EARTH FAULT INDICATOR

SICAM EFI

Detects earth faults in medium voltage cable grids

Application and mode of operation

The SICAM EFI was developed especially for the detection of earth faults in medium voltage cable networks. It detects and indicates (locally and remotely) earth faults in radial or open ring cable networks - solidly grounded or low-resistive grounded. This is made possible using an external current sensor.
You can choose between 4 types of sensors with different diameters and a sensor cable length of 3.5 m, 5 m, and 16 m. The split core sensors allow installation even with an already installed medium voltage cable. So, you can optimally adapt the SICAM EFI to your needs and use it, for example, for retrofit measures.

The current sensor transmits a voltage signal via the signal cable to the SICAM EFI, which evaluates it continuously. If the current value exceeds the set threshold beyond the response time, the SICAM EFI detects an earth fault and the red LED starts flashing. Few variants have optional FLAG indication as well which turns to red color when a ground fault is detected.
Depending on the product variant, threshold value can be set from 25 A to 100 A, or 25 A to 240 A.

SICAM EFI signals faults via LEDs, flag, binary output, and an optional signal lamp.

Product features

- Dual power supply with AC/DC power supply and battery. Due to the battery, the device is self-sustaining and maintains its functionality even after the main power supply is tripped
- Complies with IEC 61010-1 safety standard and IEC 62689-1 standard for short-circuit indicators
- Easy setting via DIP switch
- Configurable binary outputs, for remote messages to SCADA via RTU in the case of faults or for diagnostics
- Local indication: 1 flag and 1 red LED for ground fault, 1 yellow LED for battery charge level, 1 green LED for AC/DC power supply.
- Several reset functions, auto reset (via time stages), remote reset via binary input or automatic reset on recovery of auxiliary voltage, net current or via AC/DC Binary inputs
- Extended battery life with enhanced power management enabling more than 2,000 hours of operation under fault conditions (flashing)
- Sensors with simple locking mechanism for perfect retrofitting to the MV cables
- Sensor cable available with 3.5 m, 5 m, or 16 m length
- Built- in restraints to prevent fault detection due to inrush currents & auto reclosure operations using time muting logic

Your benefits with SICAM EFI

- Easy to operate and install earth fault indicator for medium voltage cable networks
- Current sensors are IP68W compliant and apt for outdoor use
- SICAM EFI suitable for remote surface mounting

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Device characteristic

Application

Medium-voltage cable distribution systems up to 36 kV (± 10%), 50 Hz/60 Hz

Signalization

Fault indication via LEDs

- 1 flag red – earth fault
- 1 LED red – earth fault
- 1 LED yellow – battery charge level when push button is pressed
- 1 LED green – auxiliary voltage available

Binary out- inputs

- 1 Binary output for external signal lamp earth fault
- 1 Binary output earth fault
- 1 Binary output battery monitoring
- 2 Binary inputs: 1x AC Reset-input, 1x DC Reset-input
- 1 Binary input remote test / reset

Sensor details

10% accuracy each

- Sensor type 1: earth fault current 25 A to 100 A
  for 3 core cable applications
  sensor diameter 150 mm
  sensor cable length 3.5 m, 5 m
- Sensor type 2: earth fault current 25 A to 240 A
  for 3 core cable applications
  sensor diameter 140 mm
  sensor cable length 16 m
- Sensor type 3: earth fault current 25 A to 240 A
  for 3 single core cable applications
  flexible sensor diameter 220 mm to 340 mm
  sensor cable length 16 m
- Sensor type 4: earth fault current 25 A to 240 A
  for 3 core cable applications
  sensor diameter 120 mm
  sensor cable length 16 m

Auxiliary voltage

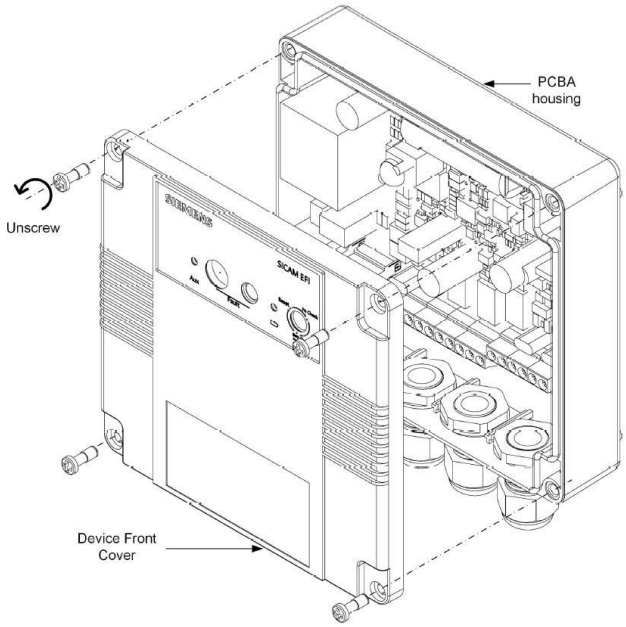
- Battery for 2,000 hours flashing time,
  service life of 15 years min
- 110 – 230 V AC (± 20%)
- 9 – 38 V DC

Temperature range

- From -30°C to +75°C

Housing

- Polycarbonate housing for surface mounting,
  optional L-clamp for panel mounting arrangement
- Dimensions: 140 x 150 x 41 mm (W / H / D)
- Protection class: SICAM EFI IP65W, sensor IP68W



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