

Easergy Range - G200

Remote Terminal Unit for Flite 116-SA



Product at a glance

- Remote monitoring of up to 9 overhead lines (currents, faults, etc.)
- RTU with open protocol (DNP3 Serial and IP, Modbus Serial and IP, IEC 870-5-101)
- Communication via GSM/GPRS
- Pole-mounted or inside RTU
- External power supply or solar panel

Fast location of faulty circuits

The G200 unit is used as a gateway to link the Flite 116-SA FPIs to any SCADA.

The G200 unit is mounted on an overhead line pole close to the Flite 116-SA radio Fault Passage Indicator and communicates:

- On one side with the Flite 116-SA units, via a spread spectrum licence-free radio 915 MHz (918-919.12 MHz) or 866 MHz (865.65-866.89 MHz) with low power consumption (other frequency, please ask).
- On the other side with the distant acquisition system through a long range communication medium:
 - mobile telephone network (GSM/GPRS)
 - others via the local RS232 port.

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Basic functions

The G200 basic functions are:

- Date and time stamping of all events from Flite 116-SA
- Sending all the requested events to the SCADA
- Remote parameter setting of Flite 116-SA units via the SCADA
- Local parameter setting of Flite 116-SA and G200 units via the RS232 local port (use of the G200 Configuration tool to configure the unit)
- Storage capacity: 100 time-stamped events.

Description

The G200 is available in 2 housings:

- Pole-mounted box, with external DC supply, either from solar panel or other (ref.G2GF)
- Box to be connected to another RTU or part of a switch local control cabinet (ref. G2SF).

The main board includes:

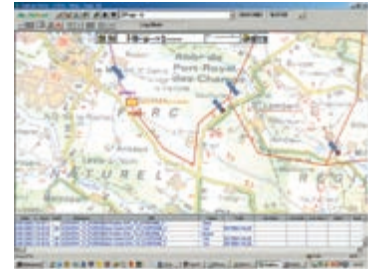
- A short range low power spread spectrum radio for communication with the Flite 116-SA
- For long range communication:
 - G2GF : 1 communication board with its medium modem
 - G2SF : one RS232 port for external communication
- One RS232 local parameter setting port
- 6 digital inputs, for alarm information to SCADA
- 3 digital dry contact outputs set to repeat phase faults (phase A, B, or C) from Flite 116-SA or short range communication faults or battery faults for transmission by an external RTU.

Solar panel installation



Solar panel for G2GF

Communication



SCADA



Protocols: Modbus, IEC et DNP3.



G2GF



G2SF

Short range communications



Up to 9 Flite 116-SA

G200 Configuration tool



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G200 characteristics

Local radio network

Type	Spread spectrum low power licence-free
Frequency	915 MHz (918-919.12 MHz) or 866MHz (865.65-866.89 MHz) for other frequency: please contact Schneider Electric
RF output power	100 mW for EIRP (Effective Isotropic Radiated Power), with outdoor antenna, 25 mW otherwise.

Long range communications

Communication media	<ul style="list-style-type: none"> • G2GF : Embedded GSM/GPRS modem • G2SF : Embedded RS232 modem
Communication protocol	DNP3 serie/IP, IEC 870-5-101, Modbus serie/IP

Measurements

Type	<ul style="list-style-type: none"> • I min, I max, I mean and I inst • MV prsence statistics
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MV line monitoring

Number of MV lines monitored per G200	9 phases (9 Flite 116-SA)
Max. distance with Flite 116-SA	100 meters (with clear line of sight)
Earth fault	Earth fault indication (phase A, B, or C), (beginning time, ending time)
Phase fault or I _{max}	Phase fault indication (phase A, B, or C), (beginning time, ending time)
Transient fault detection if enabled	Transient fault indication and time stamping
Voltage loss	<ul style="list-style-type: none"> • Voltage loss indication (phase A, B, or C) and time stampin • Voltage recovery time indication

Equipment monitoring

Local radio communication faulty	Communication with Flite 116-SA no.x faulty (after a number of attempts) and time stamping
Flite 116-SA battery alarm	Battery low in Flite 116-SA no.x and time stamping

RTU inputs/outputs

Inputs	6 digital inputs
Outputs	3 relay outputs 220 Vac/1 A

Local archive

Date and time-stamped events and measures	100
Downloading of local archive	SCADA (L500)

Power supply

Supply	External 12 Vdc supply (G2SF) or solar panel (G2GF)
Battery	6 V when solar powered

Environment

Operating temperature	-25°C to +70°C (except GSM modem: -25°C to +55°C)
Storage temperature	-40°C to +85°C

Mechanical

	G2GF	G2SF
Dimensions in mm	270x203x110	250x150x65
Net weight in kg	1,5	1
Protection level	IP 54 IK 9	IP 21 IK 7

Standards

Vibrations and shocks test	IEC 60068-2-6 and IEC 60068-2-27
EMI/EMC immunity	FCC 47 part 15, ETSI EN 301 489-3, IEC 61000-6-2, IEC 61000-6-4 and ETSI EN 301 489-7 (only G2GF)
Salt spray and humidity tests	IEC 60068-2-11 (168 hours) and IEC 60068-2-30 (+55°C 9 hours, +25°C 6 hours, 6 cycles of 24 hours)
Temperature	IEC 60068-2-1, IEC 60068-2-2 and IEC 68-2-14

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G200 references: G2 -

GF - 915 - AZ - D - IZ

Enclosure type:

- GF G2GF enclosure - IP 54
- SF G2SF enclosure - IP 21

Short range radio frequency:

- 915 (918-919.2 MHz)
- 866 (865.65-866.89 MHz)

1 - Embedded interface:

- G GSM 900 - 1800 MHz
- I GPRS 900 - 1800 MHz
- 2 RS232

2 - External modem device:

- Z none

1 - Power supply:

- A external 6/12 Vdc



2 - Back-up battery:

- Z no battery

Protocol used:

- D DNP 3.0
- I IEC 870-5-101
- M Modbus

Warning: all combinations are not possible, please refer to the table below. As standards specifications and designs change from time to time, please ask for confirmation of the information given in this publication.

Short designation	Reference	Enclosure	Frequency	Power supply	Protocol	Modem
G2GF-915-AZ-M-GZ			915 MHz	6/12 Vdc without battery	Modbus	GSM
G2GF-915-AZ-I-GZ			915 MHz	6/12 Vdc without battery	IEC101	GSM
G2GF-915-AZ-D-GZ			915 MHz	6/12 Vdc without battery	DNP3.0	GSM
G2GF-915-AZ-M-IZ			915 MHz	6/12 Vdc without battery	Modbus	GPRS
G2GF-915-AZ-D-IZ			915 MHz	6/12 Vdc without battery	DNP3.0	GPRS
G2SF-915-AZ-D-2Z	EMS58235		915 MHz	6/12 Vdc without battery	DNP3.0	RS232
G2SF-915-AZ-I-2Z	EMS58236		915 MHz	6/12 Vdc without battery	IEC101	RS232
G2SF-915-AZ-M-2Z	EMS58237		915 MHz	6/12 Vdc without battery	Modbus	RS232
G2SF-866-AZ-I-2Z	EMS58238		866 MHz	6/12 Vdc without battery	IEC101	RS232

G200 solar panel

Reference

G2GF solar panel - Power 10W

GS-6-10

G2GF solar panel - Power 20W

GS-6-20

35, rue Joseph Monier S 30323
F - 92506 Rueil Malmaison Cedex
Phone: + 33 (0) 1 41 29 70 00

www.schneider-electric.com

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