

Easergy Range - Flite 116-SA

Communicating fault passage indicator for overhead networks



Product at a glance

- Remote monitoring of overhead lines (currents, faults, etc.)
- Detects both short-circuits and low current earth faults
- Highly visible 360° red flashing light
- Easy installation (spring grips)
- Remote setting

Fast location of faulty circuits

The location of a fault along an overhead MV network by mean of local fault passage indicators is time-consuming (traffic jam, hard to access network sections, long outgoing feeders).

A solution is to use (in addition) our remotely indicated Flite 116-SA fault passage detector. The payback is quick because the outage time being decreased, the reduction of non-distributed energy is important, and the quality is improved.

Principal

Each of the Flite 116-SA clipped onto the MV line communicates via a low power licence-free radio with a G200 RTU mounted on the pole. The G200 RTU is able to manage the communication with up to 9 Flite 116-SA (3 MV lines) and transmits information to the SCADA using open protocols such as DNP3, IEC 870-5-101 or Modbus.

Flite 116-SA

Fault Detection and communication

G200-Flite 116-SA radio link



G200 installation on the pole



G200 unit with solar panel

Installation tools



Installation with SICAME tool



Installation with shotgun hotstick

Communication with G200 RTU

- Frequency: 915 MHz (918-919.12 MHz) or 866 MHz (865.65-866.89 MHz).
Other frequency : please ask. Frequency spread spectrum used to avoid radio interferences
- Secured protocol: enabling message correction and repetition
- Max. distance : 100 m (with clear line of sight)
- Capacity: up to 9 Flite 116-SA.

Fault detection

(same characteristics as Flite 110-SA)

- Self-adaptation: Flite 116-SA adjusts to the network voltage and frequency
- Configuration: Flite 116-SA is remote configured from the G200 at the pole bottom
- Fault types: Flite 116-SA detects and transmits earth fault (di/dt algorithm), short circuits and voltage loss
- Inrush current filter: when the line is energized, a time delay filters inrush current due to transformers magnetization
- Transient faults: Flite 116-SA detects and transmits transient fault (a fault is considered as "transient" when the upstream protection device eliminates the fault during its reclosing cycle)
- Fault confirmation: faults are confirmed by the loss of voltage after the upstream protection device has tripped
- Reset: permanent fault indication is automatically cleared when voltage returns to the MV line or following a time delay.

Operation

- Instantaneous MV line fault reporting:
 - Instantaneous transmission to the G200 RTU of the fault detection (earth or phase to phase) or the voltage drop
- Periodic event reporting:
 - Continuous recording of the current values, updating of RTU local archives (average, min, max)
 - MV line status (Voltage presence or absence)
 - Flite 116-SA battery low alarm
- Communication to SCADA:
 - Data transmission
 - Remote parameter settings

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Characteristics

Application	
Distribution network voltage	7 kV (min) to 36 kV (max) ⁽¹⁾
Power frequency	50 Hz and 60 Hz
MV earthing system	Impedant neutral, solidly grounded
Conductor diameter	5 to 25 mm
Measurements	
Load current range	0 to 630 A Integrated within 3 s
Fault detection - parameters	
di/dt tripping values	6-12-25-30-40-60-80 A-Off
I _{max} tripping values	100-150-200-250-300-400-500-600-800 A-OFF with remote parameter setting
dt value for di/dt operation	25 ms for 60 Hz; 30 ms for 50 Hz
Inrush restraint duration	3-30-60 s-OFF
Fault confirmation delay	OFF or 70s
Radio transmission	
Application standards	FCC/Europe
Frequency	915 MHz (918-919, 12 MHz) or 866 MHz (865.65-866.89 MHz). For other frequency please contact Schneider Electric
RF output power	6.3 mW for EIRP (Effective Isotropic Radiated Power)
Hourly information	Measurements: I _{max} ; I _{min} ; I _{average} Battery status; Voltage Presence indication
Upon SCADA request	Instantaneous current measurement
Fault reporting	Immediate plus report of fault reset
Wake up mode	Permanent for interrogation from G200
Fault reset	
Automatic power return reset	3-30-70 s-Off
Timer reset	2-4-8-16 hours (remote setting)
Manual reset	By magnet
Fault indication	
Local display	Red flashing light
Light power	Very high visibility (40 lumens)
Visibility angle	360°
Flashing period for permanent faults	1 flash every 3 s (< 2 h) then 1 flash every 6 s
Standard total flashing duration	400 hours
Lithium battery life expectancy	
G200 with 3 Flite 116-SA	Up to 5 ¹ / ₂ years ⁽²⁾
G200 with 9 Flite 116-SA	Up to 4 ¹ / ₂ years ⁽²⁾
Environment	
Operation temperature	- 40 °C to + 70°C (-40°C to +85°C according to ANSI 485)
Storage temperature	- 40 °C to + 85°C
Humidity	< 95 %
Protection level	IP 55 IK 7
Mechanical	
Dimensions	155.8 mm (length) x 125.81 mm (width)
Net weight	540 g
Wind resistance	Up to 135 km/h for 25 mm diameter cable
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	IEN 61000-6-2, ETSI EN 301-489-3, 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⁾ for values outside this range, please contact Schneider Electric

⁽²⁾ this lifetime corresponds to standard situation. The lifetime depends on the temperature, the total duration of flash and the communication frequency between G200 and Flite 116-SA.

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Order references

Description	Reference
Flite 116-SA - 915 MHz	EMS58200
Flite 116-SA - 866 MHz	EMS58201
Installation tool with SICAME adapter (max. value of protection : 220 KV)	59953
Installation tool with BOWTHORP adapter	59954
12 meter telescopic hotstick (20 kV insulated)	59955

Description	Flite 116-SA model	Flite 116-SA manufacturing date	Lihtium battery reference
Lithium battery for Flite 116-SA	EMS58200	Before November 2016	59982
	EMS58201	Before February 2017	
	EMS58200	After November 2016	EMS58240
	EMS58201	After February 2017	