

# SIEMENS

Ingenuity for life

## SICAM FCM

Feeder Condition Monitor – digital short-circuit indicator with measuring function

[www.siemens.com/distributionautomation](http://www.siemens.com/distributionautomation)

### More transparency in the distribution system

The key to continuously improving power supply is essentially in-depth knowledge of the relevant conditions of the local power supply network.

This is supported with smart devices which ensure unprecedented transparency.

Siemens offers a complete portfolio for network monitoring, power quality recording, fault recording, phasor measurement and system software application for this requirement.

### SICAM FCM – the finger on the pulse of your distribution network

SICAM FCM (Feeder Condition Monitor) is a short-circuit and ground fault indicator with direction indication which uses protection algorithms and low-power sensor technology in accordance with IEC 60044. As an alternative, SICAM FCM can also be connected with a capacitance type voltage tap enabling cost-efficient targeted fault detection in the cable network.

SICAM FCM offers the additional option to provide up-to-date measured values via the integrated Modbus RTU interface ensuring precise evaluation of the distribution network.

### Benefits

- Usable in grounded, isolated and compensated networks
- Integrated load flow direction indicator
- Directional short-circuit and ground fault detection
- Cost savings thanks to precise and fast fault localization
- Selective fault information with direction indication used as a basis for "self-healing" applications



SICAM FCM

- Service restoration times in the range of minutes or seconds (depending on the primary equipment) facilitate minimum loss of network fees/end consumer fees
- Up-to-date measured values for operation management and planning support targeted use of investment resources in network planning and network expansion
- Direct voltage measurement in the low-voltage network
- Use of low-power sensors and high-quality measurement equipment with a high measuring accuracy
- Alternatively: Version for connecting to capacitive voltage detectors
- Flexible ground current measurement down to 0.4 A
- Remote configuration via SICAM A8000 and Modbus
- Self-testing function of communication connection

SICAM FCM is the first short-circuit indicator which uses sensors in line with the IEC 60044-7 I-8 standard. This enables high-precision measurements without calibration and adjustment to the primary variables.

# Intelligent and transparent

## Device characteristic

### Communication

- Interface RS485 incl. Modbus RTU communication for all data and remote configuration / FW update, PC programming as an alternative

### Signalization

- Display for visualization of current measured values or fault information in the distribution network, 4 function keys
- 3 LEDs to signal the operating mode
- 2 binary outputs

### Measured variables

- RMS measured values
- Phase voltages and currents, ground current, power system frequency and  $\cos\phi$  phase angle, active power, reactive power and apparent power
- Energy meters
- Minimum and maximum values for all phase currents from 15 minutes to one year as a slave pointer function

### Auxiliary voltage

- AC 230 V
- DC 24 - 110 V
- Battery with service life > 15 years

### Time synchronization

- Time synchronization via Modbus RTU

### Inputs

- 3 inputs for alternating voltage, settable for either  $100V/\sqrt{3}$ , low-power sensors with  $3.25V/\sqrt{3}$  (in accordance with IEC 60044-7) or 3 direct inputs for AC 230 V
- Alternatively: 3 inputs for connection to LRM voltage detective systems (as per IEC 61243-5)
- 3 inputs for alternating current low-power sensors 225mV at nominal current (as per IEC 60044-8), the nominal primary current can be configured from 50 A to 1000 A in SICAM FCM; optional configuration of current input L2 for sensitive ground fault detection with low-power sensor 225 mV @ nominal current (as per IEC 60044-8), the nominal primary current can be configured in SICAM FCM
- Alternatively: Inputs for conventional transducers 1 A / 5 A via adapter
- 1 binary input

### Temperature range

- From -40 °C to +70 °C

### Housing

- Polycarbonate, for panel flush mounting
- Dimensions: 96 x 48 x 109.5 mm (W / H / D)
- Protection class: Front IP40, rear IP20



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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit ([www.openssl.org](http://www.openssl.org)), cryptographic software written by Eric Young ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)) and software developed by Bodo Moeller.