EL-WiFi-TP Wireless Temperature Data Logger

Model EL-WiFi-TP is a WiFi-based, wireless data logger for time and date-stamped temperature measurements using the included temperature probe. It adheres to the 802.11b standard and can integrate with any new or existing WiFi network. The data logger is powered by a built-in, re-chargeable battery to allow purely stand-alone performance, and it's packaged in a small, IP55-rated enclosure to tolerate dusty and sprayed water environments. The included temperature probe is made of high temperature flexible cable with a stainless steel end cap rated for IP67 (immersible up to 1m). The EL-WiFi-TP data logger is fully programmable, initially via a built-in USB interface, and thereafter wirelessly via the WiFi link using included Windows-based software. Programmable parameters include a unique logger name, °F or °C, logging rate, report rate, as well as temperature alarms. The same software acts as a repository for temperature data, which the data logger uploads at programmable periodic intervals. Built-in memory seamlessly buffers over 100 days of readings when contact is lost with the WiFi network, the software, or the PC on to which the software is running. When the connection is re-established the data logger transparently uploads its memory contents to the PC while still logging data. Data is stored on the host PC in comma-separated value (CSV) format, and the host program allows the graphical review of acquired temperature data along with a time and date stamp, and seamless data export to Microsoft Excel.

Features

- -40 to +125°C (-40 to +257°F) temperature measurements
- Thermistor probe IP rating of 67 resists dust and immersion
- Main unit IP rating of 55 resists dust and water spray
- Built-in display shows current, min/max readings, alarm states
- Wireless communication to any PC using WiFi
- 802.11b-compliant for universal compatibility
- Built-in, rechargeable battery for independent deployment
- Seamlessly uploads memory to host PC at programmable intervals
- Huge buffer memory of 1,000,000 readings tolerates disconnects
- Programmable high/low alarm limits
- Built-in USB interface for battery charging and initial configuration
- Free configuration, review, and Excel-export software
- Supplied with mounting bracket, USB cable, temperature probe, and probe bracket.

Programmable Elements

- Logger Name
- °C, °F
- Logging Interval (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr)
- High and Low Alarms for temperature
- Alarm Hold (on/off)

Buffer Depth*

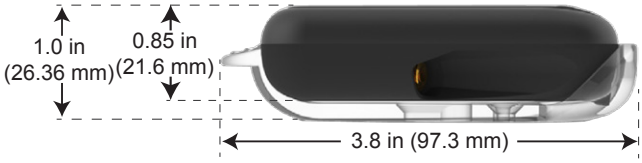
Sampling Interval	Buffer Depth
1 sample every 10 seconds	> 100 days
1 sample every minute	years
1 sample every 5 minutes	years
1 sample every 30 minutes	years
1 sample every hour	years
1 sample every 6 hours	years
1 sample every 12 hours	years

* The maximum time that the data logger can remain disconnected from the WiFi network, host PC, or host software before losing data.

EL-WiFi-TP Close-up

USB port sealed with rubber gasket

EL-WiFi-TP in its included mounting bracket

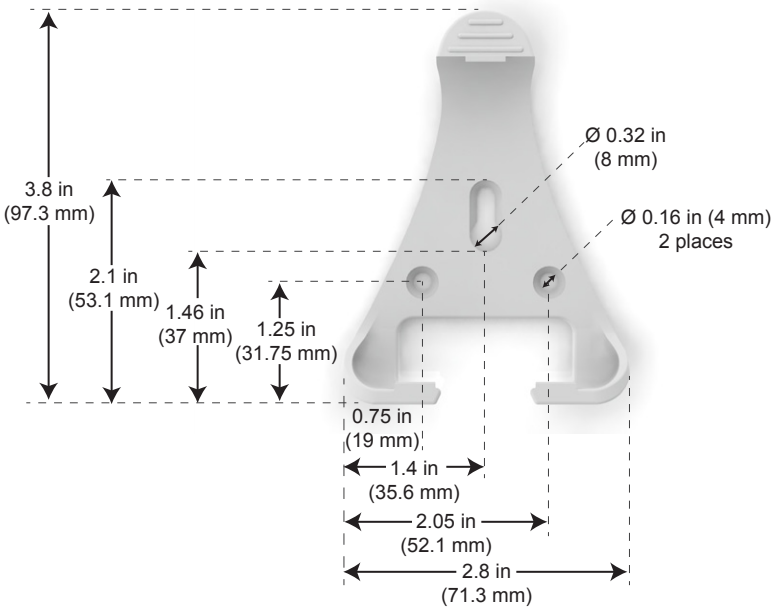


Phone Jack for Temperature Probe

Included Wall Bracket

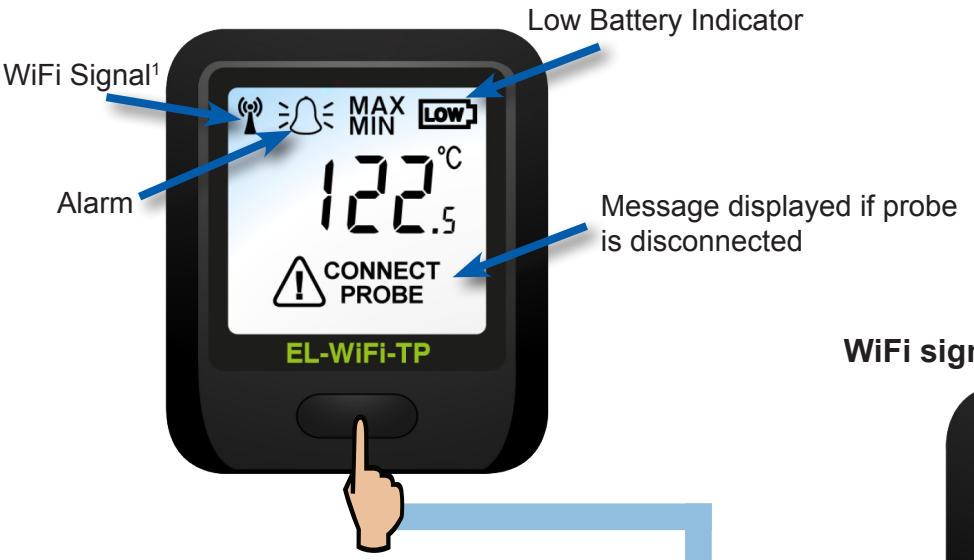
Included Probe Bracket

Included Probe (50 cm)



EL-WiFi-TP Major Operating Modes

Current measured values:



Maximum recorded values since reset:[2]

Minimum recorded values since reset:[2]

WiFi signal strength ("- -" to 10):

OR

Sync[3] (uploading recorded data to host):

[1]Flashes when not connected to WiFi router.

[2]Min and Max values may be reset from these screens by holding the button for three seconds.

[3]If the data logger is in its sleep mode after losing contact with the WiFi router, PC, or software for a lengthy period, cycling to this WiFi screen forces a reconnect.

EL-WiFi-TP Specifications

Specification	Minimum	Typical	Maximum	Unit
Battery Life		>1*		Year
USB Supply Voltage	4.5		5.5	VDC
Temperature Measurement Range	-40 (-40)		+125 (+257)	°C (°F)
Internal Temperature Resolution		±0.1		°C
Probe Temperature Accuracy		±0.5	±2.0	°C
Probe Clip Operating Temperature	-40 (-40)		+100 (+212)	°C (°F)
Logging Rate (configurable)	every 10 seconds	every 30 seconds	every 12 hours	Transmission Rate
Unit Operating Temperature	-20 (-4)		+60 (+140)	°C (°F)
Number of Loggers per PC			253	Loggers
Supported Security Standards	WEP 64 bit; WEP 128 bit; WPA-PSK; WPA2-PSK			

*Typical between charging cycles, but could be less if frequent transmissions.

WARNING: Do not exceed operating temperatures.

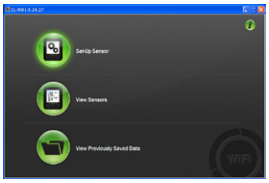
EL-WiFi-TP Ordering Information

Description	Order Number
EL-WiFi-TP Data Logger Includes data logger, mounting bracket, USB cable (1 meter), temperature probe (50cm), and software (downloadable).	**EL-WiFi-TP**
Optional Accessories	
101085 Power supply adapter (USB to AC) to power and charge the data logger's battery via a standard outlet. Without this the data logger can only be powered and charged from a PC's USB port. Includes US adapter (international adapters available below).	**101085**
101017-RPE European Adapter for power supply 101085.	**101017-RPE**
101017-RPK UK Adapter for power supply 101085.	**101017-RPK**
101017-RPS Australian Adapter for power supply 101085.	**101017-RPS**
101017-RPA SPARE US Adapter for power supply 101085 (one already ships with 101085).	**101017-RPA**

Included

EL-WiFi-TP Data Logger

Mounting Bracket



Software (Via Download)

USB Cable (1 meter)

Temperature Probe (50 cm)

Probe Bracket

Optional Accessories

101085

101017-RPS

101017-RPK

101017-RPE

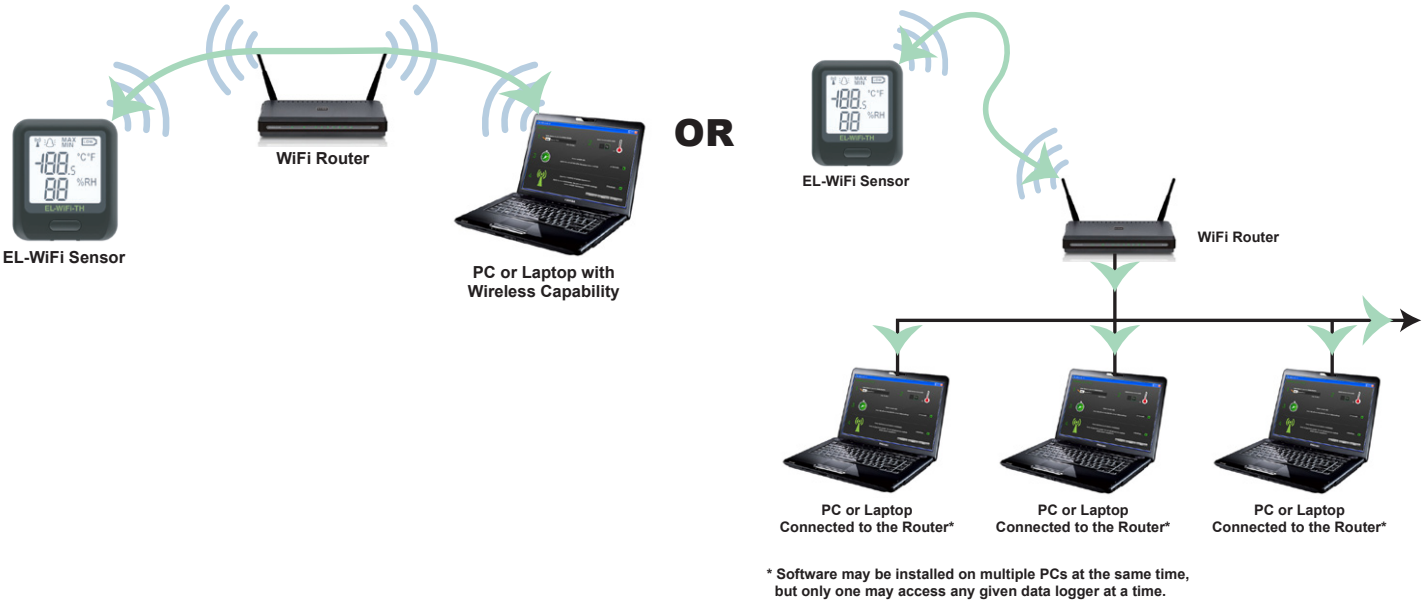
101017-RPA*

***USA adapter is included with purchase of 101085**

Typical EL-WiFi Deployment Options and Built-in Fail Safe

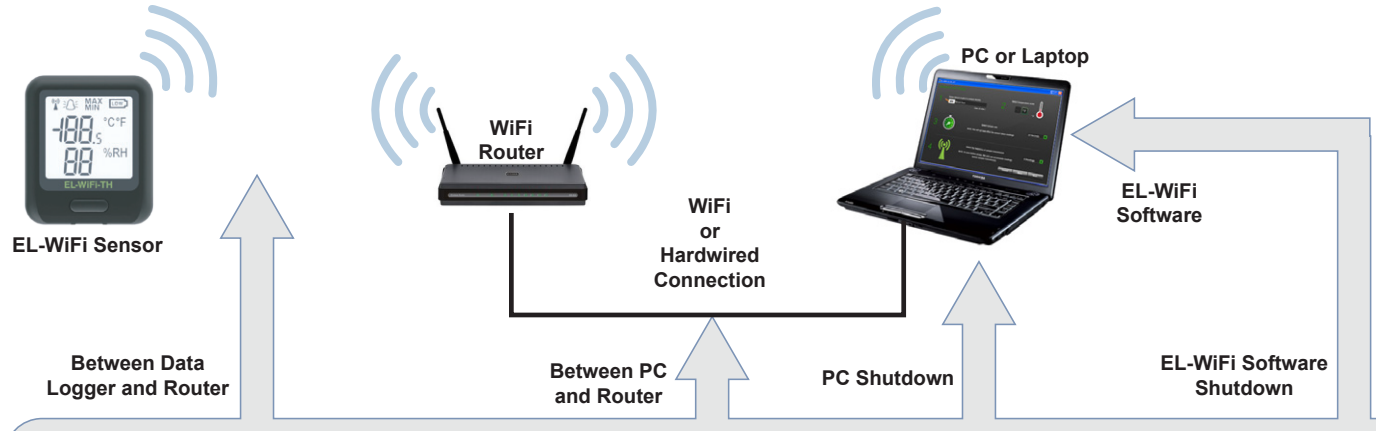
EL-WiFi data loggers automatically detect and allow you to connect to any WiFi source that supports the 802.11b standard. Various connection options are supported, as well as a fail safe backup system to ensure that on-going recording and historical values are preserved and automatically uploaded to a host PC whenever it becomes available.

EL-WiFi Deployment Options



* Software may be installed on multiple PCs at the same time, but only one may access any given data logger at a time.

EL-WiFi Failsafe Ensures Continuous, Uninterrupted Recording



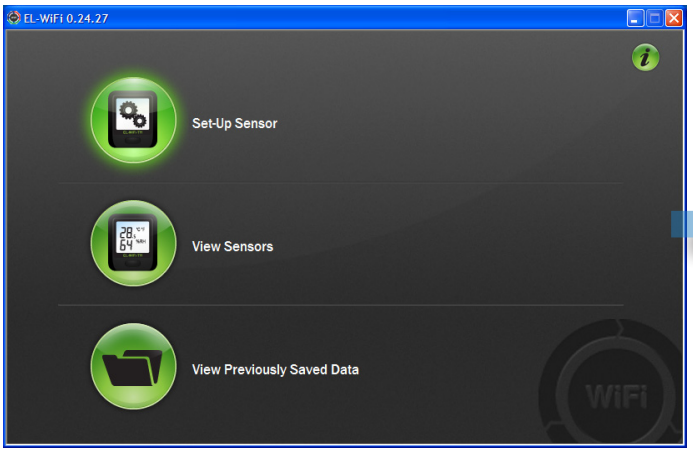
EL-WiFi products support a failsafe operation feature that ensures retained readings and data logging continuity in the event of failure at one or more communication junctions: between the data logger and the WiFi router; between the WiFi router and PC; PC shut down; EL-WiFi software shutdown.

In its failsafe mode, the data logger will attempt to transmit stored data at the interval set during configuration (every 1 to 100 readings.) If it cannot connect it will attempt to send data over the course of approximately the next minute. If that attempt fails, the data logger will wait for 15 minutes and try again, and in 15-minute epochs thereafter until connection is established and data is uploaded. During this time, the data logger continues to acquire data to its internal memory, so measurements are never lost. With a memory depth of 500,000 readings, the data logger must fail to connect for over 100 days at the fastest sample interval before data is lost.

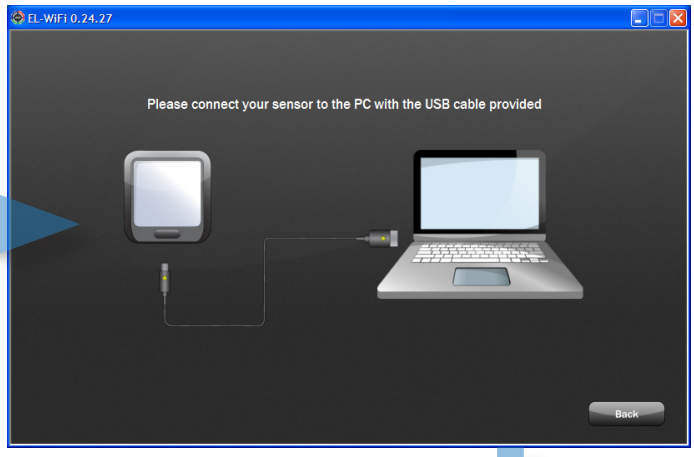
Finally, you may manually force the data logger to test for a connection by pressing its control button until the WiFi signal strength screen appears, where the data logger will instantly wake up, connect (if possible), and upload data from its memory.

A Typical EL-WiFi Data Logger Configuration with Included Software

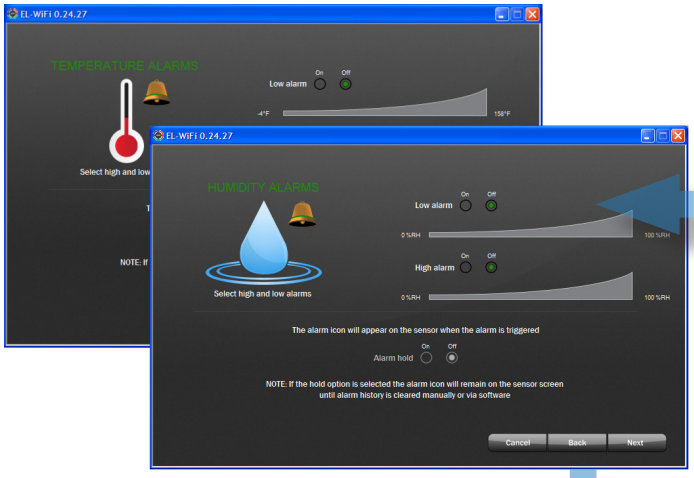
Start Software



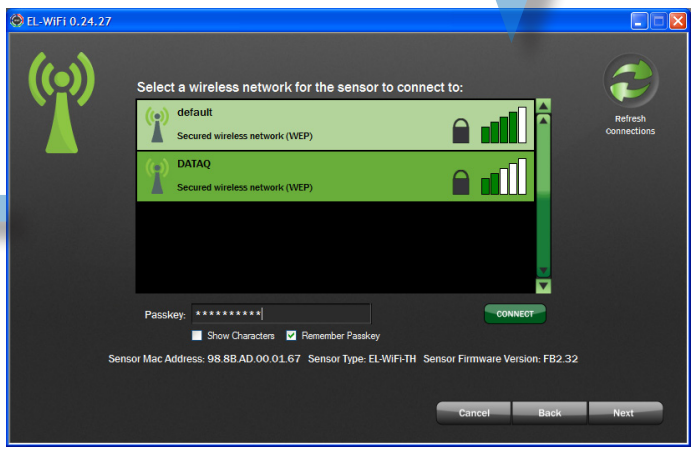
Connect the Data Logger to the USB port



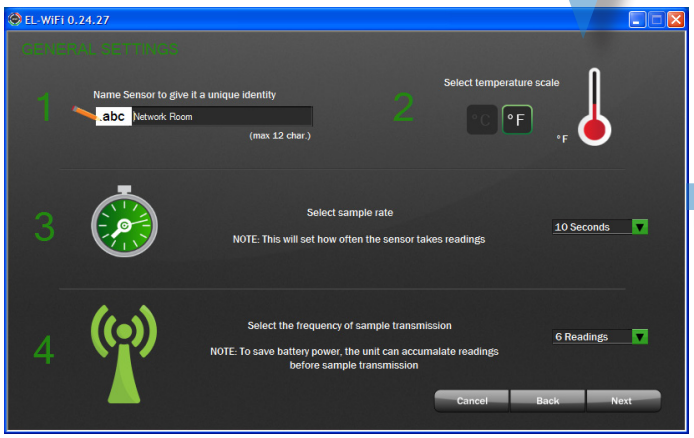
Configure Alarms



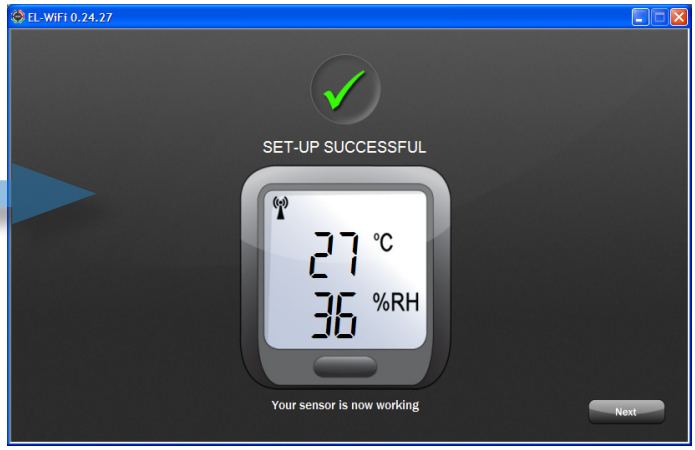
Select WiFi Gateway



Configure General Settings

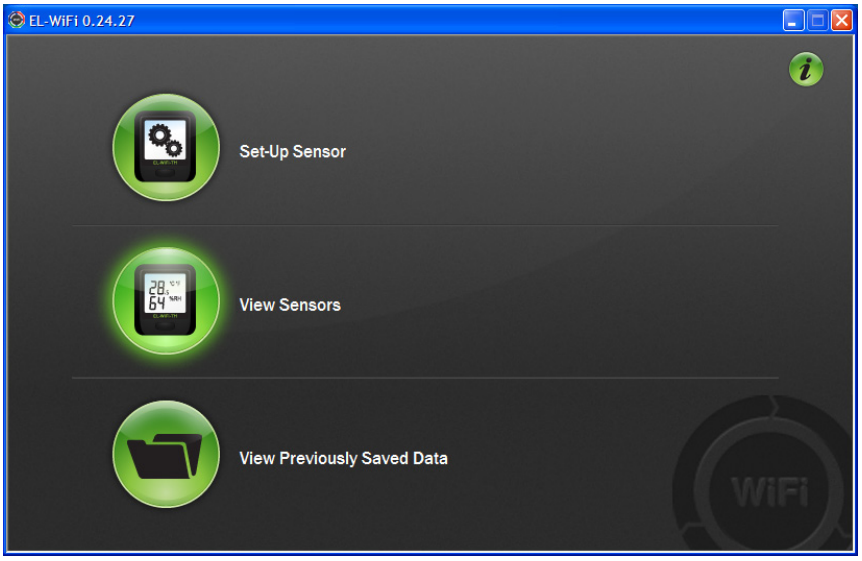


Setup Successful!



Note: Configuration items are EL-WiFi model-dependent.

Working with WiFi Data Loggers



View Sensors

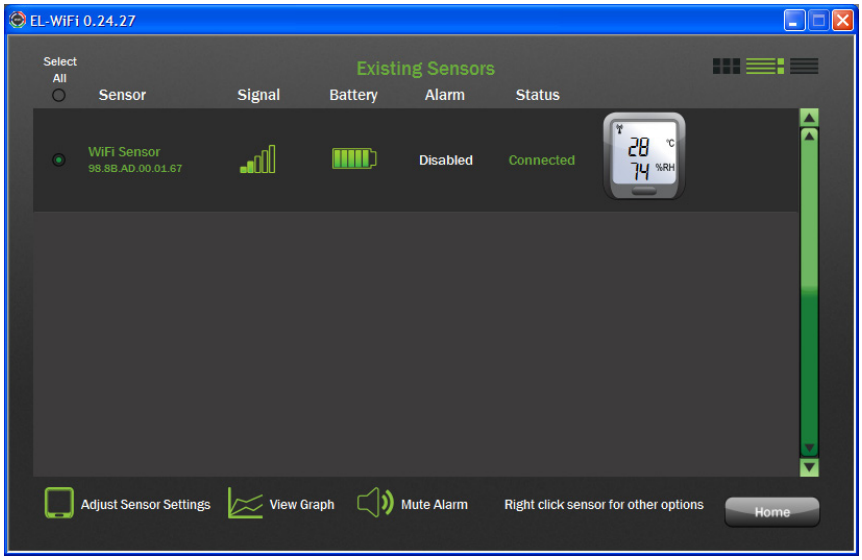
Click on the View Sensors Icon in the configuration software to view connected data loggers.

Overview of connected data loggers

This screen lists all the data loggers on the PC's network, and provides information about each:

- Data logger name and MAC address
- WiFi signal strength as detected by the sensor
- Data logger battery status
- Data logger alarm status (see below)
- The data logger's WiFi connection status (Connected, Waiting for sensor, Disconnected)
- A virtual real time picture of the data logger's display that updates as new data is transmitted.

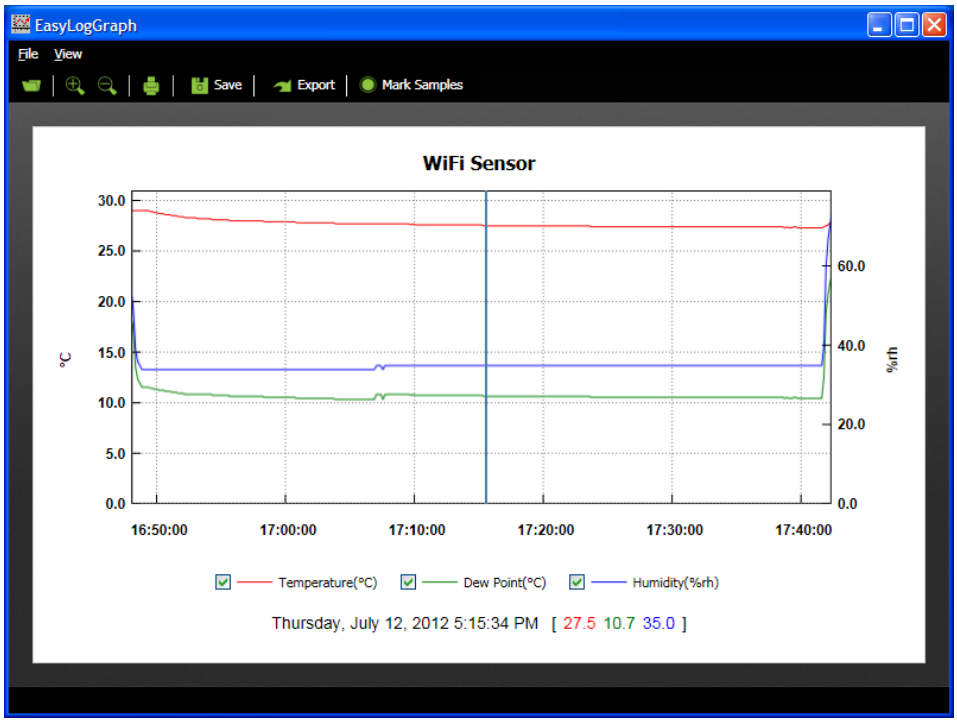
Near the bottom of this display you can wirelessly adjust data logger settings; view a graph of sensor-acquired data; and mute the PC's audible alarm if any sensor is in the alarm state.



A typical alarm condition

When an EL-WiFi data logger enters an alarm state, that condition is clearly indicated on its status display with a red-flashing icon of an alarm bell. If the PC's internal speaker is enabled, a ringing alarm sounds as an audible indication of a detected alarm state.

Working With EL-WiFi Data Logger Data



Note: Acquired and displayed quantities are EL-WiFi model-dependent.

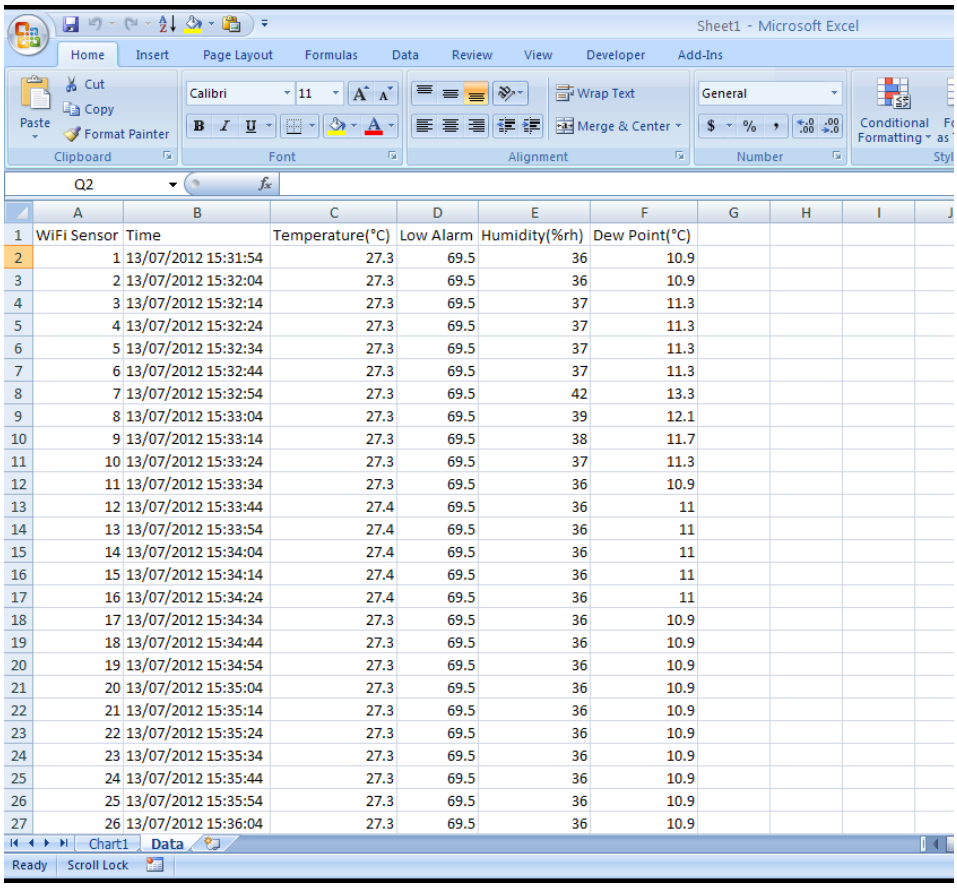
A fast, graphical review of acquired data

Information acquired by any EL-WiFi data logger may be instantly reviewed, even while the sensor continues to acquire data. That's because it buffers a virtually unlimited amount of data in its non-volatile memory until the application can respond to retrieve it. This performance gives you the freedom to review acquired data whenever and for as long as you like.

The graphing utility allows a cursor to be pulled across acquired data to display values correlated with date and time of acquisition. Even programmed alarm limits are clearly defined. Tools that are accessible in a mouse-click allow you to save data, magnify and compress it for viewing, print the chart, and instantly export it to Microsoft Excel® (see below).

File Export Facility

Microsoft Excel is generally one of the more common analysis utilities for acquired data. This popularity is embraced by the EL-WiFi Data Viewer. A single mouse-click instantly exports data into an Excel spreadsheet, ready for detailed analysis. This approach avoids annoying intermediate files and the need for Excel to convert them into compatible values. Of course, the data is also available as ASCII-delimited CSV (comma-separated values) for general-purpose use.



	A	B	C	D	E	F	G	H	I
1	WiFi Sensor	Time	Temperature(°C)	Low Alarm	Humidity(%rh)	Dew Point(°C)			
2	1	13/07/2012 15:31:54	27.3	69.5	36	10.9			
3	2	13/07/2012 15:32:04	27.3	69.5	36	10.9			
4	3	13/07/2012 15:32:14	27.3	69.5	37	11.3			
5	4	13/07/2012 15:32:24	27.3	69.5	37	11.3			
6	5	13/07/2012 15:32:34	27.3	69.5	37	11.3			
7	6	13/07/2012 15:32:44	27.3	69.5	37	11.3			
8	7	13/07/2012 15:32:54	27.3	69.5	42	13.3			
9	8	13/07/2012 15:33:04	27.3	69.5	39	12.1			
10	9	13/07/2012 15:33:14	27.3	69.5	38	11.7			
11	10	13/07/2012 15:33:24	27.3	69.5	37	11.3			
12	11	13/07/2012 15:33:34	27.3	69.5	36	10.9			
13	12	13/07/2012 15:33:44	27.4	69.5	36	11			
14	13	13/07/2012 15:33:54	27.4	69.5	36	11			
15	14	13/07/2012 15:34:04	27.4	69.5	36	11			
16	15	13/07/2012 15:34:14	27.4	69.5	36	11			
17	16	13/07/2012 15:34:24	27.4	69.5	36	11			
18	17	13/07/2012 15:34:34	27.3	69.5	36	10.9			
19	18	13/07/2012 15:34:44	27.3	69.5	36	10.9			
20	19	13/07/2012 15:34:54	27.3	69.5	36	10.9			
21	20	13/07/2012 15:35:04	27.3	69.5	36	10.9			
22	21	13/07/2012 15:35:14	27.3	69.5	36	10.9			
23	22	13/07/2012 15:35:24	27.3	69.5	36	10.9			
24	23	13/07/2012 15:35:34	27.3	69.5	36	10.9			
25	24	13/07/2012 15:35:44	27.3	69.5	36	10.9			
26	25	13/07/2012 15:35:54	27.3	69.5	36	10.9			
27	26	13/07/2012 15:36:04	27.3	69.5	36	10.9			

Chart1 Data
Ready Scroll Lock

Note: Acquired and displayed quantities are EL-WiFi model-dependent.