li>● 8 digital outputs – 4 x 2 outputs with one common normally-open contact each</li> </ul>
Communications interfaces	<ul style="list-style-type: none"> <li>● 2 x Ethernet-LAN TCP/IP 10/100BASE-TX for communication and engineering</li> <li>● 1 x RS-485 (electrically isolated), 1 x RS-232</li> </ul>
Protocols	<ul style="list-style-type: none"> <li>● IEC 60870-5-101 / 103 / 104, Modbus RTU, DNP3.0, DNP(i), NTP / SNTP, vendor-specific protocols on request</li> </ul>
Operating elements and displays	<ul style="list-style-type: none"> <li>● Power, Ready and Error LED, status LEDs of the communications interfaces</li> <li>● Display for local indication (128x96)</li> </ul>
Supply voltage	<ul style="list-style-type: none"> <li>● DC 18 – 72 V</li> </ul>
Internal real-time clock and external synchronization	<ul style="list-style-type: none"> <li>● +/-2 ppm, with maintenance-free buffering</li> <li>● Automatic summer / winter time changeover SNTP time server (Network Time Protocol)</li> </ul>
Electromagnetic immunity	<ul style="list-style-type: none"> <li>● IEC 60870-2-1, IEC 61010, IEC 60255-5, IEC 61000-4, EN 55022, CE mark</li> </ul>
Type of protection	<ul style="list-style-type: none"> <li>● IP20, Front IP40</li> </ul>
Ambient temperature	<ul style="list-style-type: none"> <li>● From – 40 to + 70 °C</li> </ul>
Housing, dimensions, installation and connections	<ul style="list-style-type: none"> <li>● Plastic, 128 x 124 x 123 mm (W/H/D)</li> <li>● DIN rail mounting</li> <li>● Screw terminals from 0.2 to 2.5 mm<sup>2</sup></li> </ul>

# Meets all requirements: The multitalented SICAM CMIC in operation



SICAM CMIC ordering designation		Description
Temperature range –25 to +70 °C	6MF2101-0AB10-0AA0	DC 24 – 60 V
Temperature range –40 to +70 °C	6MF2101-1AB10-0AA0	DC 24 – 60 V

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