Fault passage indicator for overhead network

Easergy Flite 110-SA

Flite 110-SA adjusts to the network voltage and frequency

Using fault detectors makes it easier to locate faults on distribution networks.

The detector must adapt to the electrical network characteristics and be perfectly visible to allow maintenance teams to quickly detect faulty network sections.

Flite 110-SA is configurable on site. An overhead fault detector must be coordinated with the upstream protection system whose trip threshold can vary according to its position on the MV network.

Flite 110-SA indicates permanent and transient faults with the same indication light intensity. A fault detector always indicates permanent faults, but utilities companies often also want to find transient fault (a fault is considered to be “transient” when the upstream protection device eliminates the fault during its reclosing cycle).

The indicator light is visible from a 360° angle.

Product at a glance

- Detects both short-circuits and low current earth faults
- Self adaptation to network voltage and frequency
- Highly visible red flash light
- Indicates both permanent and transient faults
- User adjustable

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Fault Detection

Easergy Flite 110-SA is fitted with two sensors, one measuring the magnetical field (image of the current) and one measuring the electrical field (image of the voltage)

Installation with shotgun hotstick

PE55563

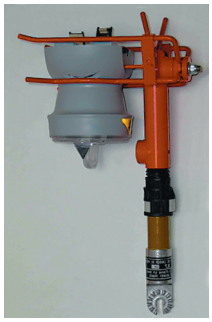
1 - Fixing the unit on the hook

PE55562

2 - Pushing the unit onto the line

Installation tool with SICAME adapter

PE55564



Operation

Flite 110-SA is hooked directly onto the line without any specific tooling.

When installed on a live conductor, Flite 110-SA automatically adapts to the network voltage frequency, then activates the fault detection function.

Fault types: a fault is expressed either in terms of the exceeding of an absolute current threshold (Imax, phase-phase fault), or a variation in current over a given time (di/dt, phase-earth fault).
Flite 110-SA indicates both transient faults and permanent faults. The transient fault detection function can be disabled.

Fault confirmation: in order to avoid any indication errors, faults are confirmed by the voltage absence after the upstream protection device has tripped.

Inrush current filter: when the line is energized, before activation of fault detection, a time delay filters inrush currents due to transformer magnetization.

Resetting: permanent fault indication is automatically cleared when voltage returns to the MV line or following a time delay. Flite 110-SA checks that the MV supply has stabilized before resetting itself.

Change in transient faults: if a permanent fault occurs whilst the device is already indicating a transient fault, the flashing automatically changes from transient to permanent, thus enabling maintenance staff to deal with faults according to their priority level.

Installation

Flite 110-SA is clipped on a live conductor:

- Either with a standard shotgun hotstick,
- Or with a hotstick fitted with a universal adapter and a Flite 110-SA installation tool

(see references below)

Designation	References
Flite 110-SA	59938
Replacement lithium battery	59982
Installation tool with SICAME adapter (maximum value of protection : 220 KV)	59953
12 meter telescopic hotstick (20 kV insulated)	59955
Magnet for Flite 11x	59992

Characteristics

Application	
Distribution network voltage	7 kV (min) to 36 kV (max)
Power frequency	50 Hz and 60 Hz
MV neutral arrangement	Impedant, solidly grounded
Conductor diameter	7 to 42 mm
Fault detection - parameters	
di trigger setting	6-12-25-60-90-120-160 A-Off
Imax trigger	100-200-500-800 A
Transient faults detection	On - Off
dt value for di/dt operation	30 ms ± 10 ms
Inrush restraint duration	3 s
Loss of voltage condition	U < 45 % Un
Fault confirmation	Voltage drop within 70 s after fault detection
Reset (permanent faults)	
Indication	Voltage presence during 70 s
Light power	2 - 4 - 8 - 16 hours
Manual reset	by magnet
Fault indication	
Signalisation	Red flash light
Light power	40 lumens
Visibility angle	360°
Flash period for permanent faults	1 flash every 3 s (0 to 2 h)
Flash period for transient faults	2 flashes every 12 s (0 to 8 h)
Standard total flash duration	400 hours
Power supply	
Lithium battery life expectancy	Up to 8 years (1)
Environment	
Operation temperature	– 40 °C to + 70°C (-40°C to +85°C according to ANSI 485)
Storage temperature	– 40 °C to + 85°C
Protection level	IP 56 IK 07 (2)
Mechanical	
Dimensions	167 mm (length) x 126 mm (width)
Net weight	510 g
Wind resistance	Up to 150 km/h
Standards	
Short-circuit withstand	25 kA/170ms (IEEE Std 495) and 12,5 kA/1s (IEC 62271-1)
Dielectric test	IEC 62271-1
Vibrations and shocks test	IEC 60068-2-6, IEC 60068-2-27
EMI/EMC immunity	IEC 61000-6-2, ETSI EN 301-489-3, IEC 61000-6-4 (CISPR22, FCC Part 15 B)
Salt Spray & Humidity tests	IEC 60068-2-52, IEC 60068-2-11, IEC 60068-2-78 and IEC 60068-2-30
Temperature	IEC 60068-2-1, IEC 60068-2-2 and IEC 60068-2-14

(1) *This lifetime corresponds to standard situation. The lifetime depends on the temperature and the total duration of flash.*
(2) *IPx6 has been tested 15 mn instead of 3 mn requiered by the standard*

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