New Direction Indication LEDs

ENERGY AUTOMATION PRODUCTS

SICAM FCM plus - LPIT/VDIS

Upgrade your medium-voltage grid – precision, quality, transparency

siemens.com/sicam-fcm

The key to continuous improving of power supply is an indepth knowledge of the relevant conditions of the local power supply network. This is supported by IEDs 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 plus - LPIT/VDIS

SICAM FCM plus (Feeder Condition Monitor) is a multifunctional short-circuit and earth fault indicator with fault direction display. The device offers additional functions for providing real-time measurement data via the integrated Modbus RTU interface,
thus enabling precise evaluation of distribution grid data.

In medium-voltage networks (up to 40,5 kV),
the SICAM FCM plus is used for resonant/compensated, isolated, and solid-ground neutral point systems.
Measurements are performed using LPITs for current and voltage according to IEC 61869-10 and IEC 61869-11.

Take advantage of these benefits

- Connection of LPITs (Sensors) for current and voltage, alternativly voltage input via SICAM VDIS
- Correction factors (CF) to improve the overall accuracy of the system (LPIT + FCM plus)
- Front-mounted USB-C interface for configuration and firmware updates
- Suitable for grounded, isolated, and compensated grids
- Integrated load flow direction indicator
- LED direction indication
- Selective fault information with direction indication used as a basis for „self-healing“ applications
- Cost savings thanks to precise and fast fault localization, resulting in fast recovery times (depending on the plant equipment)
- Up-to-date measured values for operational management
- Self-test mode function for remote communication connection
- Maintenance free – no battery, fault status indication buffered by super capacitor

SIEMENS

Device characteristics

Salient features

- Front USB powered device, to configure and firmware update
- Front LED direction indicator
- Current and voltage sensing via Low Power Instrument Transformers (LPITs)
- Adaption of correction factors (CF)
- Wide measurement range with accuracy of 0.5 % class
- Minimum 8 hours of fault status indication by super capacitor during auxiliary supply failure

Direction features

- Directional and non-directional phase fault and earth fault detection (ANSI 67/67N/67Gs)
- Multi-stage phase fault (ANSI 50/51) and earth fault (ANSI 50N/51N) as well as sensitve earth fault detection (0.4A onwards ANSI 50Gs/51Gs)
- Earth fault detection methods supported are: Vector, cos (ϕ) and sin (ϕ), Pulse location, intermittent and directional transient methods
- Inrush detection and blocking (ANSI 81HBL2)
- Open-phase detection (ANSI 46BC))
- Multi-stage under/over-voltage and over current alerts
- Supports two setting groups
- Under and Overpower detection (ANSI 32P)
- Fault validation logic with direction detection and reset, based on configurable network voltage and current absence
- Temporary and permanent fault identification

Archiving and logging

- Fault information - 50 faults are stored as event logs
- Trailing pointers function for measured values of current, voltage and power - Imin/Imax, Vmin/Vmax and Pmin/Pmax for 15/30/45min/1h/1d/30d/1Y
- Self-monitoring and supervision - watchdog functionality to indicate device health status

Auxiliary voltage

- AC 230 V
- DC 24 V to 250 V

Analog inputs

- 3 inputs for alternating voltage selectively adjustable for 10000:1, low-power sensors with 3.25 V/√3 (according to IEC 61869-11) or for connection to low resistance-modified (LRM) voltage detection systems (in accordance with IEC 62271-213)
- 3 inputs for AC low-power sensors with 225 mV at rated current (according to IEC 61869-10)

Measured variables

- RMS of phase voltages and currents, power system frequency and cos (ϕ) phase angle
- Active, reactive, and apparent power
- Power Meter - Active and reactive energy, import and export

User interface and display

- Display for visualization of measured values, derived values, event fault log and fault screen
- 4 function keys for HMI navigation, information, and configuration
- 3 LEDs to indicate the operating mode – Fault, Com and Run
- 2 LEDs to direction indication

Binary inputs/outputs (user configurable)

- 6 binary inputs
- 4 binary outputs

Device communication and protocoll

- Back side: Serial interface on RS485 - Modbus RTU for data communication and remote configuration
- Front side: USB-C interface - for configuration/parameterization and firmware upload

Time synchronization

- Via Modbus RTU

Operating environment

- Temperature range: -40 °C to +70 °C
- Altitude: maximum 2000 m above sea level

Housing

- Polycarbonat casing, suitable for panel flush mounting
- Dimensions: 96 mm x 48 mm x 120 mm (W / H / D)
- Protection class: Front IP40, rear IP20

Siemens AG
Smart Infrastructure
Electrification & Automation
Mozartstrasse 31c
91052 Erlangen, Deutschland

Siemens Industry Inc.
3617 Parkway Lane
Peachtree Corners, GA 30092
United States