

SIEMENS

Ingenuity for life

SICAM FSI, SICAM FCG

Fault Sensor Indicator, Fault Collector Gateway –
Guardian for Your Overhead Line Networks

www.siemens.com/distributionautomation

Description

Utilizing the full range of benefits of distribution automation in overhead line networks requires reliable locating and signaling of earth faults and short circuits in overhead line networks. With SICAM FSI (Fault Sensor Indicator), Siemens now offers a fault detection device for MV overhead line networks.

SICAM FSI is available in 2 versions:

- 6MD2314-1AB10 - without communication:
The faults are signaled directly at the device by LEDs. Depending on the fault state, a specific flashing light is generated.
- 6MD2314-1AB11 - with communication:
In addition to local LED display, earth faults and short circuits are transferred to a gateway (SICAM FCG) via a secured radio connection. SICAM FCG (Fault Collector Gateway) in turn establishes the connection to a higher-level control center via GPRS using the standardized telecontrol protocol IEC 60870-5-104 or DNP3.0 TCP/IP. In addition, the SICAM FCG can also send SMS directly to a field service engineer's mobile phone to attend the situation faster locally. Alternatively, the SICAM FCG can also communicate to the FliC Cloud using the XMPP protocol and the faults can be visualized on FliC Application installed on a Smartphone.

Benefits

- High availability - reduced downtime
- Quick fault detection – exact fault localization and information to maintenance teams
- High degree of sensitivity, the measurement starts @50A – reliable detection of faults



- Self-sustained sensors reduce the energy consumption of the device – enhancing the service life of the supply battery in the device (battery life: 10 years)
- Own security key and IPsec encryption for data exchange with SICAM FCG – highest protection against unauthorized access (intruders)
- Quick and easy device configuration with QR code on SICAM FSI and a web browser rather than DIP switches – high degree of user-friendly configurability
- Maintenance free design of the device – with the exception of a battery change after 10 years, the SICAM FSI is absolutely maintenance free. The large-size display of the initial commissioning year on the device enables operating personnel to see when the battery is due for changing while remaining on the floor
- Various flashing light frequencies depending on fault type – quick and precise fault diagnosis for the maintenance team

Reliable and efficient

Application Area

Medium voltage overhead line networks 3.3 kV to 66 kV
50 Hz/60 Hz.

SICAM FSI

Fault Detection

- Trip threshold setting range 75 A to 1500 A
Inom setting is user configurable from 50 to 500 A enabling closer co-ordination with the upstream protection system for the network. Trip time is user configurable between $1.5 \cdot I_{nom}$ and $3 \cdot I_{nom}$ (in steps of $0.5 I_{nom}$)
- DI trigger setting 5 A to 160 A
The rate of change of current (DI) setting is user configurable in steps of 5 A up to 80 A, 120 A, 160 A
- Inrush restraint
Settable time delays for inrush conditions or step changes in load conditions
- Presence/absence of voltage detection for fault confirmation

Configuration

- The SICAM FSI – 6MD2314-1AB10 - can be parameterized using “FSI Web Configurator” software
- In addition to the above, the SICAM FSI - 6MD2314-1AB11 - can be parameterized via the SICAM FCG over the wireless interface

Message acknowledgement

User configurable:

- By magnet
- Automatically at system voltage restoration
- Automatically over a specified time (user configurable time)
- Remotely with an acknowledgement signal from the control center

Auxiliary voltage

- Battery (3.6V) service life approx. 10 years

Temperature range

- -25 °C to $+70\text{ °C}$

Housing

- Polycarbonate, UV-resistant
- Protection class: IP65

Mounting

- The SICAM FSI is clamped onto the overhead line via the hotstick with shotgun

SICAM FCG

Fault sensors

- Overhead line: 9 SICAM FSI via short range RF Radio (within a 100 m communication range)
- Cable: 3x SICAM FPI / SICAM FCM via Digital Inputs

In-/Outputs

- 3 DI DC 24-250 V, 3 DI DC 12 V
- 3 DO DC/AC 250 V

Communication

- IEC 60870-5-104
- DNP3.0 TCP/IP
- XMPP
- SMS

Configuration

- QR Code and Web-Browser

Auxiliary voltage

- DC 12 V, 3W



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For all products using security features of OpenSSL, the following shall apply:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (www.openssl.org) and cryptographic software written by Eric Young (ey@cryptsoft.com).