LOK 30-GSM

Fault Indicator with Remote Fault Signaling via GSM

GENERAL DESCRIPTION

LOK 30-GSM is a fault indicator for medium-voltage distribution lines, with in-built communication equipment for the remote signaling of detected faults. Fault detection is based on the measuring the change of magnetic field, generated by a fault current in the MV line.

The alarm signal that the indicator generates after having detected a fault is transmitted in the form of SMS messages through the public GSM network to a predetermined subscriber / receiver. SMS contains the devices' name, event description and time stamp (date and time of event occurrence). Other communication protocols on request (IEC 60870-5-104, DNP 3.0).

The difference between the fault indicators **LOK 30-GSM** and **LOK 20** is that in the former's casing besides fault-detection electronics also a communication control unit and a GSM module are built. The control unit communicates with the detection unit and with the GSM module, generates alarm messages and stores information about the faults detected (date, hour). The GSM module is an industrial modem for the transmission of data, messages, and speech through the GSM network. Communicational parameters of the device can be confugured either locally or remotely by means of PC software included in the set. Health-check of the device is performed once a day or can be manually triggered. It comprises detection performance, battery state (OK, Bad) and GSM signal quality. Health-check results are indicated localy by falsh light and on the LCD, and remotely with SMS messages

Except solar panel, all the components of the device are built into a common water-proof aluminum casing. On the outside, the casing looks the same as the one of LOK 20, except that there is a GSM antenna mounted on it. The indicator is powered by a battery, which is charged by solar cells. In this way, enough energy is provided to the battery, regardless of the number of fault indications.

TECHNICAL SPECIFICATIONS

Range of application:

- medium-voltage overhead distribution network: 4 ... 35 kV , 50 Hz *
- impedance earthed system, solidly earthed system, isolated neutral system
- wooden, concrete, metal pole
- earth-fault detection independent of conductors' geometric arrangement

Fault detection:*

- Fault type: - Earth fault
  - Short circuit
- Earth-fault current detection sensitivity: adjustable: from 2 to 30 A in more than 10 steps
- Fault duration: - 80 ms ... 5 s
- Inrush restraint:** - 5 s *
- Fault discrimination: - two faults separated by a time period of less than 0,6 s are considered to represent one fault
  - two faults separated by a time period of more than 0,6 s are considered to represent two faults

Setting the distance from the conductors:
By means of a jumper: 4, 5, 6, 7, 8, 10, 12 and 14 m

Fault indication: *

- Flashlight, indication duration: 2 hours or until interrupted by means of the IR remote control or 10 seconds after normal line-operation has been detected
- Fault counter (LCD display)
- SMS messages

Function test (self-test):

- by means of the TEST key within the indicator casing
- by means of a IR remote control, maximum distance: 10 m at no direct sunlight
- periodically every 24 h,
- the test results (device and battery status, GSM signal quality) are signalized via the flashlight, LCD and generated SMS message.

Communication:

- GSM modem: dual band 900/1800 MHz, output power: Class 4 (900 MHz), Class 1 (1800 MHz)
- GSM antenna attached to the indicators' casing
- real-time clock with battery backup
- RS232 interface for setting of parameters by PC application (provided with device)
- SIM Card holder located on the communication board
- SMS text (devices' name or location and fault description) can be defined by the user

Power supply:

- lead battery 6 V / 3,5 Ah @ 20° C, sealed, maintenance-free
- battery charging via the solar module, temperature compensation included
- battery lifetime: 8 years

Operation temperature range:
-40° C ... +70° C

Mechanical construction:

- aluminum indicator-casing, protection level: IP65, physical dimensions: 260 x 160 x 90 mm
- indicator's carrier plates with screws
- solar module: P_n = 3,6 W, physical dimensions: 310 x 310 x 25 mm
- solar module carrier with screws

Standards:

- device: EN 61000-6-4, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-8, CE
- modem: EN 301489-7, R&TTE, GCF, FCC, PTCRB, IC, e-mark, local approvals an network operator certifications
- RoHS

Packing:
Total weight of the package approx. 5 kg, dimensions: 29.5 dm^3 (L x W x H: 380 x 370 x 210 mm)

* Parameters can be customized ** Optionally on request.