

Cat. N°:
F4N107



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1. DESCRIPTION - USE

Harmonic analysis module.
Allows the analysis of the harmonic spectrum for voltages and currents.
Adding the RS485 module (cat. nos. F4N104 or F4N105), data of harmonic analysis are also available in communication.

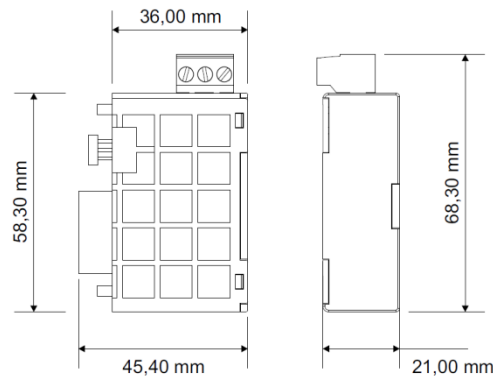
2. RANGE

. Cat. n° F4N107: Harmonic analysis module; associable only to multifunction measuring device F4N400.
. It is possible to connect only one module F4N107.

Auxiliary supply:

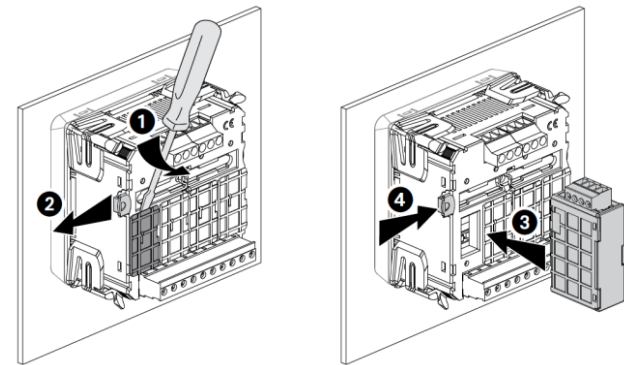
. Supplied by the multifunction measuring device F4N400

3. OVERALL DIMENSIONS



4. FIXING - CONNECTION

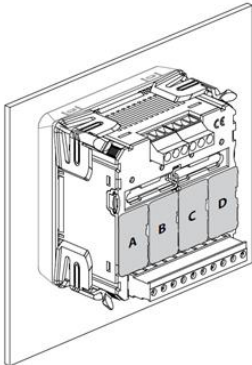
Fixing:



Note: modules must be connected with the device F4N400 not supplied.

4. FIXING - CONNECTION (continued)

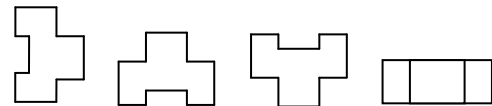
Associability table:



	A	B	C	D	
F4N101	✗	✗	✓	✓	max. 2
F4N102	✗	✗	✓	✓	max. 2
F4N103	✓	✓	✓	✓	max. 2
F4N104	✓	✗	✗	✗	max. 1
F4N105	✓	✗	✗	✗	max. 1
F4N106	✗	✗	✗	✓	max. 1
F4N107	✗	✓	✗	✗	max. 1

Operating position:

. Vertical Horizontal Upside down On the side



Screw terminals:

. Terminal depth: 8 mm.
. Stripping length: 8 mm

Screw head:

. Screw slotted.

Recommended tightening torque:

. 0,6 Nm.

Tools required:

. For terminals: flat screwdriver 3,5 mm
. For fixing the modules to the measuring device: flat screwdriver max. 5 mm.

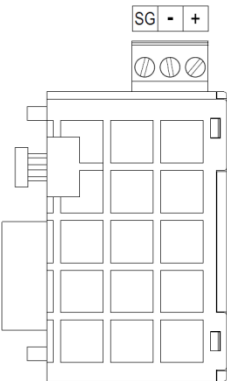
Connectable section:

. Copper cables.

	Without ferrule	With ferrule
Rigid cable	0,05 to 4,5 mm ²	-
Flexible cable	0,05 to 2,5 mm ²	0,05 to 2,5 mm ²

Wiring diagrams:

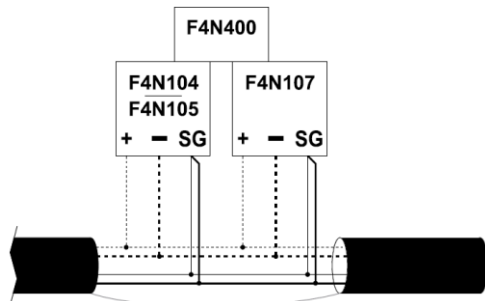
. Terminals identifications



4. FIXING - CONNECTION *(continued)*

Wiring diagrams *(continued)*

. To transmit in communication data related to harmonic analysis, terminals of the F4N107 module must be connected to the RS485 bus with the same rules applied to the communication modules (cat. nos. F4N104 / F4N105).



. **Note:** connection is not required if you don't want to refer measurements performed by the module F4N107 to a supervision system.

5. GENERAL CHARACTERISTICS

Terminals marking:

. By permanent ink pad printing.



Harmonic spectrum analysis:

With the F4N107 module only installed, the F4N400 displays:

- odd harmonics of phase voltages (V_1 , V_2 , V_3) or chained voltages (V_{12} , V_{23} , V_{31}), from 3rd to 9th expressed as a percentage of the fundamental.
- odd harmonics of phase currents (I_1 , I_2 , I_3), from 3rd to 9th expressed as a percentage of the fundamental.
- crest factor of voltages and currents.
- phase angle between voltages and the between currents.

. Installing the RS485 module (cat. no F4N104 or F4N105), following data are available in communication:

- harmonics (odd and even) of phase voltages (V_1 , V_2 , V_3) or chained voltages (V_{12} , V_{23} , V_{31}), from 2nd to 50th, expressed as a percentage of the fundamental.
- harmonics (odd and even) of phase currents (I_1 , I_2 , I_3), from 2nd to 50th, expressed as a percentage of the fundamental.
- crest factor of voltages and currents.
- phase angle between voltages and the between currents.

Plastic material:

. Self-extinguishing polycarbonate.

Ambient operating temperature:

. Min. = - 5 °C Max. = + 55 °C.

5. GENERAL CHARACTERISTICS *(continued)*

Ambient storage temperature:

. Min. = - 25 °C Max. = + 70 °C.

Impulse withstand voltage:

. Measuring inputs / All circuits
alternate current 50 Hz / 1 min.: 2 kV

Note: values referred to combination measuring device + add-on module.

Average weight per device:

. 0,030 kg.

Volume when packed:

. 0,30 dm³

Consumption:

. Module F4N107: ≤ 1 VA
. Measuring device F4N400 + 1 Module F4N107: ≤ 5 VA

6. COMPLIANCE AND APPROVALS

Compliance to standards:

- . Compliance with Directive on electromagnetic compatibility (EMC) n° 2004/108/EC
- . Compliance with low voltage directive no. 73/23/CEE dated 19 February 1973, modified by directive no. 93/68/CEE dated 22 July 1993, modified by directive n° 2006/95/CE.
- . IEC/EN 60751