

## 1) Nordgas “iModule” System: list of components

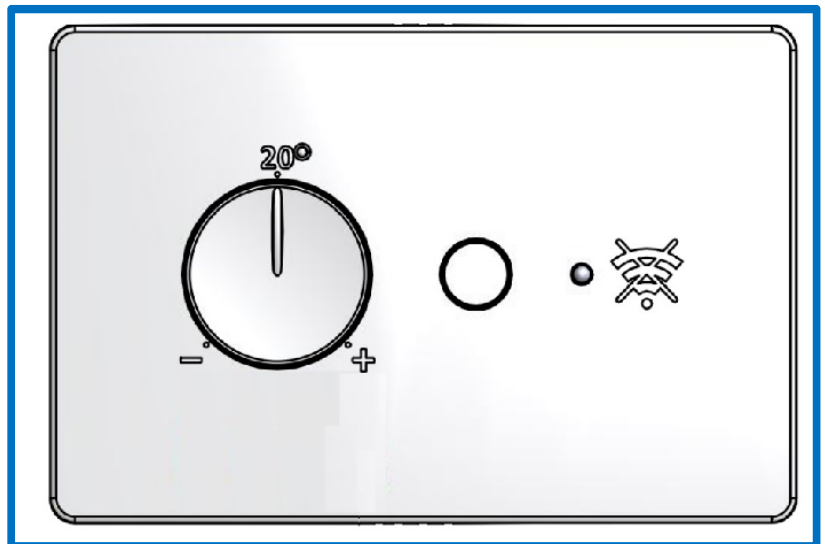
- 1) iModule, data transmitter/receiver unit, available in both GSM (“Global System for Mobile Communications”) and Wi-Fi (“wireless local area network based on IEEE802.11 standards”) version;
- 2) Local-Controller, for detection and manual adjustment of the room temperature in case of errors/faults of the iModule unit;
- 3) App “iModule”, available for free for iOS (Apple iPhone/iPad) and Android:
  - <https://play.google.com/store/apps/details?id=it.nordgas.imodule&hl=it> Android
  - <https://itunes.apple.com/it/app/imodule/id826530264> iOS (Apple iPhone/iPad)

## 2) User Manual of Nordgas “iModule” System

### Local-Controller:

The Local-Controller unit has an internal sensor for detection of room temperature.

It’s possible to manage the boiler (i.e., adjusting the domestic comfort) in MANUAL mode by means of a button and a knob; in AUTO mode, however, the APP directly manages the boiler and then all settings are made via tablet or smartphone.

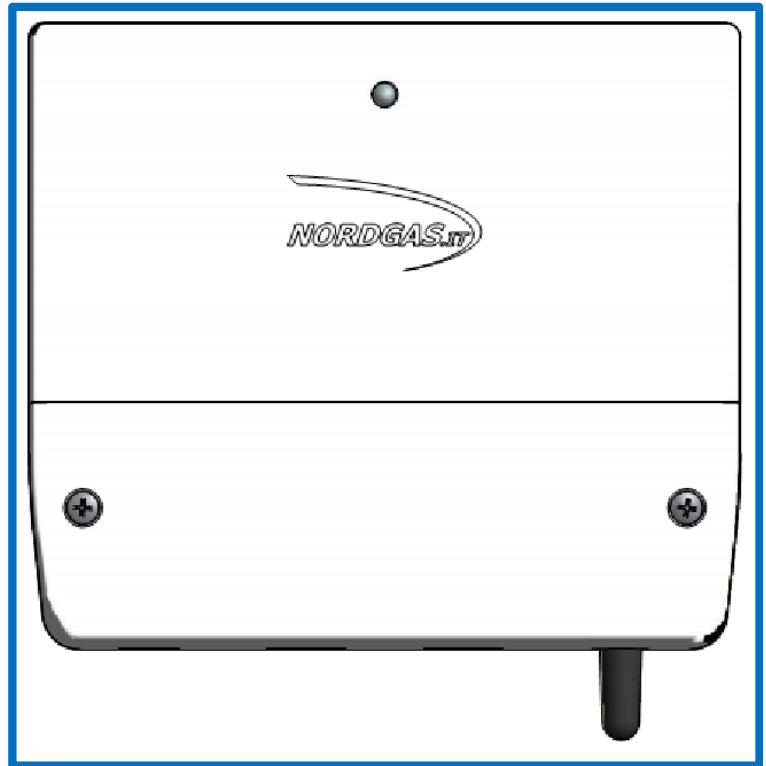


### Functionality:

- Button: selects between Automatic mode and Manual mode;
- Knob: used for setting the Set-Point setting (at Local-Controller) in the range from 10 ° C to 30 ° C, valid only in Manual mode;
- Green Led:
  - Steady ON: Manual mode active (boiler managed by Local-Controller);
  - 1 flash per seconds: Automatic mode active (boiler managed by iModule and APP);
  - Slow Blinking (1 flash per second): Manual mode active (power supply to iModule has been removed – the boiler is directly managed by Local-Controller);
- Red Led:
  - Steady ON: fault on Open-Therm communication toward iModule or boiler;
  - Steady OFF: no faults;
  - Slow Blinking (1 flash per second): fault on room temperature sensor (within Local-Controller);
  - Fast Blinking (5 flashes per second): fault on iModule (missing communication toward APP);

## iModule:

In case of failure of iModule unit, or when there's no data connection by GSM or Wi-Fi, you can disable the operation of iModule and directly connect the boiler to the Local-Controller: so, the boiler can always be locally managed by the user. If power supply is removed by iModule, Manual mode becomes active.



### Functionality iModule LED:

- Green Led Steady ON: AUTO mode (boiler managed by APP);
- Led alternatively blinking Red and Green → iModule not yet configured;
  - for Wi-Fi version, configure the Wi-Fi network to connect to (see below for details);
  - for GSM version, send an SMS to configure the APN;
- Green Led very Slow Blinking (1 flash every 2,5 seconds): Manual mode (boiler managed by Local-Controller);
- Green Led Slow Blinking (1 flash per second): data-exchange by GSM/Wi-Fi is being executed;
- Green Led Fast Blinking (5 flashes per second): Wi-Fi configuration (mini access-point) is being executed;
- Red Led Steady ON: fault on GSM/Wi-Fi connection;
- Red Led Slow Blinking (1 flash per second): fault on communication with Local-Controller;
- Red Led Fast Blinking (5 flashes per second): fault on communication with the boiler (if iModule configured as "Open-Therm");
- Both Led Steady OFF: power-supply to iModule missing

### APP iModule (on tablet or smartphone):

In the Login page, you can select the application language:

- English
- Italian
- Czech
- Polish
- Russian
- Turkish
- Ukrainian

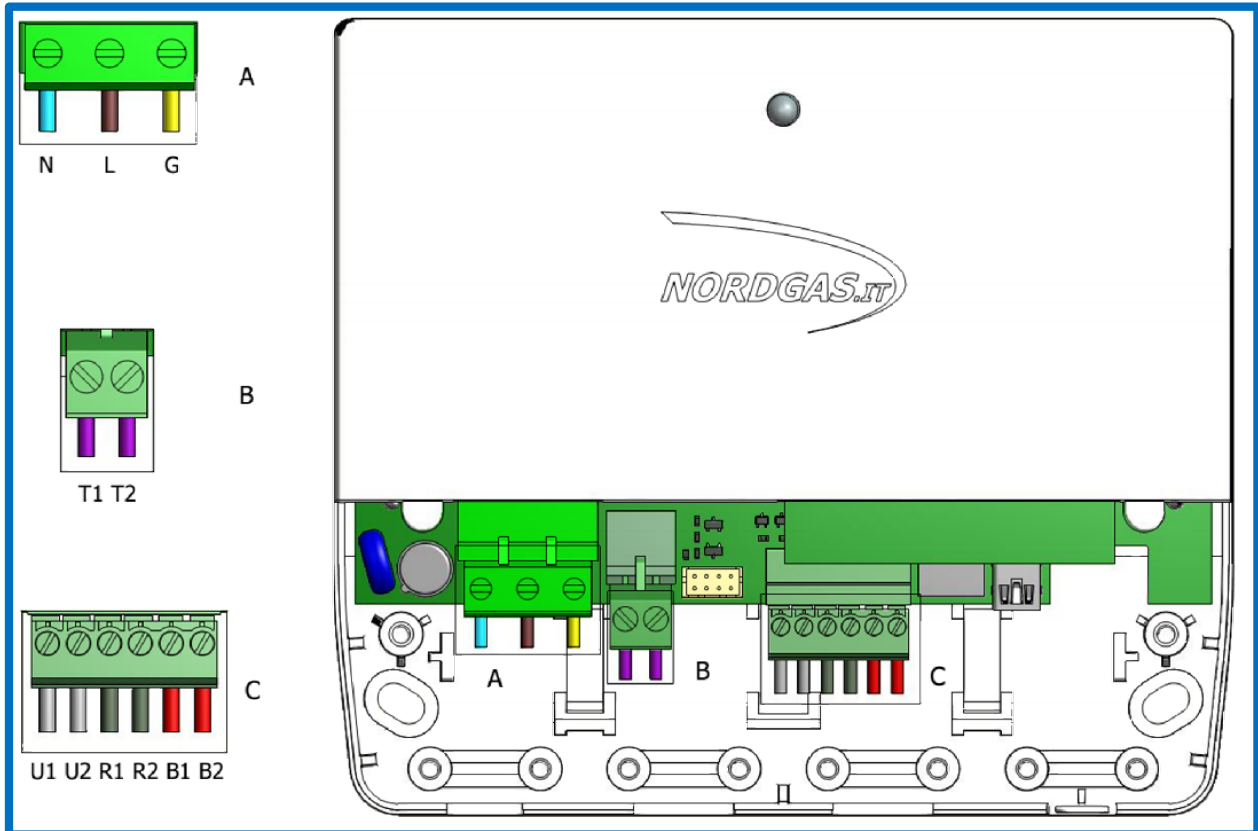
In the Login page, you can log in DEMO mode (username and password not needed), which allows to test the interface and control logic of the system (without being connected to any actual system).

For Login credentials (Username e Password), refer to the technician.

### 3) Hardware Installation Manual

- Install Local-Controller in the ambient environment within the home, for example in the same location as the previous Room-Thermostat/Remote-Controller;
- Install iModule in any internal portion of the house (home, garage, cellar, boiler room) , with acceptable GSM field (for iModule version GSM), or near the Router/Switch Wi-Fi (for iModule version Wi-Fi);
- Connect iModule and Local-Controller by Open-Therm (2 wires);
- Connect iModule and the Boiler (2 wires) by Open-Therm or Room Thermostat;
- Connect iModule to power-supply (230VAC);

Refer to the following figure for connection diagrams and wiring:



Connector A (Power-Supply):

- N → **Neutral line** of the power supply cable (Single-Phase Alternating-Current, 230 VAC, 50 Hz)
- L → **Phase line** of the power supply cable (Single-Phase Alternating-Current, 230 VAC, 50 Hz)
- G → **Ground line** of the power supply cable (Single-Phase Alternating-Current, 230 VAC, 50 Hz)

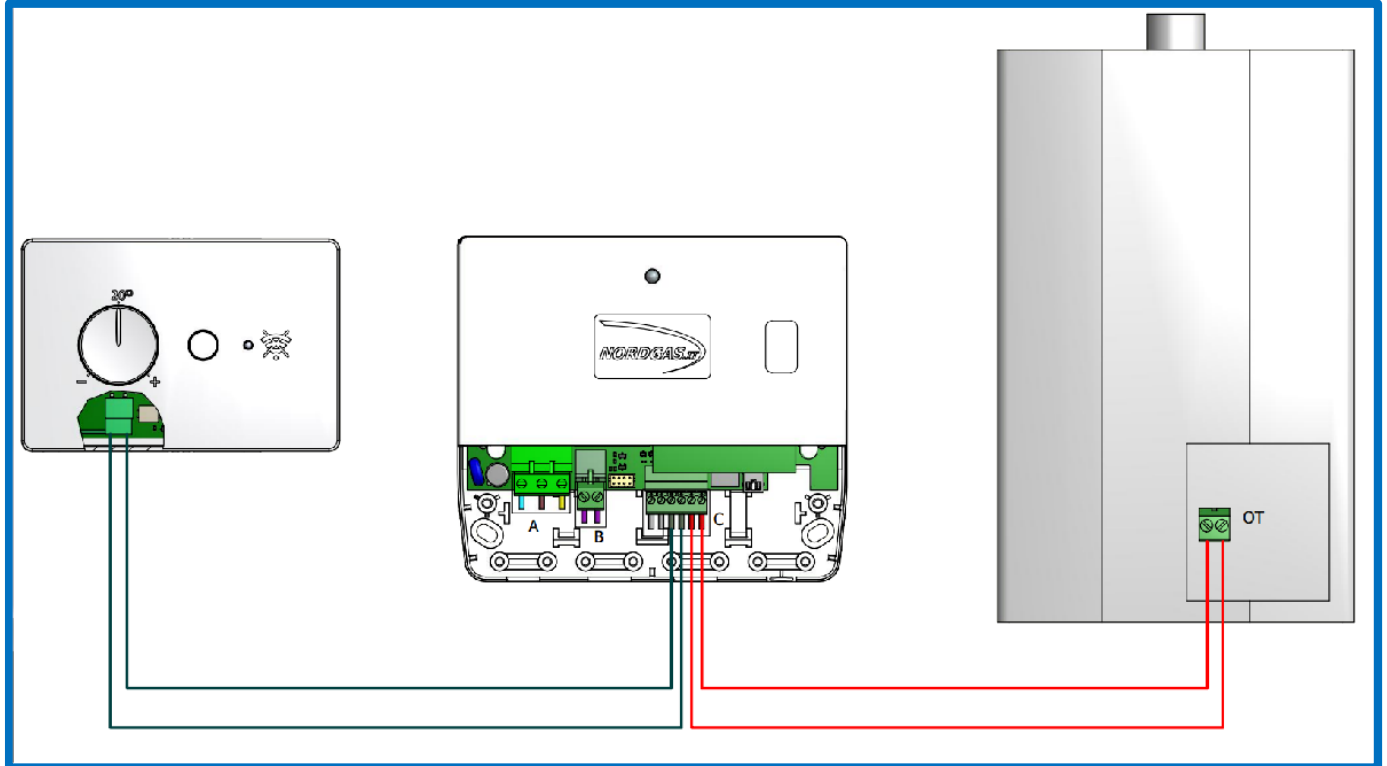
Connector B (for RT-configuration only – Room Thermostat):

- T1 and T2 shall be connected to the boiler, to activate the central-heating request by Room thermostat relay;

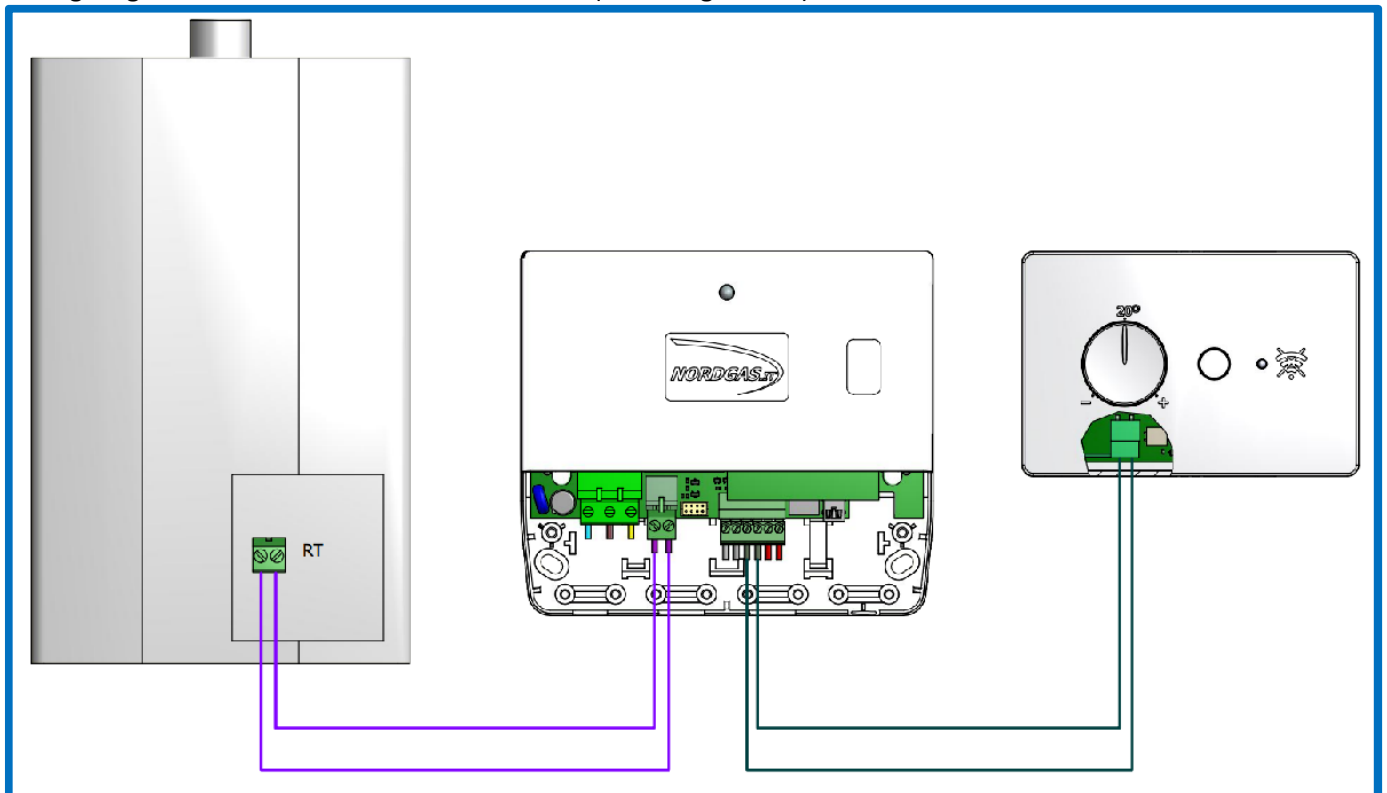
Connector C (Open-Therm wiring):

- B1 and B2 shall be connected to the Open-Therm bus of the boiler (for OT-configuration only – boiler type = Open-Therm);
- R1 and R2 shall be connected to the Local Controller;

Wiring diagram for Open-Therm Boiler connection (OT-configuration):

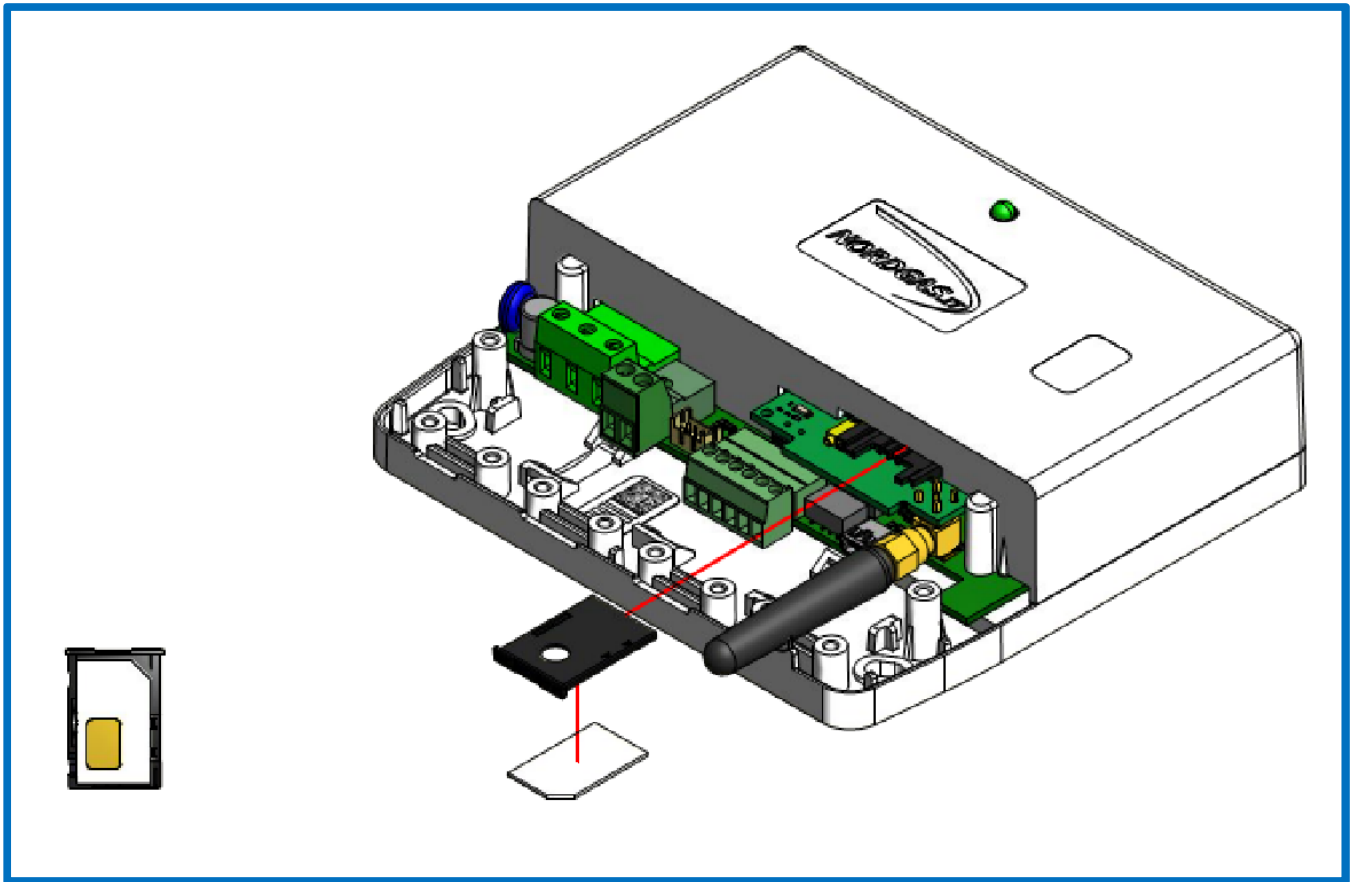


Wiring diagram for Room thermostat connection (RT-configuration):



#### 4) iModule configuration, GSM version (for technicians and users)

- 1) Use **SIM "2G"** (SIM "3G" are not supported), type "**Data Only**" or "**Talk+Data**";
- 2) The PIN ("*Personal Identification Number*") of the SIM ("*Subscriber Identity Module*") shall be disabled;
- 3) Insert the SIM in the iModule, refer to the following image:



- 4) Send an SMS to the mobile phone number relevant to the SIM ("*Subscriber Identity Module*") card inserted within iModule, in the following format: "APN:xxx#"

The APN ("*Access Point Name*") depends on the GSM provider of the SIM card inserted within iModule; examples for Italian GSM providers:

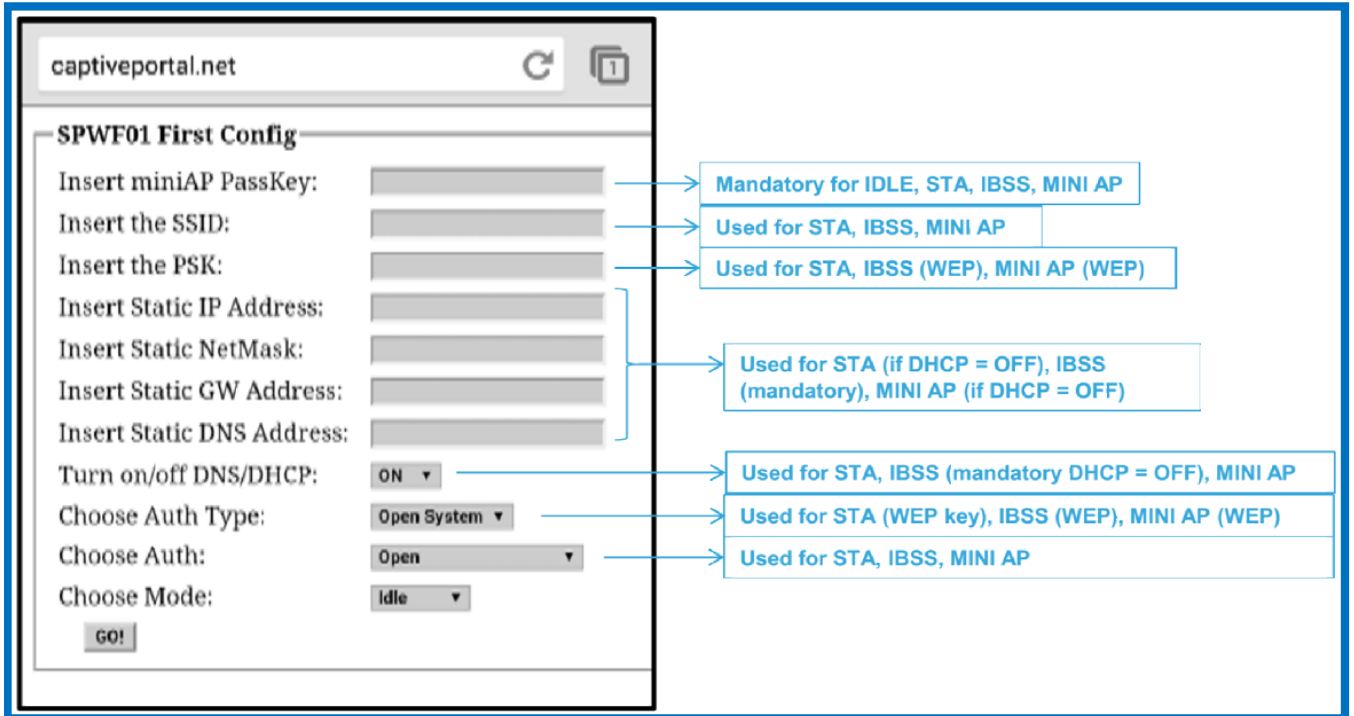
- xxx=ibox.tim.it
- xxx=mobile.vodafone.it
- xxx=internet.wind

Example of SMS to be sent to iModule:

APN:internet.wind#

## 5) iModule configuration, Wi-Fi version (for technicians and users)

- 1) Provide Power-Supply to iModule (by means of Connector A, see above);
- 2) For 10 minutes, the Wi-Fi network "iModule\_WiFi" is activated; that's an Open Wi-Fi network, no password needed to access;
- 3) Connect a Wi-Fi device (PC/Laptop/Tablet/Smartphone) to "iModule\_WiFi" network;  
On the Wi-Fi device, open any Web-Browser and type in the address bar: <http://captiveportal.net>; the Web-Browser shows the following web-page:



The screenshot shows the 'captiveportal.net' web page titled 'SPWF01 First Config'. It contains several input fields and dropdown menus for configuring the Wi-Fi network. Annotations on the right side explain the purpose of each field:

- Insert miniAP PassKey:** Mandatory for IDLE, STA, IBSS, MINI AP
- Insert the SSID:** Used for STA, IBSS, MINI AP
- Insert the PSK:** Used for STA, IBSS (WEP), MINI AP (WEP)
- Insert Static IP Address:** Used for STA (if DHCP = OFF), IBSS (mandatory), MINI AP (if DHCP = OFF)
- Insert Static NetMask:** Used for STA (if DHCP = OFF), IBSS (mandatory), MINI AP (if DHCP = OFF)
- Insert Static GW Address:** Used for STA (if DHCP = OFF), IBSS (mandatory), MINI AP (if DHCP = OFF)
- Insert Static DNS Address:** Used for STA (if DHCP = OFF), IBSS (mandatory), MINI AP (if DHCP = OFF)
- Turn on/off DNS/DHCP:** ON (Used for STA, IBSS (mandatory DHCP = OFF), MINI AP)
- Choose Auth Type:** Open System (Used for STA (WEP key), IBSS (WEP), MINI AP (WEP))
- Choose Auth:** Open (Used for STA, IBSS, MINI AP)
- Choose Mode:** Idle

A 'GO!' button is located at the bottom left of the form.

- The web page <http://captiveportal.net> is provided by iModule and lies within iModule; the page has the only purpose of allowing the Wi-Fi configuration of the iModule;
  - If the web-page <http://captiveportal.net> is not quickly opened, it's suggested to turn off an eventual proxy server (check the connection settings or browser preferences);
  - Suggested browser: Internet Explorer®, Mozilla Firefox®, Safari®;
- 4) Fill the following information:
    - a. *Insert miniAP PassKey:* nordgas
    - b. *Insert the SSID:* name of the Wi-Fi network that iModule will to connect to
    - c. *Insert the PSK:* password of the Wi-Fi network that iModule will to connect to
    - d. Discard the next 4 fields "*Insert Static IP Address*", "*Insert Static NetMask*", "*Insert Static GW Address*" and "*Insert Static DNS Address*"
    - e. *Turn on/off DNS/DHCP:* choose "ON"
    - f. *Choose Auth Type:* choose "Open System"
    - g. *Choose Auth:* choose "WEP" or "WPA/WPA2" or "Open" according to the security protocol of the Wi-Fi network to connect to
    - h. *Choose Mode:* choose STA (Station)
  - 5) Finally, press "GO!"; after a few seconds, the network "iModule\_WiFi" is disabled by iModule unit, with relevant automatic disconnection of the Wi-Fi device;
  - 6) On the iModule APP, wait for max 3/5 minutes to verify the refresh of the Room Temperature shown;

**NOTE:** in case that's required to repeat again the Wi-Fi configuration (for example when you need to change one or more parameters of the Wi-Fi network to connect to), remove the power-supply of the iModule, and then repeat the configuration procedure.