



VestaLog 700 Temperature and Humidity Logger continuously monitors and stores temperature and relative humidity levels over time. Designed in a robust waterproof casing it can be used outdoor or in-door. The logger features highly accurate combined temperature and relative humidity sensor with a wide range, internal flash storage, WIFI, built-in web server and MQTT client. Key Features:

- **Weather-Proof Enclosure:** Built to withstand outdoor conditions, ensuring long-term durability and reliability (NEMA, IP65, UV Stabilized).
- **Integrated Temperature and Humidity Sensor:** provides accurate and reliable measurements.
- **Internal Flash Storage:** ensuring data integrity and availability.
- **Real-Time Clock:** With an internal battery backup, ensures accurate time-stamping of all records.
- **Autonomous Operation:** Runs on a D cell high energy density user replaceable battery, providing 1-2 years of maintenance-free operation.
- **Built-in WiFi and Web Server:** For easy configuration and status monitoring.
- **Configurable MQTT Client:** Allows for real-time data transmission while logging measurements to internal storage.

## Technical Specifications

<i>TEMPERATURE SENSOR</i>	
Maximum Range	-40 C .. +85 C
Accuracy Tolerance	+ - 0.3 C
Resolution	0.01 C
<i>RELATIVE HUMIDITY SENSOR</i>	
Accuracy Tolerance	+ - 2 %RH
Resolution	0.01 %RH
<i>INTERNAL STORAGE</i>	
Number of Records	100000
<i>BATTERY</i>	
Battery Type	Lithium D Cell, user replaceable
Capacity	19000 mAh
Voltage	3.6V
Operating Range	-40 C .. +85 C
Expected life	1-2 years, depending on logger configuraton
<i>WIFI</i>	
Standards & Protocols	IEEE 802.11 b/g/n, 2.4 GHz, AP/STA modes
Communication Range	30 meters indoor / 50 meters outdoor typical
<i>SOFTWARE</i>	
Supported Protocols / Features	DHCP, TCP/IP, WEB SERVER, MQTT CLIENT

## Logger Controls and Operation



### WIFI / Wake-up button:

Normally the logger operates in low power sleep mode waking up briefly at logging intervals. To activate logger WIFI in AP (access point) mode – press WIFI button. The logger shall advertise its SSID on WiFi network and you can connect to it using default or configured password.

The logger WiFi SSID has the form VESTALOG\_xxxxxx – the ending characters are unique for each device.

The default password is 123456789.

After WIFI client has connected, the logger starts a WEB server on IP address: 192.168.4.1 port 80. You can connect to it to configure the logger, view current status and to download measurements log.

The WIFI mode ends with a configured inactivity timeout (default = 15 mins) and the logger goes back to low power sleep mode.

A continuous press of WIFI / Wake-up button for over 10 seconds performs a hardware reset to factory defaults, which is confirmed by Status LED blinking.

**ATTENTION:** factory defaults reset also deletes current sensor log from internal storage !

### Status LED:

Blinking of status LED indicates that the logger has come out of low power mode into active operation mode. This happens on WIFI button press and at configured logging intervals.

## FIRST TIME USE

To conserve internal storage and battery power, the logger is shipped with logging interval set to “Disabled”. The sensor log is empty.

First press on a WIFI button starts logging and configures the logging interval to a default value of 15 minutes.

## NORMAL OPERATION

The logger operates normally in low power mode at wakes up at configured logging interval (default is 15 minutes). Once awake the logger measures temperature and humidity and logs next entry in the sensor log in the internal storage.

If configured to do so, at this time the logger also connects to a specified WIFI SSID in client mode, then connects using MQTT protocol to a configured MQTT server and sends an MQTT publish message containing the taken temperature and humidity measurement.

After this action, the logger returns to low power mode.

To configure the logger, view current status and download sensor log, the user can activate WIFI by pressing WIFI button and connecting to the internal web server on IP address: 192.168.4.1 port 80.

In addition the logger can activate WIFI and the web server daily at configured hour. The WIFI will remain active for the time of idle timeout (default is 15 minutes).

and second and click "Set TIME" button. To return to main screen, click [ Main Dashboard ]

### Configuring The Logger



To start configuring the logger, press WIFI button.

On your WIFI enabled device (phone, laptop, tablet or PC) search for WIFI SSID in the form: VESTALOG\_XXXXXX (the ending characters are unique for each logger). Enter configured WIFI password: (default is 1923456789)

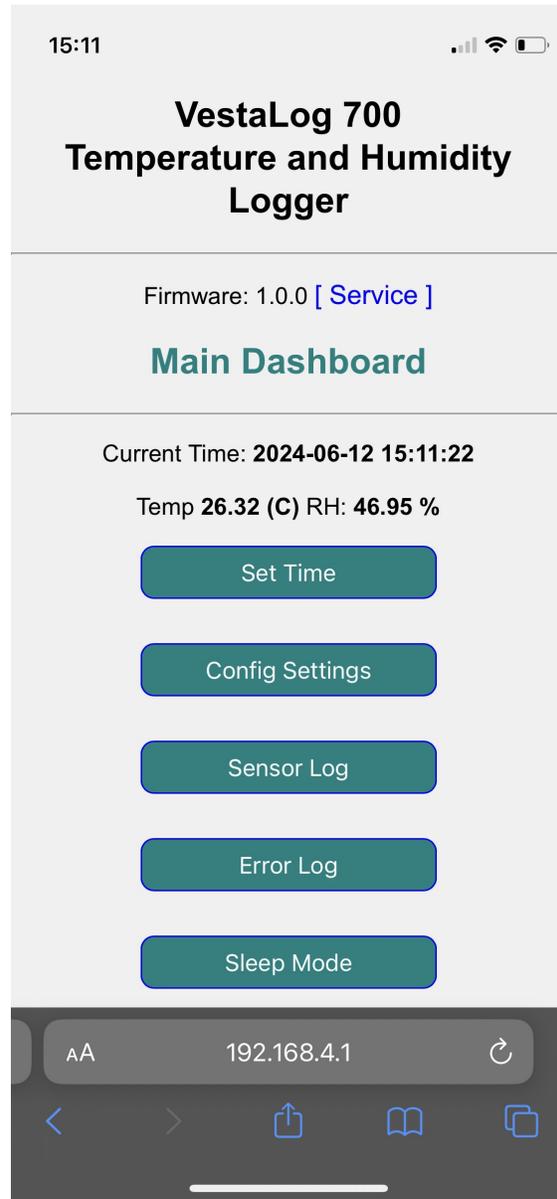
Using any web browser on your device, browse to 192.168.4.1

You will be presented with the Main Dashboard screen where you can view the current time, temperature and humidity and can go to logger configuration of sensor and error logs

### Setting Time

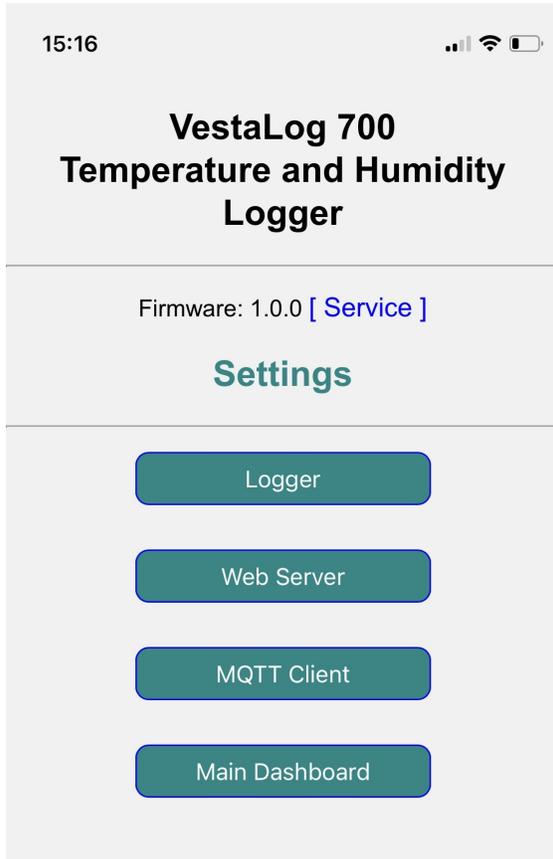
The logger is shipped with the internal clock set to CEST (Central Eastern European Time)

If you need to change the time to match your timezone, click the "Set Time" button, enter the necessary values for year, month, day, hour, minute



## Configuration Menu

To configure various aspects of the logger operation click “Config Settings” button. You will be presented with the following screen:

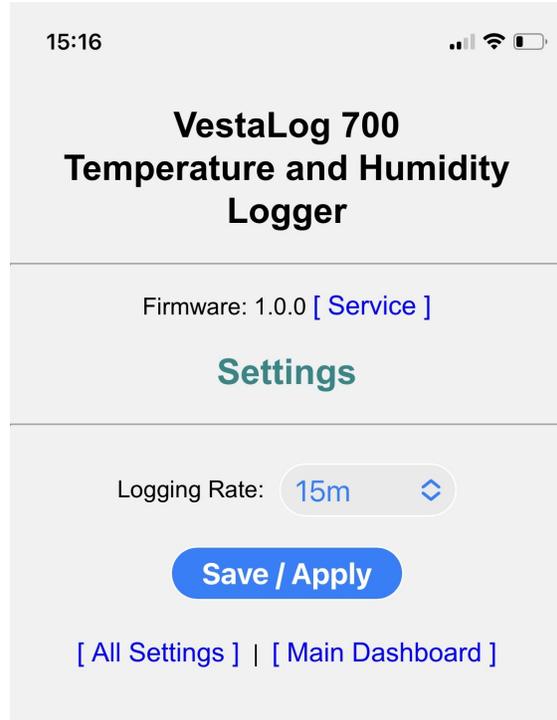


By clicking the relevant button you can access the required part of configuration:

- \* Logging intervals,
- \* web server related configuration,
- \* MQTT client configuration

## Logger Configuration

To configure logger settings, click “Logger” button. You will see the following screen:

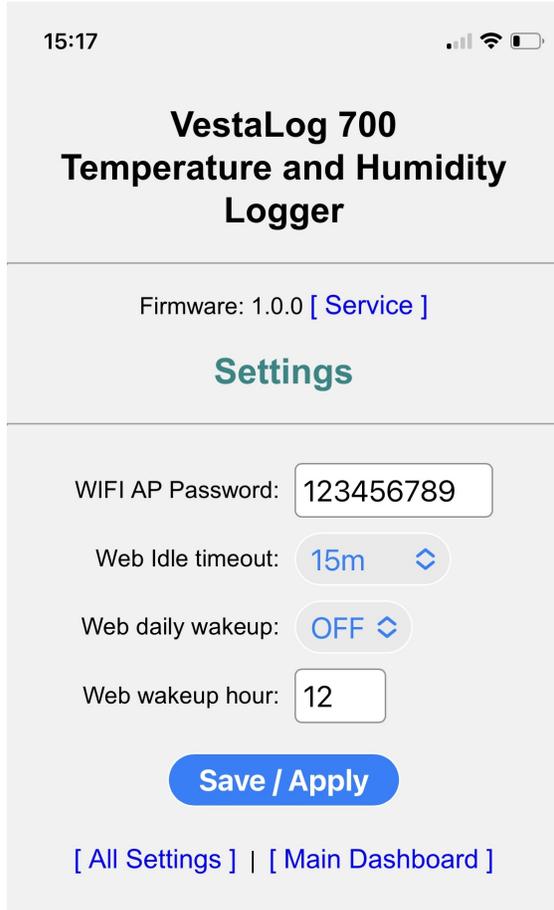


Logging rate selects the interval at which the logger wakes up from low power mode, takes the measurements of temperature and humidity and records the result to the sensor log in internal storage. The logging rate can be configured from every 1 minute to every 24 hours. It can also be disabled by setting the selection to “Disabled”. The default value is every 15 minutes.

After selecting the desired logging rate, click “Save / Apply” button. From here you can return to top level configuration menu or to main dashboard by clicking “All Settings” or “Main Dashboard”

## Web Server Configuration

To change internal web server settings, click “Web Server” button. You will see the following page:



When you click WIFI button the logger comes out of low power mode and starts WIFI in AP (access point) mode with SSID in the form VESTALOG\_XXXXXX and the default password 123456789. This password can be changed in the WIFI AP Password field.

Web Idle timeout defines the time the WIFI and web server remain turned on after last user activity using the web server. In case there was no activity for the configured web idle timeout, the logger returns to low power sleep mode. The default value of web idle timeout is 15 minutes.

Additionally the WIFI and the web server can be configured to automatically turn on daily at specified hour. To achieve it, set the field “Web daily wakeup” to “ON” and set the Web wakeup hour to the desired hour of the day (from 0 to 23). By default the web daily wakeup is disabled.

To apply the settings click “Save / Apply”

## Configuring MQTT Client

Message Queueing Telemetry Transport protocol client can be optionally enabled by clicking the “MQTT Client” button (by default the MQTT client is disabled)

When enabled, the logger shall send the measured temperature and humidity with the current timestamp to a configured MQTT server when it wakes up and takes the measurements at configured logging rate, in addition to storing the readings to the sensor log.

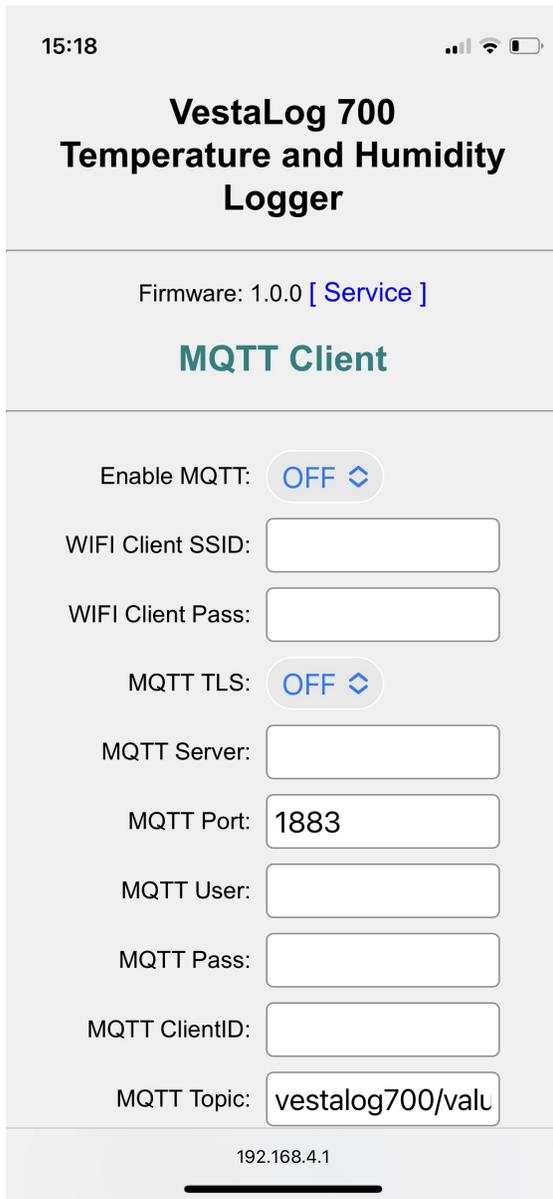
To do this, the logger first enables WIFI in client mode and connects to the configured WIFI SSID using the configured password, then it connects to an MQTT server, optionally using SSL/TLS connection and sends a publish message containing the current readings.

Example publish message content (depending on configured payload format:

“time: 2024-06-11 19:08:17, temp: 27.22, humidity 49.81” or

“{“2024-06-11 19:08:17”},{“27.22”},{“49.81”}”

To configure MQTT client, click the “MQTT Client” button. You will be presented with the following screen:



Set the MQTT server's IP address or DNS name in the MQTT server field. The maximum size of this field is 63 characters.

Set the MQTT server's port in the MQTT port field. Normally port 1883 is used for plain non-TLS connection and port 8883 is used for TLS connection.

If your MQTT server requires it, set the MQTT User and Pass fields. The maximum size of these fields is 63 characters.

If your MQTT server requires it, set the MQTT ClientID field. The maximum size of this field is 63 characters.

Set the desired MQTT topic name to where the messages shall be published in the MQTT topic field. The maximum size of this field is 127 characters. The default setting is : "vestalog700/values"

To set the payload format of MQTT publish messages set the value of MQTT payload field to "Default" or "Thingsboard".

Default format looks as follows:

"time: 2024-06-11 19:08:17, temp: 27.22, humidity 49.81"

The "Thingsboard" format expected by Thingsboard IOT platform looks as follows:

"{"2024-06-11 19:08:17"}, {"27.22"}, {"49.81"}"

When finished configuring the fields, click "Save / Apply".

To enable MQTT client set the "Enable MQTT" to "ON". (Default = OFF)

Configure SSID and Password to your network's SSID and password.

If TLS requires to be enabled by your MQTT server, set MQTT TLS to "ON". (default = OFF).

## Sensor Log

To view and download the stored measurements, click "Sensor Log" from the Main Dashboard, you will be presented with the following screen:

21:41

**VestaLog 700  
Temperature and Humidity  
Logger**

Firmware: 1.0.0 [ [Service](#) ]

**Sensor Log**

[First](#) | [Prev](#) | [Next](#) | [Last](#) (21)

#	Time	Temp(C)	RH
0	2024-06-12 15:10:52	26.35	47.38
1	2024-06-12 21:22:32	26.95	47.4
2	2024-06-12 21:24:29	26.87	47.0
3	2024-06-12 21:25:29	26.78	47.22
4	2024-06-12 21:26:29	26.67	47.40

[\[ Download as CSV \]](#)

"Yes" to confirm:  [Reset Log](#)

[\[ Main Dashboard \]](#)

Logger internal storage supports a maximum of 100000 records. When the maximum is reached the next reading overflows back to first record.

You can browse the records by clicking "First", "Prev", "Next" and "Last" Buttons. The number in beside the "Last" link shows current number of records stored in the sensor log.

To download the sensor log, click "Download as CSV" link. A file will get downloaded to your device (usually in Downloads). The CSV file has the following format:

```
"date";"time";"temperature";"humidity"
2024-06-12;15:10:52;26.35;47.38
2024-06-12;21:22:32;26.95;47.4
2024-06-12;21:24:29;26.87;47.0
2024-06-12;21:25:29;26.78;47.22
...
```

You can directly open this file from Excel or similar software.

To reset the sensor log type "Yes" beside the "Reset Log" button and click this button.

This action resets the records to zero in the internal storage.

## Error Log

Error log screen shows internal logger errors, such as failures to connect to MQTT server or other similar events.

You can browse through the error log similarly by clicking "First", "Prev", "Next" and "Last" Buttons.

You can reset the error log by typing "Yes" beside the "Reset Log" button and clicking this button.

## Sleep Mode

When using the logger web server and you are finished with the configuration or viewing the settings or log entries it may be desirable to put the logger back to low power sleep.

To do that, click "Sleep" button from the Main Dashboard screen. The logger goes back to low power sleep mode and the WIFI is disconnected.

NOTE: just leaving the web server open after completing the configuration will keep the logger in active WIFI mode for the duration of web idle timeout – by default 15 minutes.

To avoid consuming the battery capacity unnecessarily, it is recommended to click the "Sleep" button.

## DEFAULT SETTINGS

After pressing WIFI button continuously for >10 seconds, the logger returns to factory default settings which are listed here:

WIFI SSID in AP mode (for web access):

VESTALOG\_XXXXXX – the ending characters are unique for each device.

WIFI password: 123456789

WEB server IP address: 192.168.4.1

WEB server port number: 80

WEB idle timeout: 15 minutes

WEB daily wakeup: OFF

WEB daily wakeup hour: 12

TIME: unaffected by factory reset

Logging Rate: 15 minutes

Enable MQTT: OFF

Sensor Log: Reset to zero (current entries deleted)

Error log: Reset to zero (current entries deleted)

## BATTERY INFORMATION

Battery type: Lithium Type D Cell, non-rechargeable.

Nominal Voltage: 3.6V

Recommended model: ER34615 D 3.6V  
EVE ENERGY CO. LTD

Nominal Capacity: 19000 mAh.

## Estimated battery life

With the default logging interval of 15 mins + WIFI in client mode brief activation to send MQTT data to server + daily WIFI wakeup for 15 mins for configuration = approx. 1 year.

With the default logging interval of 15 mins + WIFI in client mode brief activation to send MQTT data to server and WITHOUT daily WIFI wakeup (wakeup ONLY on button press) = approx. 3 years.

*Please note that these estimates are based on indicated usage scenarios and optimal environmental conditions. Actual battery life may vary.*

## Replacing Battery

To replace the battery, unscrew and remove the top lid of the logger.

You will see the D Cell battery located on the left.

Carefully remove the battery holding the main board in place.

Install new battery, positive terminal to the top, negative terminal to the bottom.

Re-install and screw the top lid back on.

## VENDOR INFORMATION

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