

BS-t2 WiFi - Two-channel thermometer-logger with WiFi access

User manual V4.xx

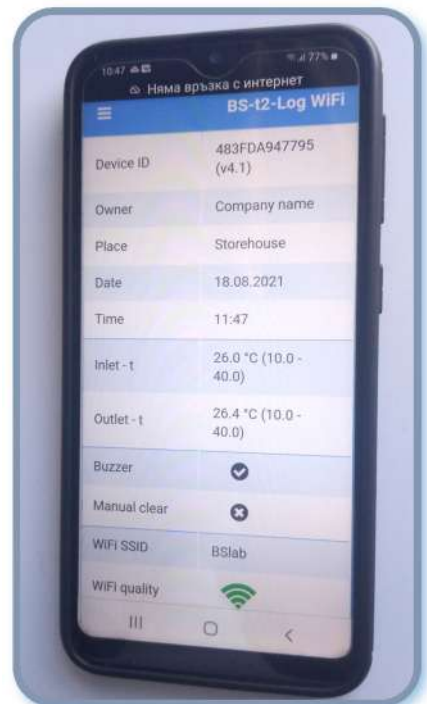


Application:

- Warehouses for medicines
- Food warehouses
- Travel
- Dryers
- Cellars
- Beehives
- Fungi
- Greenhouses
- Refrigerators
- Server rooms
- Animal surveillance
- Heating monitoring

Features:

- Measures, indicates and records temperature in the range from -40 ° C to +125 ° C from two digital cable sensors external to the device
- Graphic display showing the last 15 saved reports
- Exports entries to a tabular .CSV file or a .TXT tabbed file
- Two-color LED indication for remote alarm monitoring
- Sound signal at lower or higher than the set temperature, possibility to mute the sound
- Sends email messages with graphical display of temperatures outside the limits
- Sends data to site: <https://www.mydatalogger.eu> available with QR code on the panel



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Turn on the power. About 16 seconds after the screen is activated, it is possible to configure the logger via a smartphone, tablet or laptop.

Scan the available nets near 30 meters from the device and find the factory name of the logger: **BS-T2-Log WiFi**.

Select a connection to the available network and enter the factory password: **1 2 3 4 5 6 7 8**.

The default web browser on your smart device will open automatically.

The phone screen looks like this:

BS-t2-Log WiFi	
Device ID	483FDA947795 (v4.1)
Owner	Company name
Place	Storehouse
Date	18.08.2021
Time	12:34
Inlet - t	25.9 °C (10.0 - 40.0)
Outlet - t	26.2 °C (10.0 - 40.0)
Buzzer	<input checked="" type="checkbox"/>
Manual clear	<input type="checkbox"/>
WiFi SSID	BSlab
WiFi quality	
Server connection	<input checked="" type="checkbox"/>

www.bisersystems.com

In case it does not open automatically (depending on the Android version) type the following address manually in a browser:

192.168.4.1



Button for menus and settings

Factory network name

Identification number and version

Company / owner name
(subject to change)

Name of the place of installation
(subject to change)

Date and time of embedded in
the clock device

Measured temperature by sensor 1.
Adjusted lower and upper limit in parentheses

Client label / pointer sensor 1
(subject to change)

Status of the audible alarm
enabled or disabled

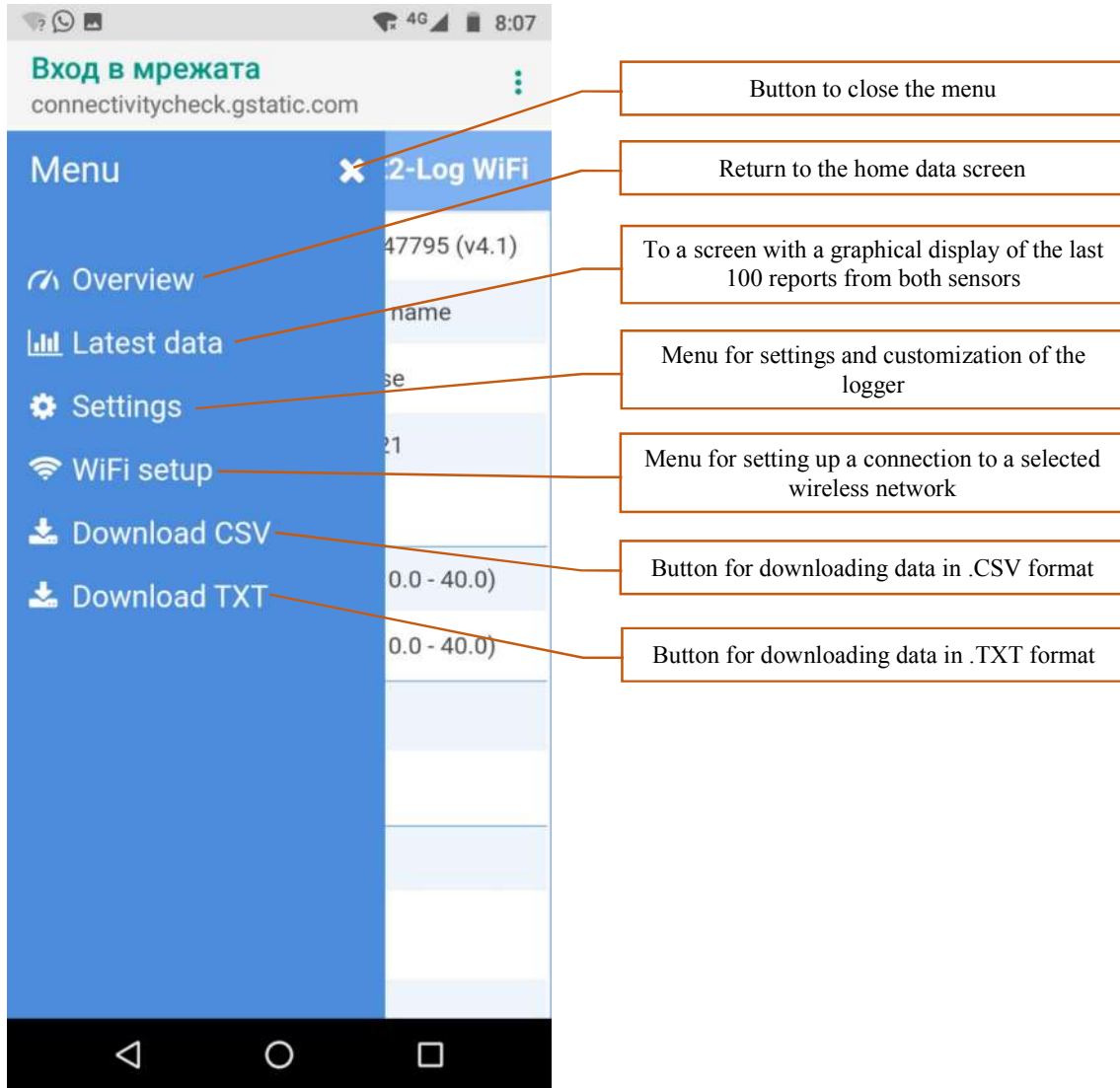
Memory deletion
allowed or disabled

Name of the wireless network to which the
logger is connected and connection quality

Data server connection status:
www.mydatalogger.eu

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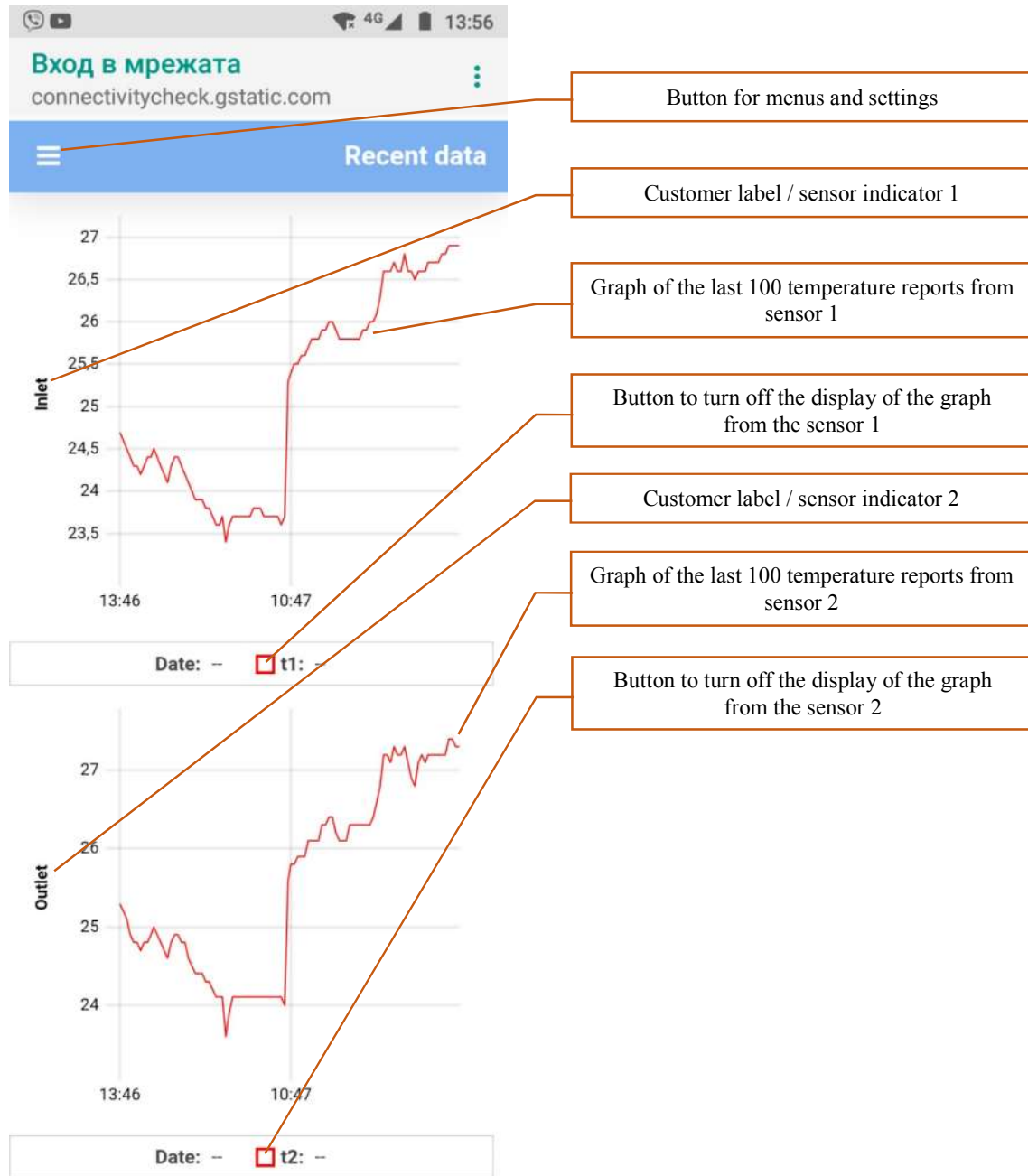
After clicking the Menu and Settings button, the screen looks like this:



A button for menus and settings can be called up from all operating screens.

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After clicking the **Latest Data** menu, the screen looks like this:



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After clicking the **Settings** menu, the screen looks like this:

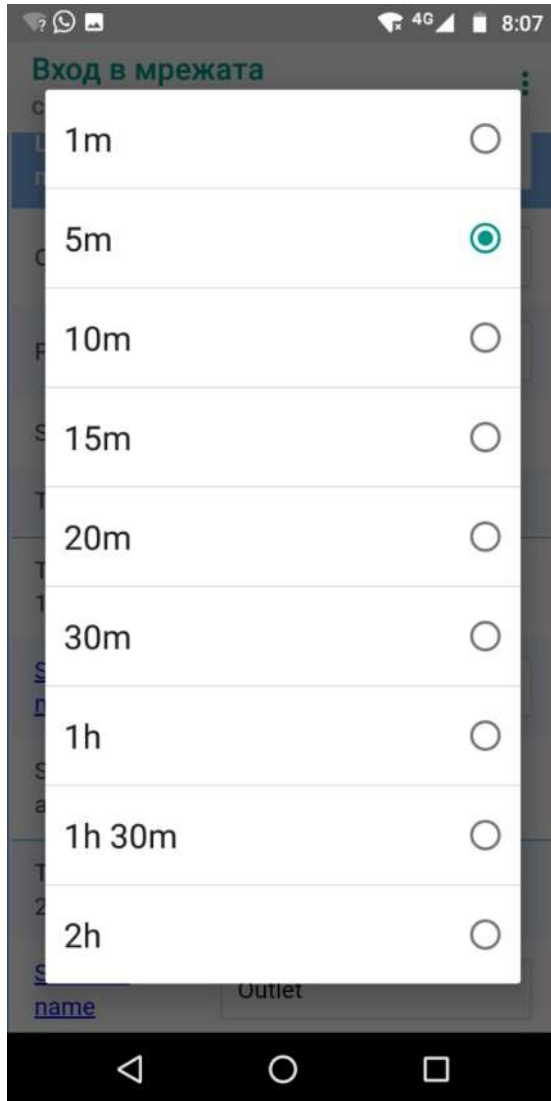
The screenshot shows the settings interface for the BS-t2-Log WiFi logger. The interface is organized into several sections, each with a callout box explaining its function:

- Logger name:** A text field containing "BS-t2-Log WiFi". Callout: "Name of the wireless network (Access Point) broadcast by the logger. **Change with Latin characters.**"
- Owner:** A text field containing "Company name". Callout: "Name of the company that owns the camp. **Change with Latin characters.**"
- Place:** A text field containing "Storehouse". Callout: "Place of installation of the camp. **Change with Latin characters.**"
- Sample rate:** A dropdown menu set to "5m". Callout: "Data recording time interval **Opens a drop-down menu**"
- Time zone:** A dropdown menu set to "UTC+3". Callout: "Choice of time zone **Opens a drop-down menu**"
- Temperature 1 limits:** Two input fields containing "10,00" and "40,00" separated by a minus sign. Callout: "Lower and Upper temperature limit for triggering an alarm from Sensor 1. **Fill in the number only with a sign.**"
- Sensor 1 name:** A text field containing "Inlet". Callout: "Additional sensor label / pointer 1 **Change with Latin characters.**"
- Temperature 2 limits:** Two input fields containing "10,00" and "40,00" separated by a minus sign. Callout: "Sensor calibration menu link 1"
- Sensor 2 name:** A text field containing "Outlet". Callout: "Additional label / indicator of Sensor 2 **Change with Latin characters.**"
- Unit:** Two radio buttons, "°C" (selected) and "°F". Callout: "Sensor calibration menu link 2"
- Buzzer:** A toggle switch that is currently turned on. Callout: "Buttons for selecting the readings in degrees Celsius or Fahrenheit"
- Manual clear:** A toggle switch that is currently turned off. Callout: "Buttons for enabling audible alarm when crossing the Upper or Lower temperature limit"
- Faulty sensor detection:** A dropdown menu set to "15s". Callout: "Button for manual memory erasure"
- WiFi AP password:** A text field containing "12345678" and a "Show on screen" toggle switch. Callout: "Time to check for missing sensor"
- Set time from browser:** A toggle switch that is currently turned off. Callout: "Password of the broadcast network **Change with Latin characters.**"
- SAVE:** A green button at the bottom of the screen. Callout: "Button to allow the password to be displayed on the screen"
- SAVE:** A green button at the bottom of the screen. Callout: "Button for selecting the time of the logger to be checked by the device with which you access it or to be taken from the Internet"
- SAVE:** A green button at the bottom of the screen. Callout: "Button to save the settings"

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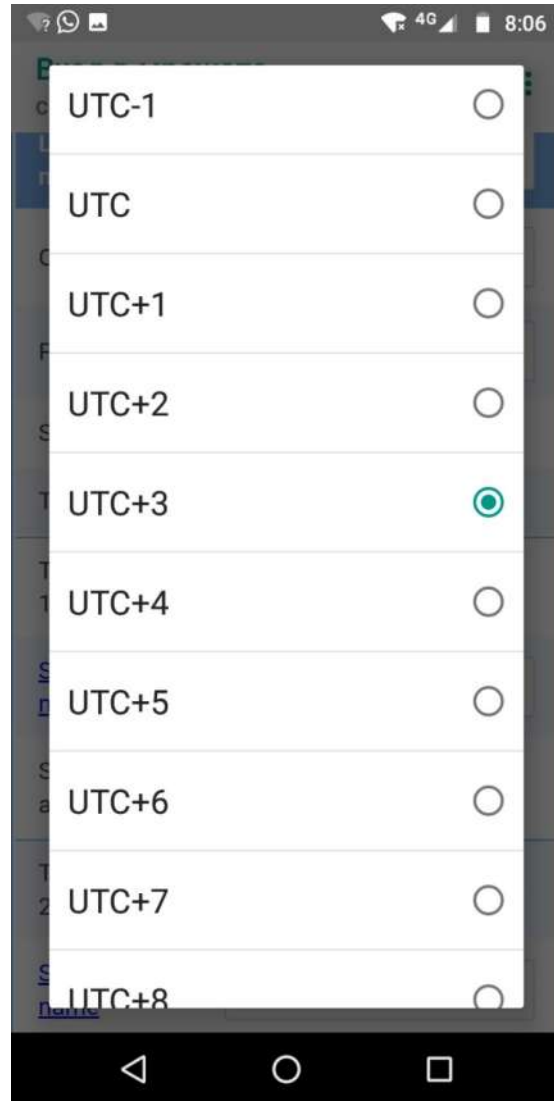
The fields above, highlighted in gray, are transmitted from the logger to the data server and reflected in the alarm email. It is desirable that they be filled in by the user to bring additional clarifications of where the alarm was generated.

Clicking a time interval to save data opens the following drop-down menu:



Clicking the selected time interval closes it and needs the **SAVE** button to save and apply the new selection.

Clicking the time zone selection opens the following drop-down menu:



You need to know the time zone of the country in which the device is installed.

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Loggers with firmware version 4.XX and higher have the ability to make a calibration correction in the reading of both sensors.

Clicking on the link for the calibration menu of the sensors opens extended fields with the possibility to fill in a correction in the range +/- 3.00 degrees for each sensor.

The screenshot shows a mobile application interface for calibrating a dual-channel recording thermometer. The interface is titled "Вход в мрежата" (Network Access) and is from the website connectivitycheck.gstatic.com. It features several settings sections:

- Sensor 1 name:** Inlet
- Sensor 1 adjust:** 0,45 (range: -3.0 ÷ 3.0)
- Temperature 2 limits:** 10,00 - 40,00
- Sensor 2 name:** Outlet
- Sensor 2 adjust:** -1,25 (range: -3.0 ÷ 3.0)
- Unit:** °C (selected) or °F
- Buzzer:** On (toggle)
- Manual clear:** Off (toggle)
- Faulty sensor detection:** 15s (dropdown)

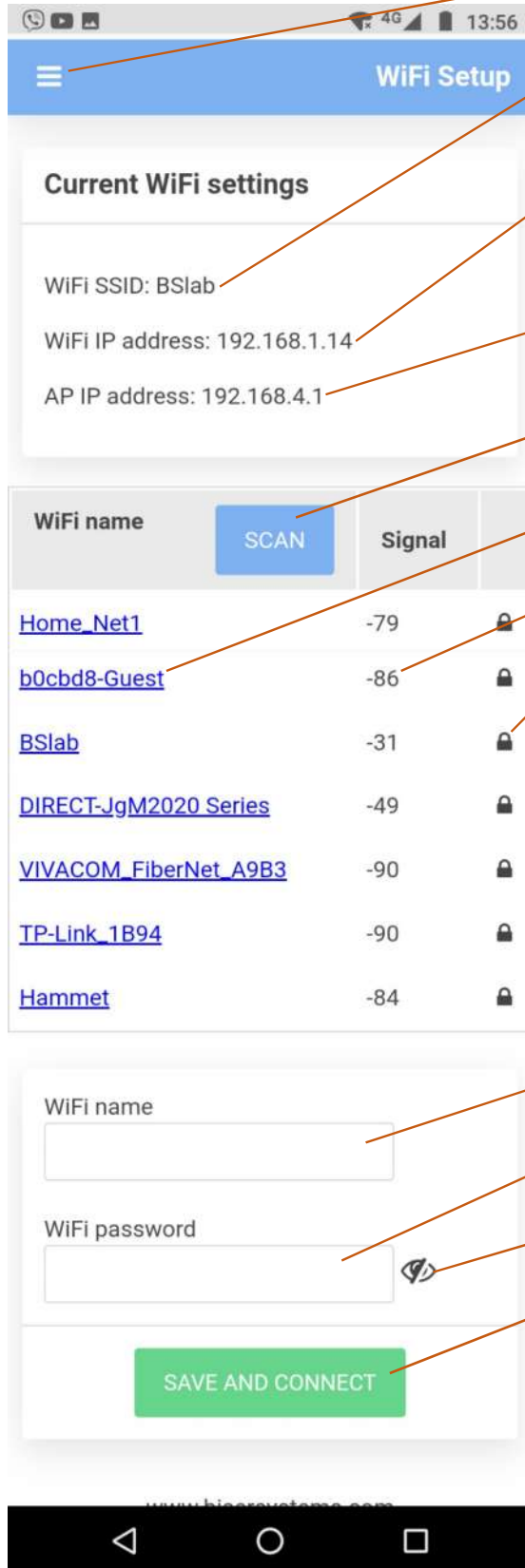
Two callout boxes provide additional information:

- One box points to the "Sensor 1 adjust" field, stating: "Sensor 1 correction has been introduced (+) add 0,45".
- Another box points to the "Sensor 2 adjust" field, stating: "Sensor 2 correction has been introduced (-) subtraction of 1,25".

The manufacturer shall inform each logger owner that an adjustment is made only after a calibration protocol from a certified laboratory, and not for the purpose of intentionally distorting the data.

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Clicking WiFi Setup changes the screen for setting up a connection to a selected wireless network, as shown in the photo below:



Button for menus and settings

Name of the network to which it is currently connected

Local IP address assigned by the router to the network to which it is currently connected. It is displayed on one of the work screens

IP address for connection to the logger via Access Point (AP)

Button for scanning the networks available in the camp area

Sheet with the names of the networks found after scanning

Signal strength indicator for each network

Free or password protected indicator

After scanning the available networks, the user must indicate to the logger to which to be connected. The logger will remember the network name and password entered in the two fields on the WiFi settings screen after pressing the **SAVE AND CONNECT** button. It will reboot in about 10-15 seconds and on the second of the working screens it will indicate if it is connected and with which local IP address it is available in this network.

Clicking on the name of a selected network fills in its name in this field

Field for manually filling in the password

The password field should be visible

Button: **Save and Connect**

As long as your smart device is on this network, you don't need to disconnect from it to access the logger through Access Point. Use the local IP address with each browser.

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Download data from the logger in .CSV format.
Excel opens.

The screenshot shows an Excel spreadsheet with the following data:

	A	B	C	D	E
1	Device name: BS-T2-Log WiFi				
2	Device ID: F4CFA2C098E4				
3	Place: Storehouse				
4	Owner: Company name				
5					
6	Date	Time	t1 °C	t2 °C	
7					
8	14.05.2020	22:17	24.6	24.4	
9	14.05.2020	22:07	24.4	24.2	
10	14.05.2020	21:57	24.4	24.2	
11	14.05.2020	21:47	24.3	24	
12	14.05.2020	21:37	24.5	24.2	
13	14.05.2020	21:27	24.4	24.1	
14	14.05.2020	21:17	24.3	24.1	
15	14.05.2020	21:07	24.7	24.4	
16	14.05.2020	20:57	24.6	24.3	
17	14.05.2020	20:47	24.8	24.6	
18	14.05.2020	20:37	25	24.8	
19	14.05.2020	20:27	24.9	24.7	

Annotations in the image explain the following elements:

- The selected logger name that you changed with the settings.
- Logger ID that cannot be changed.
- Logger mount location that you changed with the settings.
- The name of the company that owns the logger, which you changed with the settings.
- Column indicators: Date, Time, Temperature from sensor 1, Temperature from sensor 2, Celsius or Fahrenheit.
- Extracted data from the logger memory in tabular form.

A downloaded data file in .TXT format looks similar. The columns are separated by tabs. It opens with any text editor, as well as with Excel.

The Notepad window shows the following data:

```

Device name: BS-T2-Log WiFi
Device ID: F4CFA2C098E4
Place: Storehouse
Owner: Company name

Date           Time      t1 °C   t2 °C
14.05.2020    13:08    23.9    23.8
14.05.2020    13:07    23.9    23.9
14.05.2020    13:06    24.1    24.1
14.05.2020    13:05    24.2    24.3
14.05.2020    13:04    24.3    24.5
14.05.2020    13:03    24.6    24.8
14.05.2020    13:02    24.8    25.1
14.05.2020    13:01    25.2    25.7
14.05.2020    13:00    25.8    26.4
14.05.2020    12:59    26.7    27.4
14.05.2020    12:58    28.3    29.0
14.05.2020    12:57    26.9    26.6
14.05.2020    12:56    24.5    27.4
14.05.2020    12:55    24.8    28.4
14.05.2020    12:54    24.6    28.1
14.05.2020    12:53    24.6    23.9
14.05.2020    12:52    24.6    23.9
14.05.2020    12:51    24.6    23.9
14.05.2020    12:50    24.5    23.8
14.05.2020    12:49    24.5    23.8
    
```

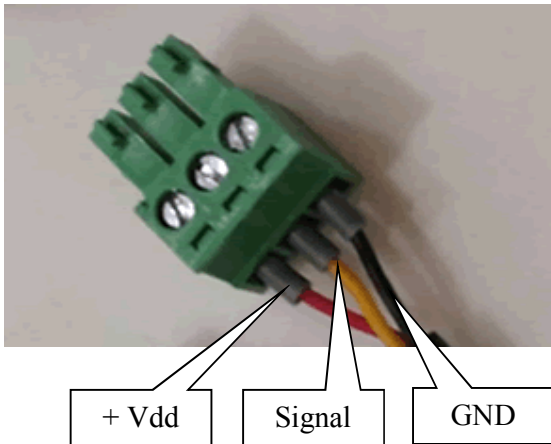
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Temperature sensors external to the device are connected to the bottom of the device. In the left terminal is sensor 1, and in the right terminal is sensor 2.

The device is powered by DC 5V via a cable with USB Plug A, halfway between the sensor terminals.



Use the description of the connections in the temperature sensor terminals to pass a sensor through a hole in a wall or extend a temperature sensor cable.



It is not allowed to power external consumers using the specified terminals + Vdd and GND.

After the router's power is turned off or restarted, it may assign a different IP address to the logger than before. The IP address of the logger is always displayed on one of the auto-scroll screens.

If there is no connection, the IP address is:
0.0.0.0

The operating screens with the necessary monitoring information from the logger are changed automatically every 8 seconds. A short press on the panel button "scrolls" the display to the next screen.

Pressing and holding the button for 6-7 seconds deletes all data in the logger.



There is a time of 10 seconds during which you can cancel the deletion by briefly pressing the panel button. If the time expires, all memory temperature data is deleted.

Pressing and holding the button for more than 12 seconds restores the factory settings.



The following data is deleted: network name and password, device name, installation location, owner name, temperature limits and calibration corrections for both sensors.

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A two-color, LED indicator is built into the front panel above each sensor terminal. Illuminates red when the temperature for the respective sensor exceeds the set upper limit or green when the lower limit is crossed.



Indicator for which of the two sensors is the displayed graphic

Empty dots in the graph - the temperature is above the set upper limit

A dotted line shows the level of the set upper limit

Solid points in the graph - before 11 reports the temperature was below the set upper limit

Red indicator - the temperature from sensor 1 is currently above the set upper limit

The indicator lights cannot be switched off. Turn off when the temperature of the respective sensor measured every second is above the set lower and below the set upper limit.

Triggering a border crossing alarm is accompanied by a short beep if enabled by the settings.

When crossing the upper limit, a 3-tone ascending one is played every minute, and when lowering - lower.



Solid points in the graph - 8 reports from the temperature history of sensor 2 was above the set lower limit

Empty dots in the graph - the temperature is below the set lower limit

Green indicator - the temperature from sensor 2 is currently below the set lower limit

The history of the history of the last 15 reports uses solid and empty dots depending on the temperature inside or outside.

If the camp is online, ie. connected to a WiFi network with the Internet and the client has an active account on the site:

<https://www.mydatalogger.eu>

each border crossing sends an alarm email to the customer's address.

If the set limit is within the displayed temperature range, it is displayed as a thin, dotted line.

The message contains text with the name of the logger, the name of the owner, the name of the sensor, the place of installation, the type of alarm and the schedule of the event.

Loggers sending alarms to an inactive account do not send email to the client, but their data is received and saved by the server.

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Email from a real account generated when crossing an upper limit.



If the logger works Off line, ie. is not connected to a wireless network with the Internet or is far away, continues to record temperatures during the set time interval. When returning the logger to wireless range or submitting it to a Hot Spot from a smart device in the field, the logger transmits all unsent entries to the data site, where it is possible to view them graphically without generating retrospective alarms. Within 30 minutes it is possible for the logger to hand over all old records after being in offline conditions for 2 weeks. Every minute, 100 undelivered records are transmitted for both temperatures, accompanied by their date and time.

Data from the BS-T2 WiFi camp monitored through the data site:

<https://www.mydatalogger.eu>

A real client account on the site can serve one or more devices. It has a button to download a data file from each logger in .CSV format.

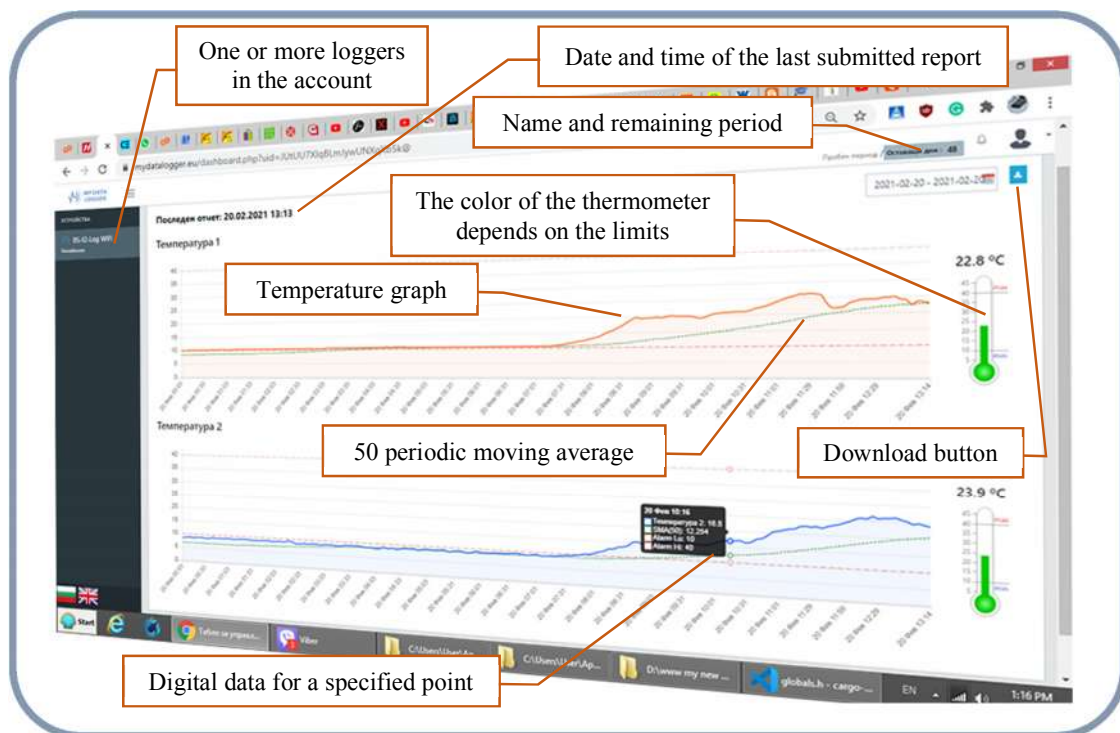
You can select the displayed history for a day, the last 7 days, the last month or a selected date on the calendar.

A calculated 50-period moving average is plotted on the graphs to visualize the trend / trend of temperature change.

The last transmitted temperature is displayed on the right side of the graph with color thermometers. They are colored in different colors depending on the crossing of the borders.

The upper and lower limits set in the camp are also drawn on the graph. Navigating the graph of past reports opens a small field with additional information in digital format.

If a downloaded account is paid for again for a new period, it is unlocked for use. It shows all the data transmitted by the camp for the period in which the account was inactive.



Notes:

Contact with the manufacturer:

e-mail: support@bisersystems.com

e-mail: laboratory@bisersystems.com

<https://www.bisersystems.com/>

Viber, Telegram, WhatsApp: +359 898 45 93 36