# WiFi module

lae ELECTRONIC

Electronic control systems designers

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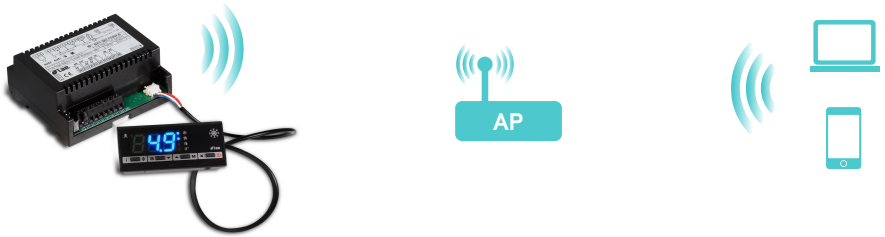


## **INTERNET** mode Connection to a network through a Router


# WIRELESS CONNECTION

This wireless module, which may be fitted in several LAE controllers, allows the connection to a WiFi network, through which it can communicate both with smartphones and a PC's. Through a web browser it's possible to check the general state of a controller, that is: values of inputs, current setpoint and alarms.

Thanks to the automatic storage function, all those data are saved in the internal memory and may be consulted at any time, simply and quickly, by means of your smartphone.

In addition, if through a WiFi router a connection to Internet is available, in case of an alarm, an e-mail message will be generated, to notify: time and type of alarm, duration and plant where it has taken place.

All this adds a very powerful diagnostics function to the already outstanding performances of the LAE controllers and it allows an incredible leap forward to total safety.

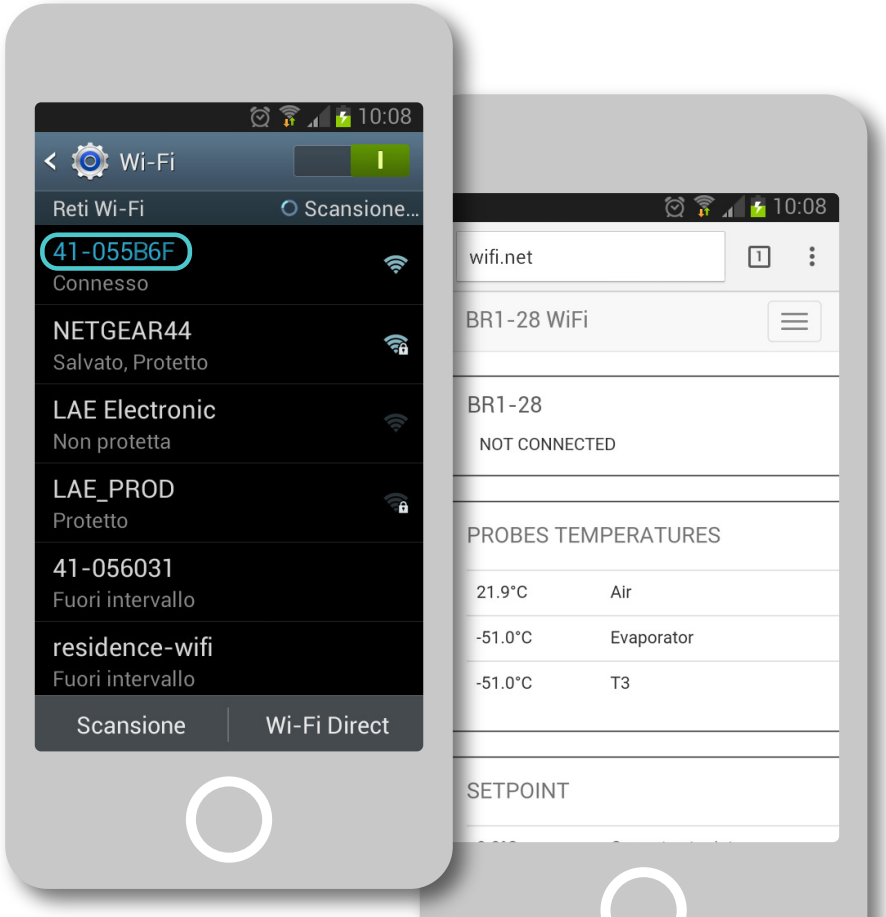


*Figure 1*
*Connected to access point*




*Figure 2*
*Status page*

# OUT OF BOX OPERATIONS

At the first power-up of the controller where the WiFi module is in, this shows up as an Access Point.
To set it up, proceed to connecting it to a smartphone, following the procedure hereinafter:

1. Power the controller
2. Disable the 3G network of the smartphone and activate the WiFi connection
3. Search the SSID appearing on the label under the bar code (*Figure 3*) among the available WiFi networks, then get connected (*Figure 1*)
4. With a web browser digit the "wifi.net" address or "192.168.1.1"
5. Now, a status page will appear (*Figure 2*)

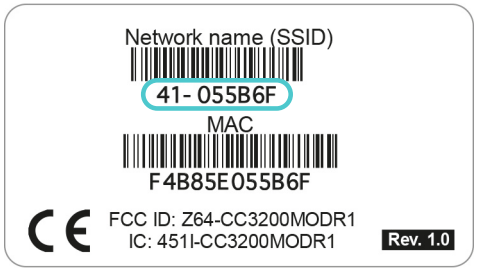


*Figure 3*
*Name of WiFi Access Point*

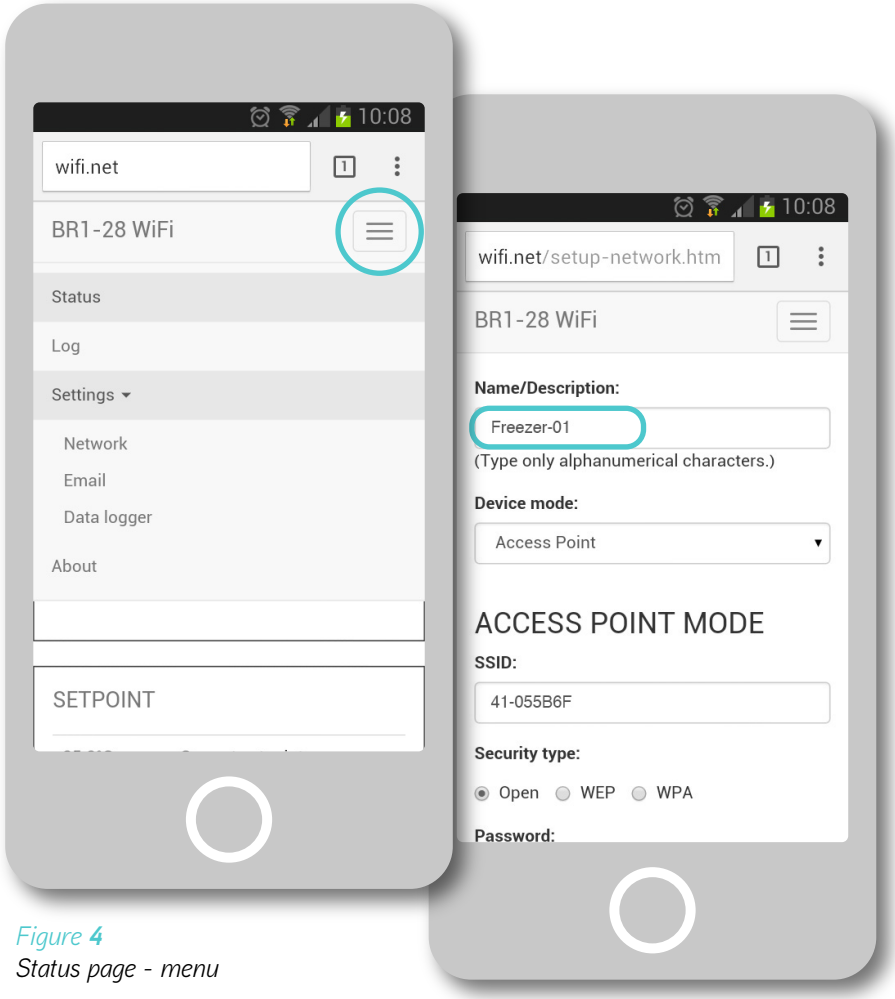


*Figure 4*
*Status page - menu*

*Figure 5*
*Status page – network*

# DATA STATION CONFIGURATION

Now, the first operation to be performed will be to configure and customise the data transmission "station", through a descriptive text; you will have to make the unit to which you are connected or which will send e-mail alarms clearly identifiable.

1. In the pull-down menu (*Figure 4*) select the option Setting > Network

2. In the Name/Description field, digit a text, with the limit of 33 alpha-numeric characters (no space), which will then appear in all the document/page headers relating to the station; ex. *Freezer-01* (*Figure 5*)

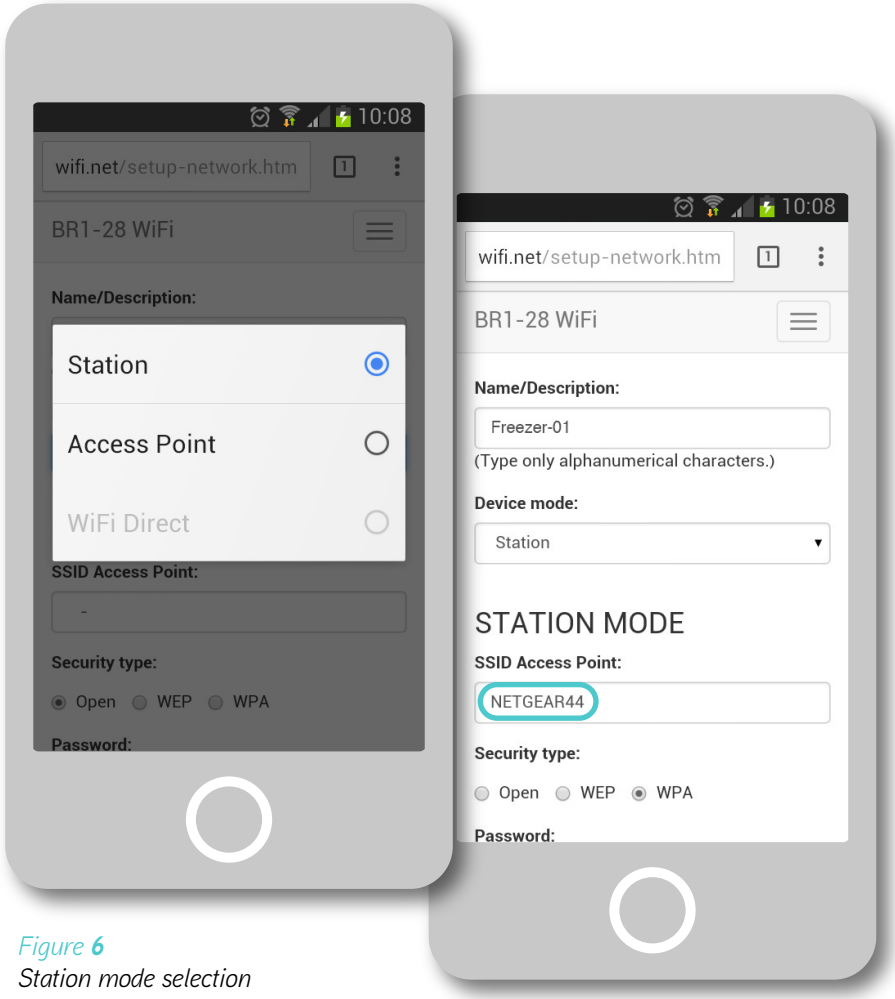


*Figure 6*
*Station mode selection*

*Figure 7*
*Status page – Station mode data*

**3.** Device mode

This selection will allow you to obtain different levels of performance from your WiFi module. Choose between the two options "**Access point**" and "**Station**".

**4a.** **Station** Mode

In order to use the whole functionality of the module, it will be necessary to have a WLAN network to get connected to. Thus, pass from "Access Point" to "**Station**" mode (*Figure 6*)

**4a.1.** Type in the data relating to your Access Point, i.e.: SSID, password, etc... (*Figure 7*)

**4a.2.** With your smartphone, now connect to the network Access Point and through it to the new station.
To make this easier, you may use free APP's allowing a smart mDNS function, for ex.: *Zentri discovery for Android*

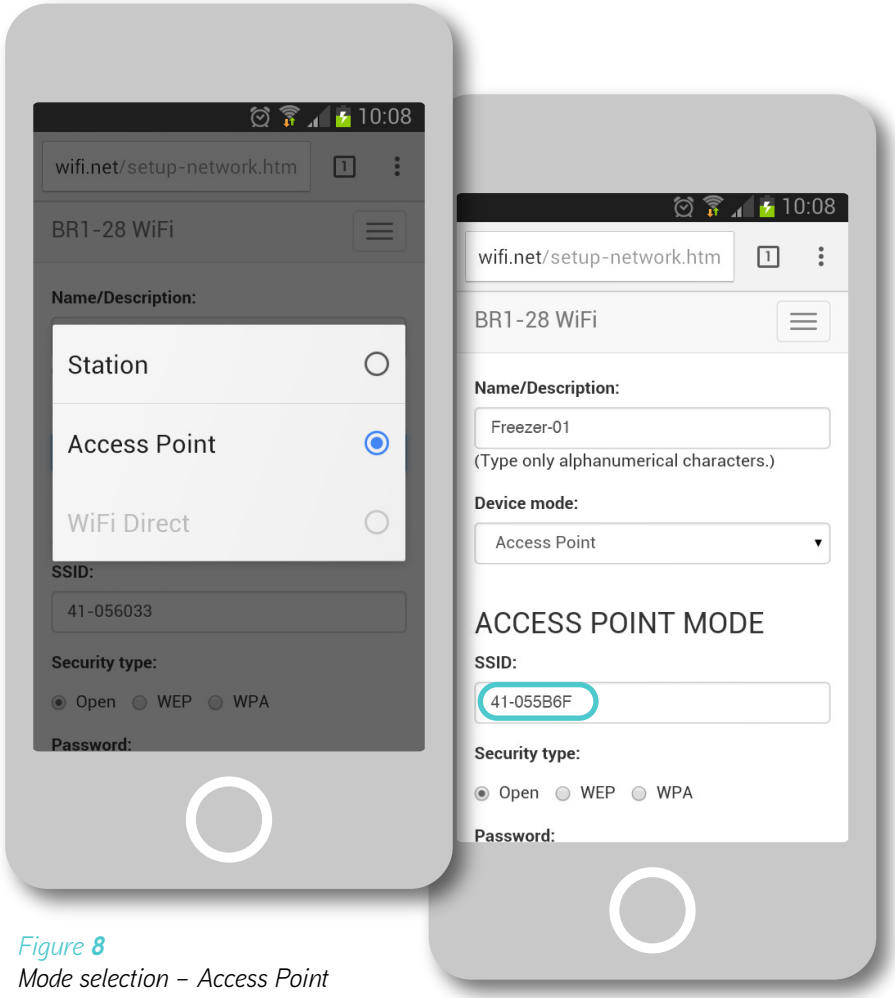


*Figure **8***
*Mode selection – Access Point*

*Figure **9***
*Status page – Access Point mode data*

## 4b. **Access Point** Mode (*Figure **8***)

This is the default mode, necessary whenever there will be no WLAN network to which you can connect. In this way, the device will then turn out to be accessible from your smartphone with the same credentials of the configuration (see point **2.**)

In the Access Point mode, your WiFi module will turn out to be accessible locally only and from a single smartphone at a time; it will neither be able to send messages or update date and time automatically.

Although the module now turns out to only be accessible within a relatively narrow range, it will however be opportune to protect it against non authorised attempts of access; thus, the fields "Security type" and "Password" (*Figure **9***) will have to be filled in duly.

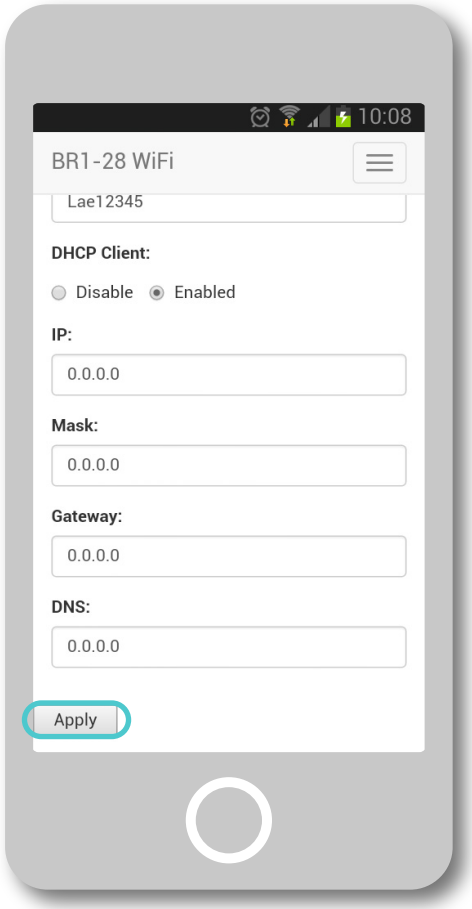


*Figure **10***
*Status page – setting confirmation*

5. After performing the operations detailed before, press key "Apply" at the page bottom in order to make them operational immediately (*Figure **10***)

**Reload**

Whenever, for whatever reason (wrong operations or network change), it turned out to be necessary to reload the factory setting, refer to the instructions of the display to be associated to the controller in which the WiFi module resides.

# E-MAIL SETUP

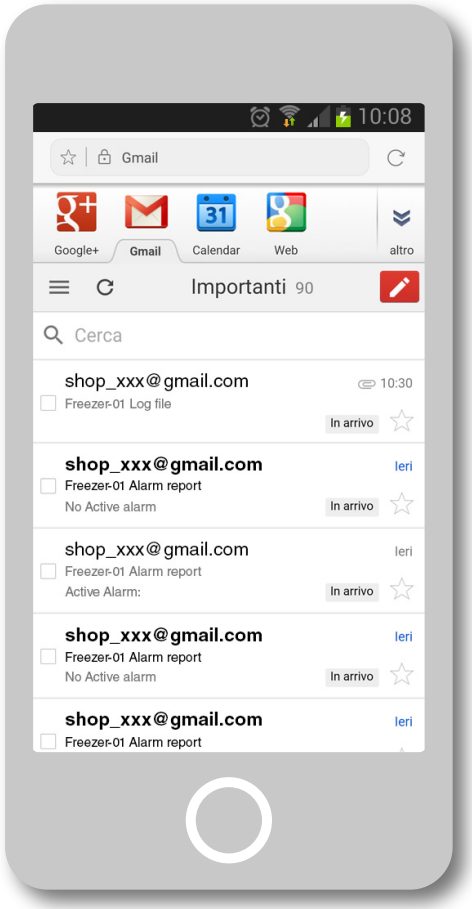


*Figure **11***
*E-mail page*

The WiFi module is able to send an e-mail message at the occurance and end of an alarm condition and/or, on a regular basis, the log file stored.

If you have to serve more different plants, we suggest to create a mail account per each of them and assign a mnemonic to the device, in order to be able to identify sender quickly.
For reference, see *Figure **11*** here at the side.

Configure the e-mail function as explained in the following pages.

# E-MAIL SETUP

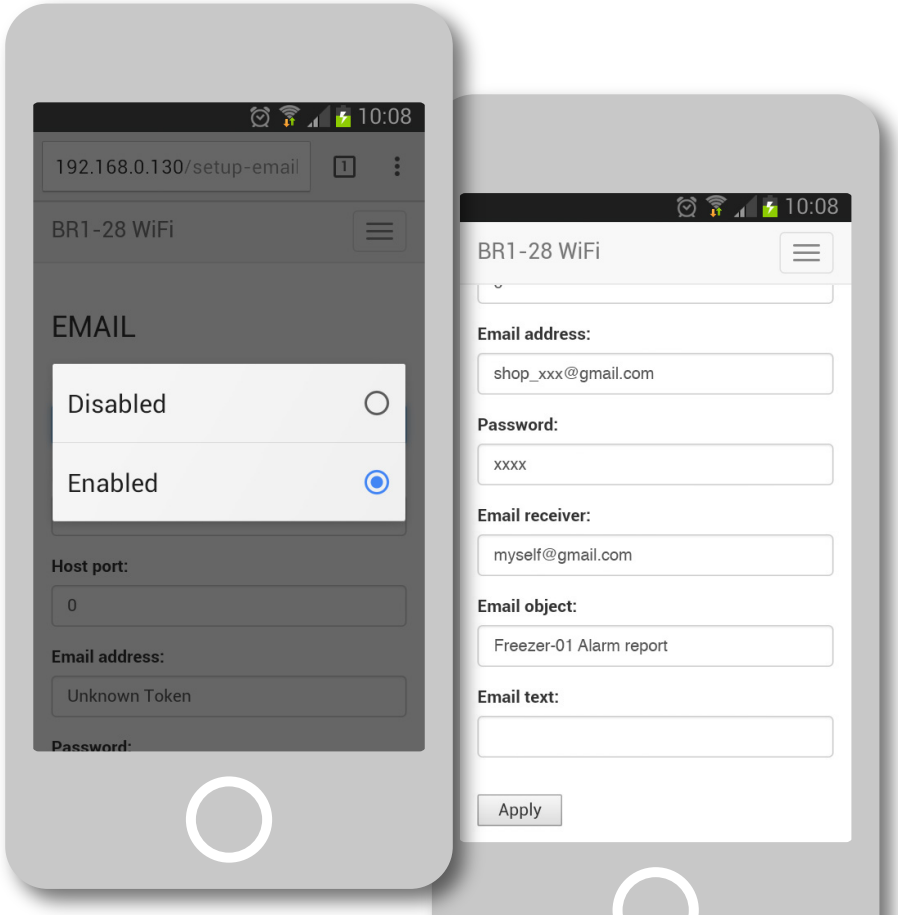


*Figure **12***
*E-mail page – enabled*

*Figure **13***
*E-mail page*

**1.** In the pull-down menu, select the option Settings > Email

**2.** Enable e-mails (*Figure **12***)

**3.** Fill in the fields with correct data (*Figure **13***):
in "Host name", digit the sender's host that you are going to use:
- For gmail: *smtp.gmail.com*
- For yahoo: *smtp.mail.yahoo.com*

**4.** In "Host port" digit the port number to be used:
- For gmail and yahoo: *465*

**5.** In "Email address" digit the sender's address (ex. *shop_xxx@gmail.com*)

**6.** In "Password" digit the sender's account password

**7.** In "Email receiver" digit the receiver's e-mail address (ex. *myself@gmail.com*)

**8.** In "Email object" digit the mail object (ex. *Freezer-01 Alarm report*)

**9.** In "Email text" digit the mail text, which will complete the text generated by the module automatically

**10.** Press "Apply" to save the new setup

# Example

When a **new alarm** occurs, the module will send an e-mail notice (*Figure **14***). In the same manner, when an alarm in a controller is over, an **alarm end** e-mail will be sent (*Figure **15***)

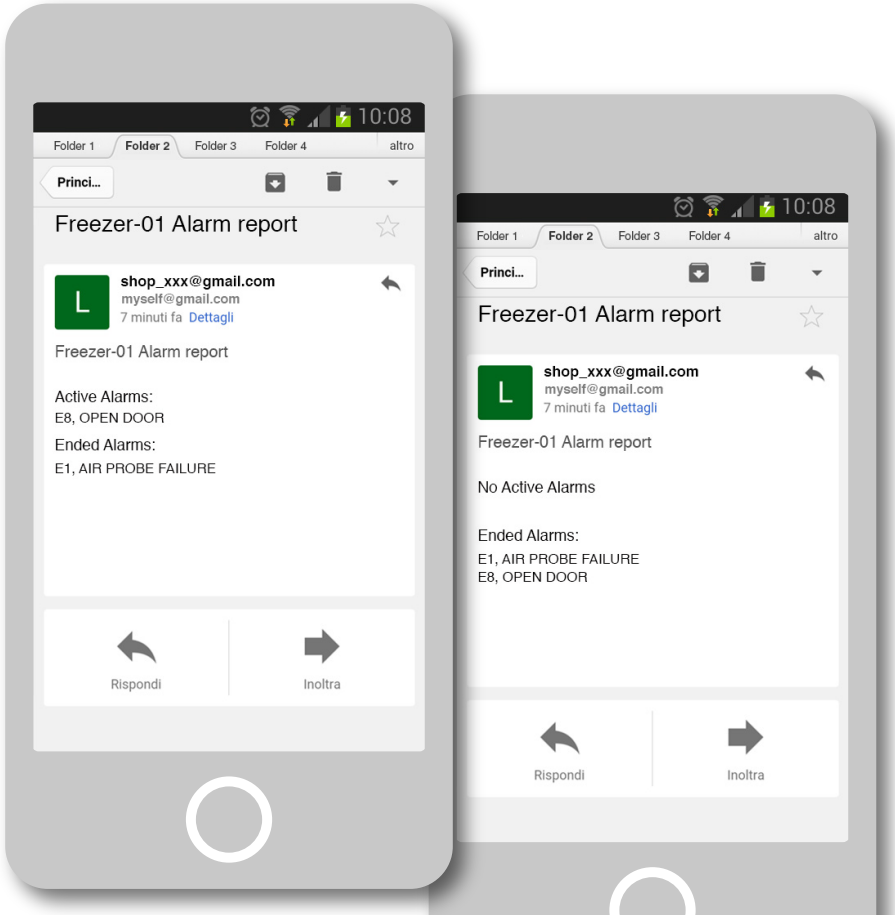


*Figure **14***
*E-mail example – alarm start*




*Figure **15***
*E-mail example – alarm end*

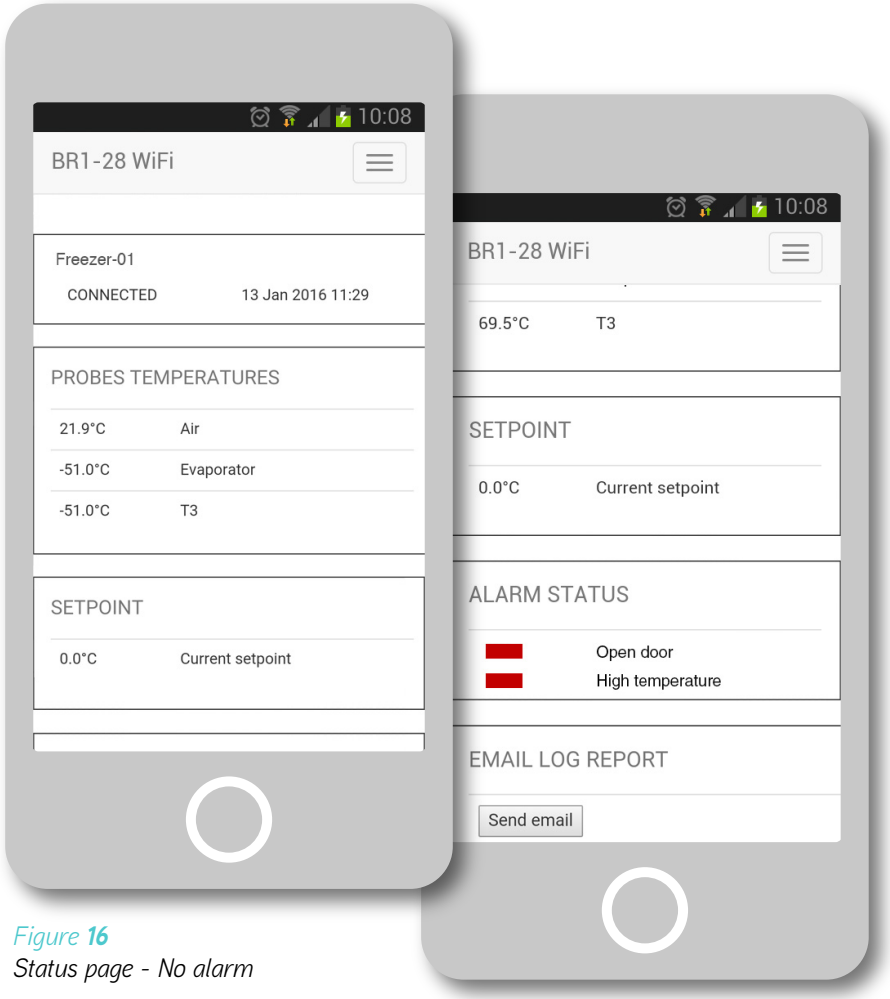


*Figure **16***
*Status page - No alarm*

*Figure **17***
*Status page - Alarm*

# Status page contents

In the status page, a summary of the parameters and alarm status will appear.

If there are no alarms in progress, the alarm indicator is colour green, otherwise the alarms in progress are displayed with the red indicator and a short description (*Figure **17***)

As a plus, we offer the option to send a log mail instantly by pressing button "Send email" at the bottom of the home window.

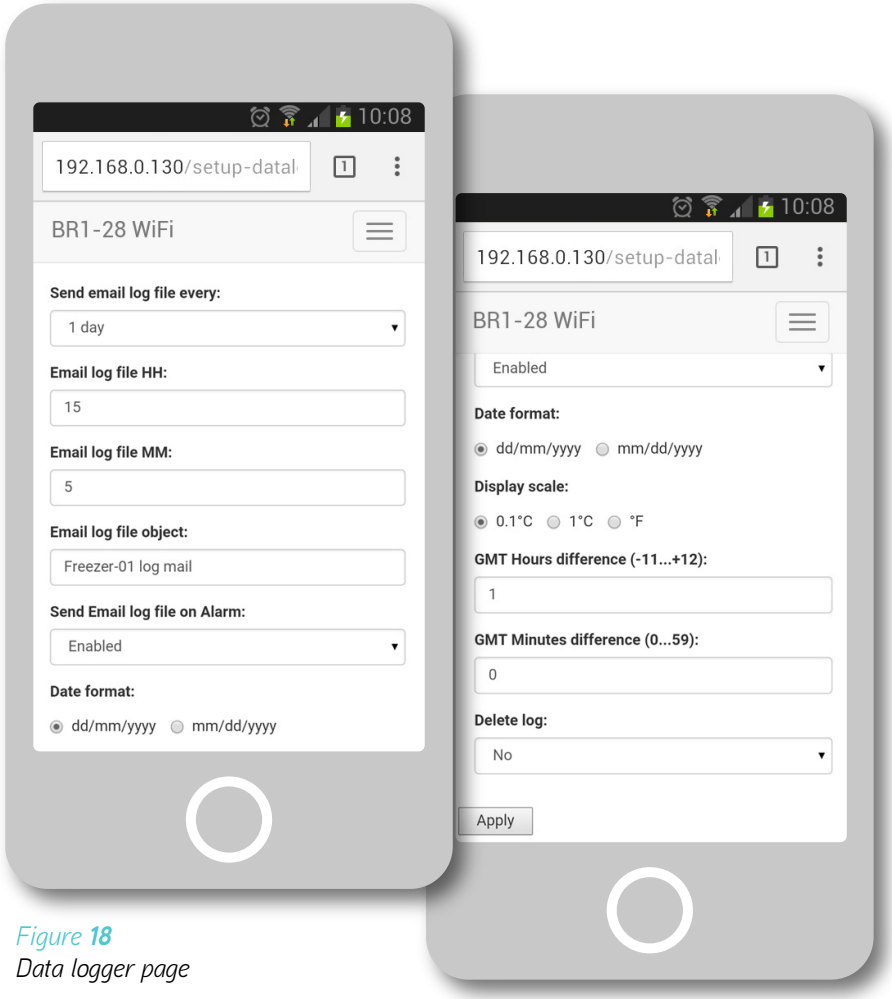


*Figure **18***
*Data logger page*

*Figure **19***
*Data logger page*

# DATA LOGGER SETUP

Data logging is an important function for the diagnostics of the controlled system. The WiFi module, in addition to data logging, may also be programmed to send a mail at regular intervals, with the data formatted in such a manner as to be analysed with a spreadsheet or simply saved on a PC.

The WiFi module uses the GMT time as internal clock, read from Internet. It shall therefore be necessary to correct the clock to obtain the local time. To adjust the date, time zone and temperature scale, go to "Data Logger" and follow the instructions here below:

**Log function configuration**

1. In the pull-down menu, select option Setting > Data logger.

2. Select the temperature readout and display unit (*Figure **19***):
   a) 0.1°C = degrees Celsius with 0.1° resolution
   b) 1°C = 1°C resolution
   c) °F = degrees Fahrenheit

3. Type in the difference in hours and minutes of the local time in comparison to GMT

4. Press "Apply" to save the new configuration

The temperature and alarm sampling rate is 5 minutes.

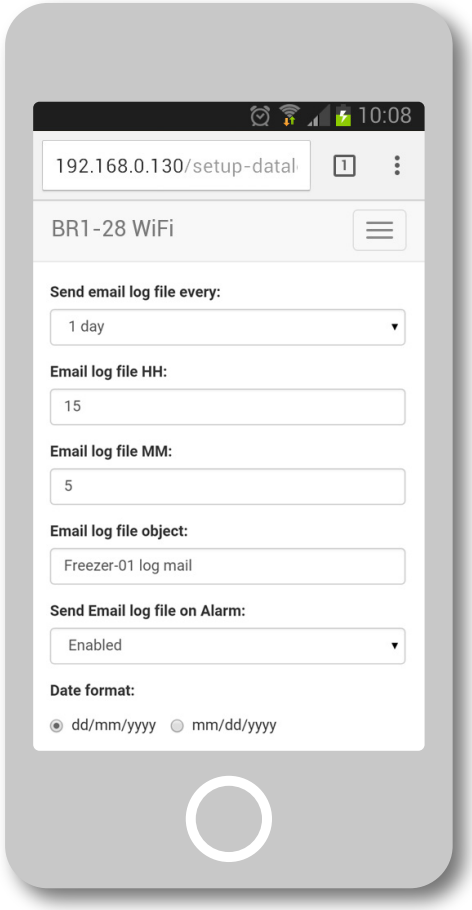


*Figure **18***
*Data logger page*

**Mail configuration**

5. If you wish to receive the logged data in a mail at regular intervals and automatically, select the frequency (1, 2 or 3 days).

6. ...and the time in HH and MM.

7. Fill in the mail object with a suitable description.

8. If you wish that in conjunction with a new alarm mail, the log of the latest 24 hours is sent too, select "Enabled" in the field "Send E-mail log file on Alarm".


*Figure **20***

*Figura **21***

To display the sampling data archive, get in "Log" bearing in mind the notes here below:

- On top the name assigned to the device appears
- The data are arranged in chronological order, from the most recent (top) to the previous ones (page bottom)
- If the module is online in Station mode, in the first two columns, date and time of sampling appear (*Figure **20***). Differently, if the module is working in Access Point mode, so no connection to Internet, date and time will be replaced by a progressive number (*Figure **21***).
- A series of columns will appear displaying temperatures and alarms, see image at the side
- A power supply interruption will be signalled by a sequence of "="

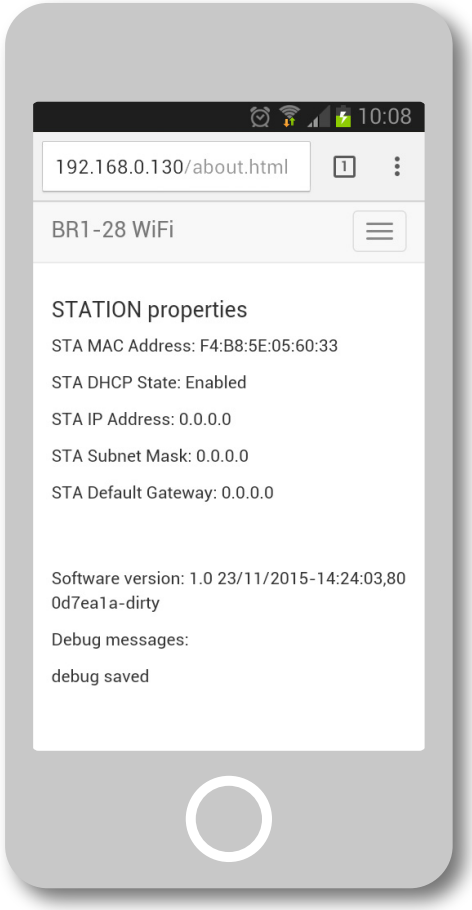


*Figure **22***
*About page*

# INFORMATION SUMMARY

The "About" page includes an information summary relevant to the device settings: MAC ADDRESS, DHCP status, IP settings, if any, and Software release.

1. To get access to this section, in the pull-down menu select option "About" (*Figure **22***)


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