



**Control Solutions Inc**  
**35851 Industrial Way Suite D**  
**St. Helens, OR 97051**  
**503-410-5996**  
**WWW.VFCDataLoggers.Com**

05/11/22 09:40:33  
WV Purchasing Division

Bidder name: Controls Solutions, Inc.

5/10/2022

Buyer: Crystal Husted

Solicitation No.: CRFQ AGR2200000022

Bid opening date: May 12, 2022

Bid Opening time: 1:30 PM ET

#### Cover page/clarifications

Thank you for the opportunity to bid the temperature/humidity monitoring system. Control Solutions has been in business for 26 years, providing over 100k installed devices across the United States.

The Cloud account provided with this bid includes:

- Unlimited data storage for the 91 devices quoted
- Multi-format data export
- Report printing
- Unlimited locations/sites linked to one Cloud account
- Unlimited users that can be assigned to specific locations/sites
- Administration panel
- Device Audit trail
- Android and IOS App
- 9 user profiles to determine which users have access to which data and assign account privileges
- 24/7 alerting by text and/or email. Includes
- Change settings or view data from any web-enabled device

3.1.1.6 Cloud service included in bid is for 1 year for 91 devices. The Cloud account renewal is annual at \$35 per year/per device.

3.1.2.2 Packaging/Shipping will be small parcels not exceeding 70 lbs.

3.1.4.1 Control Solutions will perform complete installation. We require adequate WiFi signal strength where each device will be installed. 120 VAC power receptacle is required within 10' of where the devices will be installed.

3.1.4.2 Control Solutions will provide system validation to include WiFi signal strength, communication to cloud/data storage, device accuracy, and alert notifications to each user.



Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

**State of West Virginia  
 Centralized Request for Quote  
 Miscellaneous**

<b>Proc Folder:</b> 1033322		<b>Reason for Modification:</b>	
<b>Doc Description:</b> TEMPERATURE/HUMIDITY MONITORING SYSTEM		ADDENDUM 1 TO PROVIDE ANSWERS TO VENDOR QUESTIONS	
<b>Proc Type:</b> Central Purchase Order			
<b>Date Issued</b>	<b>Solicitation Closes</b>	<b>Solicitation No</b>	<b>Version</b>
2022-04-27	2022-05-12 13:30	CRFQ 1400 AGR2200000022	2

**BID RECEIVING LOCATION**

BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**

**Vendor Customer Code:** VC0000015685

**Vendor Name :** Controls Solutions, Inc.

**Address :** 35851 Industrial Way, Suite D

**Street :**

**City :** Saint Helens

**State :** Oregon **Country :** USA **Zip :** 97051

**Principal Contact :** Kevin Gaunce

**Vendor Contact Phone:** 503-410-5996 **Extension:** 103

**FOR INFORMATION CONTACT THE BUYER**  
 Crystal G Husted  
 (304) 558-2402  
 crystal.g.husted@wv.gov

**Vendor Signature X**  **FEIN#** 931212314 **DATE** 05/10/2022

**All offers subject to all terms and conditions contained in this solicitation**

**ADDITIONAL INFORMATION**

THE STATE OF WEST VIRGINIA PURCHASING DIVISION FOR THE AGENCY, WEST VIRGINIA DEPARTMENT OF AGRICULTURE, IS SOLICITING BIDS TO ESTABLISH A CONTRACT FOR THE ONE-TIME PURCHASE OF TEMPERATURE/HUMIDITY MONITORING SYSTEM, WHICH INCLUDES TEMPERATURE AND HUMIDITY PROBES, CABLES, MODULES, AND SOFTWARE, WITH SHIPPING, INSTALLATION, AND WARRANTY PER THE ATTACHED DOCUMENTS.

\*\*\*QUESTIONS REGARDING THE SOLICITATION MUST BE SUBMITTED IN WRITING TO CRYSTAL.G.HUSTEAD@WV.GOV PRIOR TO THE QUESTION PERIOD DEADLINE CONTAINED IN THE INSTRUCTIONS TO VENDORS SUBMITTING BIDS\*\*\*

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION	
1900 KANAWHA BLVD E		313 GUS R DOUGLAS LN, BLDG 11	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Temperature/Humidity Monitoring System	1.00000	EA	\$26,799.85	\$26,799.85

Comm Code	Manufacturer	Specification	Model #
41000000	Lascar Electronics		See attached model number breakdown

**Extended Description:**  
Includes Probes, Cables, Modules, and Software

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION	
1900 KANAWHA BLVD E		313 GUS R DOUGLAS LN, BLDG 11	
CHARLESTON	WV	CHARLESTON	WV
US		US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
2	Installation/Validation	1.00000	EA	\$11,800.00	\$11,800.00

Comm Code	Manufacturer	Specification	Model #
41000000	N/A	N/A	N/A

**Extended Description:**  
Installation/Validation

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES  1900 KANAWHA BLVD E  CHARLESTON WV US		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION 313 GUS R DOUGLAS LN, BLDG 11 CHARLESTON WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
3	Calibration	1.00000	EA	No charge	

Comm Code	Manufacturer	Specification	Model #
41000000	N/A	N/A	N/A

**Extended Description:**  
Calibration

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES  1900 KANAWHA BLVD E  CHARLESTON WV US		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION 313 GUS R DOUGLAS LN, BLDG 11 CHARLESTON WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
4	Warranty	1.00000	EA	No charge	

Comm Code	Manufacturer	Specification	Model #
41000000	N/A	N/A	N/A

**Extended Description:**  
Warranty

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES  1900 KANAWHA BLVD E  CHARLESTON WV US		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION 313 GUS R DOUGLAS LN, BLDG 11 CHARLESTON WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
5	Shipping	1.00000	EA	\$297.55	\$297.55

Comm Code	Manufacturer	Specification	Model #
78121603	N/A	N/A	N/A

**Extended Description:**  
Shipping

INVOICE TO		SHIP TO	
AGRICULTURE DEPARTMENT OF ADMINISTRATIVE SERVICES  1900 KANAWHA BLVD E  CHARLESTON WV US		AGRICULTURE DEPARTMENT OF REGULATORY PROTECTION DIVISION 313 GUS R DOUGLAS LN, BLDG 11 CHARLESTON WV US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
6	Maintenance Service, Training & Support	1.00000	EA	No charge	

Comm Code	Manufacturer	Specification	Model #
41000000	N/A	N/A	N/A

**Extended Description:**  
Maintenance Service, Training & Support

**SCHEDULE OF EVENTS**

Line	Event	Event Date
1	VENDOR QUESTION DEADLINE	2022-04-27

	Document Phase	Document Description	Page
AGR2200000022	Final	TEMPERATURE/HUMIDITY MONITORING SYSTEM	5

**ADDITIONAL TERMS AND CONDITIONS**

See attached document(s) for additional Terms and Conditions

QTY	Model number	Description	Monitoring type	Price each	Extended price
3	EL-MOTE-TH+	Lascar Temp/Humidity WiFi data logger, remote probe. Supplied with EL-MOTE-PSU Mains Power Adaptor.	Germinator	\$ 240.95	\$ 722.85
25	EL-WiFi-DTP+	Lascar two-sensor temperature WiFi data logger, remote probe	Refrigerator	\$ 330.65	\$ 8,266.25
15	EL-WiFi-TPX+	Lascar single-sensor temperature WiFi data logger, remote probe	Freezer	\$ 211.65	\$ 3,174.75
7	EL-WiFi-TC	Lascar single-sensor high temperature WiFi data logger, remote probe	Oven	\$ 211.65	\$ 1,481.55
4	EL-WiFi-ULT+	Lascar single-sensor Ultra-low temperature WiFi data logger, remote probe	(-80) Freezer	\$ 276.25	\$ 1,105.00
20	EL-MOTE-TH+	Lascar temp/Humidity WiFi data logger, remote probe. Supplied with EL-MOTE-PSU Mains Power Adaptor.	Large Incubator	\$ 240.95	\$ 4,819.00
3	EL-MOTE-TH+	Lascar temp/Humidity WiFi data logger, remote probe. Supplied with EL-MOTE-PSU Mains Power Adaptor.	Small Incubator	\$ 240.95	\$ 722.85
1	EL-MOTE-TH+	Lascar temp/Humidity WiFi data logger, remote probe. Supplied with EL-MOTE-PSU Mains Power Adaptor.	Desiccator	\$ 240.95	\$ 240.95
13	EL-WiFi-TH+	Lascar temp/Humidity WiFi data logger	Room	\$ 237.05	\$ 3,081.65
91	Cloud-1Y	Lascar One year of Cloud service for 91 devices. 24/7 alerting, monitoring configuration and exporting data.	All device types	\$ 35.00	\$ 3,185.00
				<b>Total Price</b>	<b>\$ 26,799.85</b>

Itemized pricing for Solicitation No. CRFQ AGR2200000022. Opening date May 12, 2022 1:30 PM ET. Buyer Crystal Husted.

*Line Item 1*

**CRFQ AGR220000022**

Item No.	Description	Model #/Brand Name	Quantity	Unit Price	Extended Amount
1	Temperature/Humidity Monitoring System Includes Probes, Cables, Modules, & Software	Germinator: 3 each Model EL-MOTE-TH+ Lascar Refrigerator: 25 each Model EL-WiFi-DPT+ Lascar Freezer: 15 each Model EL-WiFi-TPX+ Lascar Oven: 7 each Model EL-WiFi-TC Lascar -80 Freezer: 4 each Model EL-WiFi-ULT+ Lascar Large Incubator: 20 each EL-MOTE-TH+ Lascar Small Incubator: 3 each Model EL-MOTE-TH+ Lascar Desiccator: 1 each Model EL-MOTE-TH+ Lascar Room: 13 each Model EL-WiFi-TH+ Lascar Cloud service 91 devices for 1 year: Model Cloud-1Y Lascar	1	\$26,799.85  Individual component pricing attached.	\$26,799.85
2	Installation/Validation	N/A	1	\$11,800.00	\$11,800.00
3	Calibration	N/A	1	Included N/C	Included N/C
4	Warranty	N/A	1	Included N/C	Included N/C
5	Shipping	N/A	1	\$297.55	\$297.55
6	Maintenance Service, Training, & Support	N/A	1	Included N/C	Included N/C



Failure to use this form may result in disqualification		<b>Grand Total</b>	\$38,897.40
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<b>Bidder / Vendor Information</b>	
<b>Name:</b>	Control Solutions, Inc.
<b>Address:</b>	35851 Industrial Way, STE D
	St. Helens, OR 97051
<b>Phone:</b>	503-410-5996
<b>Email Address:</b>	<a href="mailto:keving@vfcdataloggers.com">keving@vfcdataloggers.com</a>
<b>Authorized Signature:</b>	 <span style="float: right; margin-left: 200px;">KEVIN GAUNCE</span>

QTY	Model number	Description	Monitoring type	Price each	Extended price
3	EL-MOTE-TH+	Lascar Temp/Humidity WiFi data logger, remote probe. Supplied with EL-MOTE-PSU Mains Power Adaptor.	Germinator	\$ 240.95	\$ 722.85
25	EL-WiFi-DTP+	Lascar two-sensor temperature WiFi data logger, remote probe	Refrigerator	\$ 330.65	\$ 8,266.25
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				<b>Total Price</b>	<b>\$ 26,799.85</b>

Itemized pricing for Solicitation No. CRFQ AGR2200000022. Opening date May 12, 2022 1:30 PM ET. Buyer Crystal Husted.

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ AGR2200000022**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

*(Check the box next to each addendum received)*

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Control Solutions, Inc.

\_\_\_\_\_  
Company


  
\_\_\_\_\_  
Authorized Signature

05/10/2022

\_\_\_\_\_  
Date

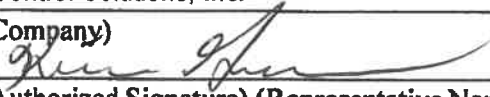
**NOTE:** This addendum acknowledgment should be submitted with the bid to expedite document processing.

**DESIGNATED CONTACT:** Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

(Name, Title)  Sales Manager  
(Printed Name and Title) Kevin Gaunce, Sales Manager  
(Address) 35851 Industrial Way, STE D St. Helens, OR 97051  
(Phone Number) / (Fax Number) 503-410-5996 x103/503-410-5997  
(email address) keving@vfcdataloggers.com

**CERTIFICATION AND SIGNATURE:** By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

*By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.*

Control Solutions, Inc.  
(Company)  Kevin Gaunce, Sales Manager  
(Authorized Signature) (Representative Name, Title)  
Kevin Gaunce Sales Manager 05/10/2022  
(Printed Name and Title of Authorized Representative) (Date)  
503-410-5996 x103 / 503-410-5997  
(Phone Number) (Fax Number)  
keving@vfcdataloggers.com  
(Email Address)

# EL-MOTE-TH+

High Accuracy Temperature & Humidity  
Cloud-Connected Data Logger

GERMINATOR, LRG INCUBATOR,  
SM INCUBATOR +  
DESICCATOR



- Measures ambient temperature between -30 to +80 °C/-22 to +176 °F and relative humidity 0 to 100 %RH
- Records and uploads temperature and humidity data to the EasyLog Cloud
- Access live temperature and humidity data via any Internet Browser or the EasyLog Cloud App
- Set up alarm options for temperature and humidity zone breaches – email alerts, beeper alarms or LED flash alerts
- Suitable for indoor and outdoor use
- Battery life of up to 2 years



The EL-MOTE-TH+ kit has been designed to monitor air temperature and relative humidity in a large range of applications. Its external temperature and humidity probe made it an ideal choice for applications where it may be problematic to locate the whole device such as museum display cases and HVAC systems.

Products in the EL-MOTE range are simple to set-up and easy to use. Download the EasyLog Cloud App and set-up a device in minutes over your WiFi network. After set-up, the device can be placed anywhere within range of the WiFi network, continually monitoring and recording your data to the EasyLog Cloud. Access your data on any Internet Browser or the EasyLog Cloud App, enabling you to monitor the ambient temperature and humidity of your chosen location from anywhere at any time.

EL-MOTE devices can be programmed with high and low temperature and humidity alarm zones. If a temperature or humidity zone is breached, an alarm will be activated. Alarm options include: email alerts (which can be sent to one or multiple email addresses), beeper sound alarms, and LED flash alerts.

EL-MOTE devices can be powered using the supplied batteries or a mains adapter (sold separately), and are provided with a wall mountable bracket for installation.









## EasyLog Cloud Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



## Features at a glance\*

-  Store your data logging records securely on the Cloud
-  Connect multiple users with variable account privileges
-  Connect data loggers from multiple sites in a single account
-  Easily access your most important data, anywhere
-  Remotely manage all of your data logging devices
-  Never miss a critical event with flexible advanced notifications
-  Review and analyse your data with powerful graphing functionality
-  Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

This datasheet is also available in other languages.  
[www.lascarelectronics.com/data-loggers](http://www.lascarelectronics.com/data-loggers)

# EL-MOTE-TH+

High Accuracy Temperature & Humidity  
Cloud-Connected Data Logger



Logger Specification	Minimum	Typical	Maximum	Unit
<b>Battery Life</b>		2*		years
<b>Battery Type</b>	4 x 1.5V AA cells			
<b>Operating Temperature (Powered by Batteries Supplied)</b>	-18 (-0.4)		+55 (+131)	°C (°F)
<b>Operating Temperature (Mains Adapter Powered)</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Logging Period (User Configurable)</b>	10 sec	10 min	12 hrs	
<b>Transmission Period (User Configurable)</b>	1 min	1 hour	24 hours	
<b>Dimensions</b>	93 x 93 x 32 (3.7 x 3.7 x 1.3)			mm (inches)
<b>IP Rating</b>	67			

Probe Specification	Minimum	Typical	Maximum	Unit
<b>Temperature Range</b>	-30 to +80 (-22 to +176)			°C (°F)
<b>Temperature Resolution</b>	0.01 (0.01)			°C (°F)
<b>Temperature Accuracy</b>		±0.2 (+5 to +60) (±0.4 (+41 to +140))	±0.8 (-20 to +60) (±1.6 (-4 to +140))	°C (range) (°F (range))
<b>Humidity Range</b>	0 to 100			%RH
<b>Humidity Resolution</b>	0.1			%RH
<b>Humidity Accuracy (@25°C)</b>		±1.8** (20 to 80)	±4** (0 to 100)	%RH (%RH)
<b>Probe Dimensions (Without Bracket)</b>	37 x 12 x 8 (1.5 x 0.5 x 0.3)			mm (inches)
<b>Cable Length</b>	2000 (79)			mm (inches)

The sensor is IEEE 802.11bgn (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).



\* Battery life is dependent on: transmission period, WiFi encryption method, WiFi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and WiFi device, presence, volume and type of WiFi traffic from other devices, sample rate and operating temperature. Logging period and transmission period can be configured in Settings via the EasyLog Cloud App.

\*\*Please refer to the charts in this datasheet for more detailed accuracy specifications.

## WHAT'S IN THE BOX?

PART NUMBER	DESCRIPTION
<b>EL-MOTE WALL BRACKET</b>	Wall Mounting Bracket for EL-MOTE Device
<b>BATTERIES</b>	1.5V AA x 4
<b>EL-SP-TH+</b>	High Accuracy Temperature and Humidity Probe on 2m Cable

## WHAT EXTRA ACCESSORIES ARE AVAILABLE?

PART NUMBER	DESCRIPTION
<b>EL-MOTE-PSU</b>	Mains Power Adapter
<b>EL-SP-TH+</b>	Temperature and Humidity Probe on 2m Cable
<b>EL-MOTE WALL BRACKET</b>	Wall Mounting Bracket for EL-MOTE Device

Specifications liable to change without prior warning



## CALIBRATION CERTIFICATES NOW AVAILABLE

EasyLog offers a Traceable Calibration Certificate Service on Temperature and Humidity Data Loggers using reference equipment which has been calibrated by a UKAS/NIST/HKAS or CNAS accredited laboratory and using apparatus traceable to national or international standards. For more information please see [www.lascarelectronics/calibration](http://www.lascarelectronics/calibration)



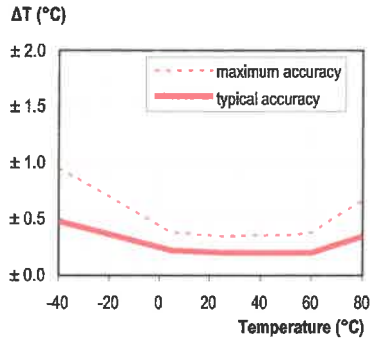
# EL-MOTE-TH+

High Accuracy Temperature & Humidity  
Cloud-Connected Data Logger

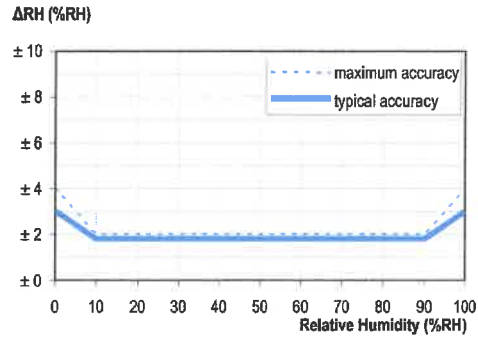


## SENSOR ACCURACY & INFORMATION

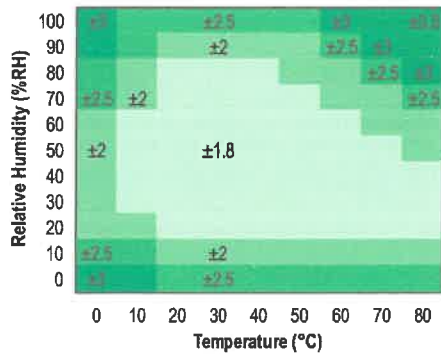
Typical and maximal tolerance for temperature sensor in °C.



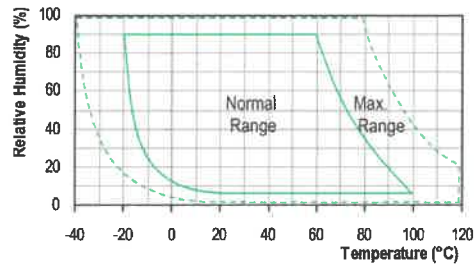
Typical and maximal tolerance at 25°C for relative humidity.



Typical accuracy of relative humidity measurements given in %RH for temperatures 0 to 80°C.



Operating conditions



Long term exposure to humidity levels outside of the 'normal' range may temporarily offset RH measurements ( $\pm 3\%RH$  after 60 hours). Once returned to less extreme conditions the device will slowly return towards calibration state.

When tracking changes in ambient conditions, the response time of the humidity sensor in your data logger is approximately 20 minutes to reach 90% of the reading. However, if you are measuring step changes in humidity (for example if calibrating the product) it is advised that you leave the unit for up to four hours to ensure that it has enough time to settle at the new level.

It is worth remembering that the value of relative humidity is of course sensitive to temperature variation. As an example, at a relative humidity of  $\sim 90\%RH$  at ambient temperature, a variation in temperature of  $1^\circ C$  will result in a change of up to  $-5\%RH$ . Therefore when comparing multiple devices or calibrating them, any temperature variations must be considered.

This datasheet is also available in other languages.

[www.lascarelectronics.com/data-loggers](http://www.lascarelectronics.com/data-loggers)

# EL-WiFi-TC

Oven



## External Thermocouple WiFi Temperature Sensor



- Thermocouple probe temperature measurement range -270 to +1372°C (-454 to +2501°F) (probe dependent)
- Supplied with a K-type probe with a measurement range of 0 to +200°C (+32 to +392°F), for details see TC probes datasheet
- Wirelessly stream and view data on the EasyLog Cloud, App or on a PC
- Easy sensor set-up using free PC software or App
- View and analyse multiple sensors, including graphing of historic data
- Configurable high and low alarms with indicator

The EL-WiFi-TC measures the temperature of the environment in which its probe is situated. Featuring an industry standard miniature thermocouple connector, the device is compatible with K, N, J and T-type probes.

Data is streamed wirelessly over any compatible WiFi network and can be viewed on a PC using free software or on the EasyLog Cloud or App.

To configure the sensor for use on a given wireless network, either connect it via USB to a PC running EasyLog WiFi software on the network, or configure wirelessly using the EasyLog Cloud app on a mobile phone with access to the network. The sensor can then be placed anywhere within range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application or EasyLog Cloud (max 30 days at 10 second sample interval).

The sensor is IEEE 802.11bgn\* (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).

EL-WiFi-TC has a protection rating of IP40. The unit is freestanding, but can be attached to a wall or surface using the bracket provided. The unit can be clipped in and out of the bracket as required.

### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
<b>Battery life</b>		>6		Months
<b>Probe measurement range</b>	K-type (supplied) 0 (+32) K-type -270 (-454) J-type -210 (-346) T-type -270 (-454)		+200 (+392) +1372 (+2501) +1200 (+2192) +400 (+752)	°C (°F)
<b>USB supply voltage (@500mA)</b>	4.5	5.0	5.5	Vdc
<b>Operating temperature range</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Logging period (user configurable)</b>	10 sec	10 min	12 hrs	
<b>Transmission period (user configurable)</b>	1 min	1 hr	24 hrs	
<b>Temperature measurement resolution</b>		0.1 (0.2)		°C (°F)
<b>Temperature display resolution</b>		0.1		
<b>Temperature tolerance (base unit)</b>		±1.5 (±3)		°C (°F)
<b>Temperature tolerance (K-type probe supplied)</b>		±2.5 (±4.5)		°C (°F)
<b>IP Rating</b>	IP40 (Bung fully inserted, not permanently powered, thermocouple connector fitted and fully inserted, device mounted vertically.)			
<b>Dimensions</b>	82 x 70 x 23mm (3.22 x 2.75 x 0.91")**			

### ACCESSORIES

<b>PSU-5VDC-USB-USA</b>	USB Mains Power Adapter for USA
<b>PSU USB-UK</b>	USB Mains Power Adapter for UK
<b>PSU USB-EU</b>	USB Mains Power Adapter for EU
<b>EL-WiFi-Alert</b>	Audible and Visual Alarm for EL-WiFi Data Logging Sensors
<b>EL-P-TC-K</b>	Replacement 1.5m K-type thermocouple with stainless steel probe (Class 2)

### INCLUDED IN THE BOX

<b>EL-WIFI WALL BRACKET</b>	Wall mounting bracket for EL-WiFi sensors
<b>EL-P-TC-K</b>	1.5m K-type thermocouple with stainless steel probe (Class 2)
<b>CABLE USB A-MICRO B</b>	USB Type A to Micro B

\* MAC Address starting 98:8B:AD:2..... only

\*\* Excluding probe and mounting bracket



CALIBRATION CERTIFICATES NOW AVAILABLE





# EL-WiFi-TC



## External Thermocouple WiFi Temperature Sensor

### EL-WiFi-WIN

Lascar's WiFi software\* is available as a free download from: [www.lascarelectronics.com/software/easylog-wifi](http://www.lascarelectronics.com/software/easylog-wifi). Easy to install and use, EL-WiFi-WIN allows easy connection of sensors to a WiFi network. The user can select where data is stored - the PC or the Cloud.



### EasyLog Cloud

#### Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



### Features at a glance\*



Store your data logging records securely on the Cloud



Connect multiple users with variable account privileges



Connect data loggers from multiple sites in a single account



Easily access your most important data, anywhere



Remotely manage all of your data logging devices



Never miss a critical event with flexible advanced notifications



Review and analyse your data with powerful graphing functionality



Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

### Battery Life and Power Supply

The battery can be recharged (unit must be between 0 - 40°C) via a PC, a USB +5V wall adapter, or a portable USB battery pack using the USB lead provided. It can also be permanently powered by a USB wall adapter or USB battery pack. Readings may be affected while the internal battery is being charged. However, once charged, continued connection of the charger will have no effect.

Battery life is dependent on: transmission period, WiFi encryption method, WiFi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and WiFi device, presence volume and type of WiFi traffic from other devices, sample rate and operating temperature.

Specifications liable to change without prior warning

\*Requires Windows 7, 8.1, 10

# EL-WiFi-ULT+

-80°C Freezer



Your data, anytime, anywhere

## High Accuracy, Ultra Low Temperature Cryogenic Vaccine WiFi Data Logger

- Measurement range -100 to +100°C (-148 to +212°F)
- High accuracy T-type probe on 2m cable
- Wirelessly stream and view data on the EasyLog Cloud, App or on a PC
- View and analyse multiple sensors, including graphing of historic data
- Configurable high and low alarms with indicator
- Easy sensor set-up using free PC software or App



The EL-WiFi-ULT+ is designed to monitor vaccines in cryogenic dry ice storage.

Data is streamed wirelessly over any compatible WiFi network and can be viewed on a PC using free software or on the EasyLog Cloud or App.

To configure the sensor for use on a given wireless network, either connect it via USB to a PC running EasyLog WiFi software on the network, or configure wirelessly using the EasyLog Cloud app on a mobile phone with access to the network. The sensor can then be placed anywhere within range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application or EasyLog Cloud (max 30 days at 10 second sample interval).

The sensor is IEEE 802.11bgn\* (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).

EL-WiFi-ULT+ has a protection rating of IP40. The unit is freestanding, but can be attached to a wall or surface using the bracket provided. The unit can be clipped in and out of the bracket as required.

### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
Battery life		>6		Months
Temperature measurement range	-100 (-148)		+100 (+212)	°C (°F)
USB supply voltage (@500mA)	4.5	5.0	5.5	Vdc
Operating temperature range	-20 (-4)		+60 (+140)	°C (°F)
Logging period (user configurable)	10 sec	10 min	12 hrs	
Transmission period (user configurable)	1 min	1 hr	24 hrs	
Temperature measurement resolution		0.1 (0.2)		°C (°F)
Temperature display resolution		0.1		
Accuracy		±1.8 (±3.2)		°C (°F)
IP Rating	IP40 (Bung fully inserted, not permanently powered, thermocouple connector fitted and fully inserted, device mounted vertically.)			
Dimensions	82 x 70 x 23mm (3.22 x 2.75 x 0.91")**			
Probe dimensions	300 x Ø 1.5mm, 2m cable (11.8 x Ø 0.05, 39.3" cable)			

### ACCESSORIES

- PSU-5VDC-USB-USA** USB Mains Power Adapter for USA
- PSU USB-UK** USB Mains Power Adapter for UK
- PSU USB-EU** USB Mains Power Adapter for EU
- EL-P-TC-T-ULT+** Replacement T-type Thermocouple probe

### INCLUDED IN THE BOX

- EL-WIFI WALL BRACKET** Wall mounting bracket for EL-WiFi sensors
- EL-P-TC-T-ULT+** Thermocouple probe
- CABLE USB A-MICRO B** USB Type A to Micro B



\* MAC Address starting 98:8B:AD:2..... only

\*\* Excluding probe and mounting bracket



# EL-WiFi-ULT+



## High Accuracy, Ultra Low Temperature Cryogenic Vaccine WiFi Data Logger

Your data, anytime, anywhere

### EasyLog Software

Lascar's WiFi software\* is available as a free download from: [www.lascarelectronics.com/software/easylog-wifi](http://www.lascarelectronics.com/software/easylog-wifi). Easy to install and use, EL-WiFi-WIN allows easy connection of sensors to a WiFi network. The user can select where data is stored - the PC or the Cloud.



When setting up your logger, make sure you select the T-Type probe.

### EasyLog Cloud

#### Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



### Features at a glance\*



Store your data logging records securely on the Cloud



Connect multiple users with variable account privileges



Connect data loggers from multiple sites in a single account



Easily access your most important data, anywhere



Remotely manage all of your data logging devices



Never miss a critical event with flexible advanced notifications



Review and analyse your data with powerful graphing functionality



Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

### Battery Life and Power Supply

The battery can be recharged (unit must be between 0 - 40°C) via a PC, a USB +5V wall adapter, or a portable USB battery pack using the USB lead provided. It can also be permanently powered by a USB wall adapter or USB battery pack. Readings may be affected while the internal battery is being charged. However, once charged, continued connection of the charger will have no effect.

Battery life is dependent on: transmission period, WiFi encryption method, WiFi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and WiFi device, presence volume and type of WiFi traffic from other devices, sample rate and operating temperature.

Specifications liable to change without prior warning

\*Requires Windows 7, 8.1, 10

## EL-WiFi-DTP+ Dual Channel External Thermistor WiFi Temperature Sensor

- Measures temperature range -40°C to +125°C (-40°F to +257°F)
- Dual channel recording through two external thermistor probes
- Wirelessly stream and view data on the EasyLog Cloud, App or on a PC
- Sensor set up is easy using free PC software
- View and analyse multiple sensors, including graphing of historic data
- Configurable high and low alarms with indicator
- Sensor memory stores data even if WiFi is temporarily disconnected

The EL-WiFi-DTP+ measures the temperature of the environment in which the two probes are situated. The probes are connected to the sensor via a 160mm Y splitter cable which is provided. Data is streamed wirelessly over any compatible WiFi network and can be viewed on a PC using free software or on the EasyLog Cloud or App.

To configure the sensor for use on a given wireless network, either connect it via USB to a PC running EasyLog WiFi software on the network, or configure wirelessly using the EasyLog Cloud app on a mobile phone with access to the network. The sensor can then be placed anywhere within range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application or EasyLog Cloud (max 30 days at 10 second sample interval).

The sensor is IEEE 802.11bgn\* (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).

The EL-WiFi-DTP+ has a protection rating of IP40 and the probes IP67. The unit is freestanding, but can be attached to a wall or surface using the bracket provided. The unit can be clipped in and out of the bracket as required.



### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
<b>Battery life</b>		>6		Months
<b>USB supply voltage (@500mA)</b>	4.5	5.0	5.5	Vdc
<b>Operating temperature range</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Logging period (user configurable)</b>	10 sec	10 min	12 hrs	
<b>Transmission period (user configurable)</b>	1 min	1 hr	24 hrs	
<b>Temperature measurement range</b>	-40 (-40)		+125 (+257)	°C (°F)
<b>Temperature measurement resolution</b>		0.01 (0.02)		°C (°F)
<b>Temperature display resolution</b>		0.01		
<b>Temperature accuracy</b>		±0.2°C/±0.4°F (-15 to +80°C/ +5 to +176°F)	±0.6°C/±1.2°F (-40 to +125°C/ -40 to +257°F)	°C/°F
<b>IP Rating</b>	Logger IP40, Probe Tip IP67 (Bung fully inserted, not permanently powered, probe connectors (including Y Splitter) fitted and fully inserted, device mounted vertically.)			
<b>Dimensions</b>	82 x 70 x 32mm (3.22 x 2.75 x 1.26")**			

\* MAC Address starting 98:8B:AD:2..... only

\*\* Excluding probe and mounting bracket



### ACCESSORIES

<b>PSU-5VDC-USB-USA</b>	USB mains power adapter for USA
<b>PSU USB-UK</b>	USB mains power adapter for UK
<b>PSU USB-EU</b>	USB mains power adapter for EU
<b>EL-WiFi-Alert</b>	Audible and visual alarm for EL-WiFi sensors
<b>EL-P-TP+</b>	Replacement high accuracy thermistor probe

### INCLUDED IN THE BOX

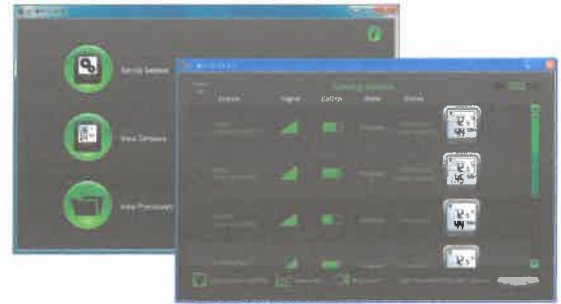
<b>EL-WIFI WALL BRACKET</b>	Wall mounting bracket for EL-WiFi sensors
<b>2x EL-P-TP+</b>	3m high accuracy thermistor probes
<b>CABLE USB A-MICRO B</b>	USB Type A to Micro B
<b>EL-PROBE-Y-ADAPTOR-TP</b>	160mm Y ADAPTOR

# EL-WiFi-DTP+ Dual Channel External Thermistor WiFi Temperature Sensor



## EL-WiFi-WIN

Lascar's WiFi software\* is available as a free download from: [www.lascarelectronics.com/software/easylog-wifi](http://www.lascarelectronics.com/software/easylog-wifi). Easy to install and use, EL-WiFi-WIN allows easy connection of sensors to a WiFi network. The user can select where data is stored - the PC or the Cloud.



## EasyLog Cloud

### Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



## Features at a glance\*



Store your data logging records securely on the Cloud



Connect multiple users with variable account privileges



Connect data loggers from multiple sites in a single account



Easily access your most important data, anywhere



Remotely manage all of your data logging devices



Never miss a critical event with flexible advanced notifications



Review and analyse your data with powerful graphing functionality



Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

## Battery Life and Power Supply

The battery can be recharged (unit must be between 0 - 40°C) via a PC, a USB +5V wall adapter, or a portable USB battery pack using the USB lead provided. It can also be permanently powered by a USB wall adapter or USB battery pack. Readings may be affected while the internal battery is being charged. However, once charged, continued connection of the charger will have no effect.

Battery life is dependent on: transmission period, WiFi encryption method, WiFi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and WiFi device, presence volume and type of WiFi traffic from other devices, sample rate and operating temperature.

Specifications liable to change without prior warning

\*Requires Windows 7, 8.1, 10

Room

# EL-WiFi-TH+



## High Accuracy WiFi Temperature and Humidity Sensor

- -20 to +60°C (-4 to +140°F) and 0 to 100% humidity measurement range
- Wirelessly stream and view data on the EasyLog Cloud, App or on a PC
- Easy sensor set-up using free PC software application
- View and analyse multiple sensors, including graphing of historic data
- Configurable high and low alarms with indicator
- Sensor memory stores all data even if WiFi is temporarily disconnected



The EL-WiFi-TH+ measures the temperature and humidity of the environment in which it is situated. Data is streamed wirelessly over any compatible WiFi network and can be viewed on a PC using free software or on the EasyLog Cloud or App.

To configure the sensor for use on a given wireless network, either connect it via USB to a PC running EasyLog WiFi software on the network, or configure wirelessly using the EasyLog Cloud app on a mobile phone with access to the network. The sensor can then be placed anywhere within range of the network. If the sensor temporarily loses connectivity with the network, it will log readings until it is able to communicate again with the PC application or EasyLog Cloud (max 30 days at 10 second sample interval).

The sensor is IEEE 802.11bgn\* (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).

The EL-WiFi-TH+ has a protection rating of IP55. The unit is freestanding, but can be attached to a wall or surface using the bracket provided. The unit can be clipped in and out of the bracket as required.

### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
<b>Battery life</b>		>6		Months
<b>USB supply voltage (@500mA)</b>	4.5	5.0	5.5	Vdc
<b>Operating temperature range</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Logging period (user configurable)</b>	10 sec	10 min	12 hrs	
<b>Transmission period (user configurable)</b>	1 min	1 hr	24 hrs	
<b>Temperature measurement range</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Temperature measurement resolution</b>		0.01		°C
<b>Temperature display resolution</b>		0.01		
<b>Temperature tolerance</b>		±0.2°C/ ±0.4°F** (+5 to +60°C/ +41 to +140°F)		°C/°F
<b>Humidity measurement range</b>	0		100	%RH
<b>Humidity measurement resolution</b>		0.1		%RH
<b>Humidity display resolution</b>		0.1		
<b>Humidity tolerance (@ 25°C)</b>		±1.8%RH** (10 to 90%RH)		%RH
<b>IP Rating</b>	IP55 (Bung fully inserted, not permanently powered, device mounted vertically.)			
<b>Dimensions</b>	82 x 70 x 23mm (3.22 x 2.75 x 0.91")***			

\* MAC Address starting 98:8B:AD:2..... only.

\*\* Please refer to the charts in this datasheet for more detailed accuracy specifications.

\*\*\* Excluding mounting bracket.

### ACCESSORIES

<b>PSU-5VDC-USB-USA</b>	USB Mains Power Adapter for USA
<b>PSU USB-UK</b>	USB Mains Power Adapter for UK
<b>PSU USB-EU</b>	USB Mains Power Adapter for EU
<b>EL-WiFi-Alert</b>	Audible and Visual Alarm for EL-WiFi Data Logging Sensors

### INCLUDED IN THE BOX

<b>EL-WIFI WALL BRACKET</b>	Wall mounting bracket for EL-WiFi sensors
<b>CABLE USB A-MICRO B</b>	USB Type A to Micro B



# EL-WiFi-TH+



## High Accuracy WiFi Temperature and Humidity Sensor

### EL-WiFi-WIN

Lascar's WiFi software\* is available as a free download from: [www.lascarelectronics.com/software/easylog-wifi](http://www.lascarelectronics.com/software/easylog-wifi). Easy to install and use, EL-WiFi-WIN allows easy connection of sensors to a WiFi network. The user can select where data is stored - the PC or the Cloud.



### EasyLog Cloud Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



### Features at a glance\*



Store your data logging records securely on the Cloud



Connect multiple users with variable account privileges



Connect data loggers from multiple sites in a single account



Easily access your most important data, anywhere



Remotely manage all of your data logging devices



Never miss a critical event with flexible advanced notifications



Review and analyse your data with powerful graphing functionality



Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

### BATTERY LIFE AND POWER SUPPLY

The battery can be recharged (unit must be between 0 - 40°C) via a PC, a USB +5V wall adapter, or a portable USB battery pack using the USB lead provided. It can also be permanently powered by a USB wall adapter or USB battery pack. Readings may be affected while the internal battery is being charged. However, once charged, continued connection of the charger will have no effect.

Battery life is dependent on: transmission period, WiFi encryption method, WiFi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and WiFi device, presence volume and type of WiFi traffic from other devices, sample rate and operating temperature.

Specifications liable to change without prior warning

\*Requires Windows 7, 8.1, 10

## High Accuracy WiFi Temperature and Humidity Sensor

### SENSOR ACCURACY & INFORMATION

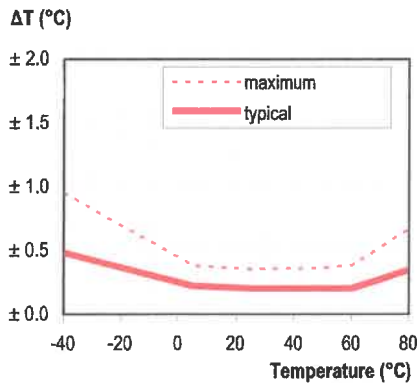
The humidity measuring element in the humidity data loggers can be contaminated through exposure to a variety of compounds. These products should not be kept in proximity to volatile chemicals such as solvents and other organic compounds. Generally speaking, if a material or compound emits a strong odour you should not keep your humidity data logger in close proximity to it. If you would like more information, please contact your local Lascar Electronics office.

Exposure to extreme conditions or chemical vapours will require the following reconditioning procedure to bring the internal sensor back to calibration state:

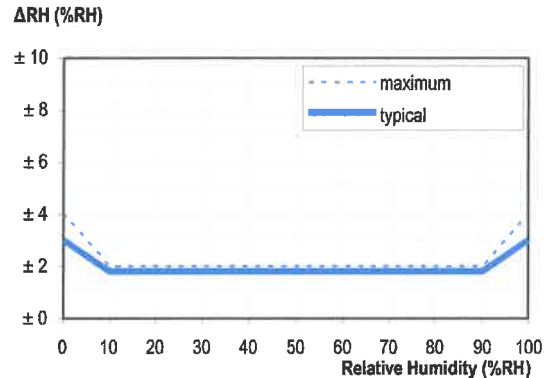
- Baking**            80°C (176°F) at < 5%RH for 36 hours.
- Re-hydration**    20 to 30°C (70 to 90°F) at > 74%RH for 48 hours.

High levels of pollutants may cause permanent damage to the internal sensor.

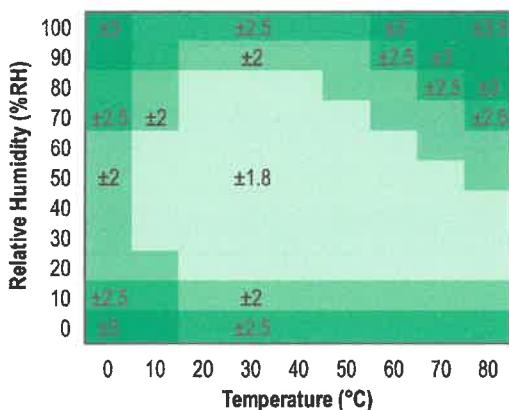
Typical and maximal tolerance for temperature sensor in °C.



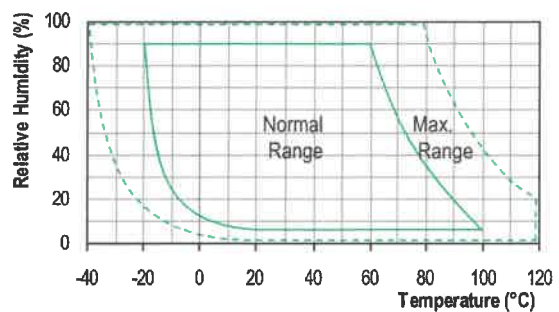
Typical and maximal tolerance at 25°C for relative humidity.



Typical accuracy of relative humidity measurements given in %RH for temperatures 0 to 80°C.



Operating conditions



Long term exposure to humidity levels outside of the 'normal' range may temporarily offset RH measurements (±3%RH after 60 hours). Once returned to less extreme conditions the device will slowly return towards calibration state.

When tracking changes in ambient conditions, the response time of the humidity sensor in your data logger is approximately 20 minutes to reach 90% of the reading. However, if you are measuring step changes in humidity (for example if calibrating the product) it is advised that you leave the unit for up to four hours to ensure that it has enough time to settle at the new level.

It is worth remembering that the value of relative humidity is of course sensitive to temperature variation. As an example, at a relative humidity of ~90%RH at ambient temperature, a variation in temperature of 1°C will result in a change of up to -5%RH. Therefore when comparing multiple devices or calibrating them, any temperature variations must be considered.



# EL-WiFi-TPX+

# Freezer



## Wi-Fi Connected High-Accuracy Temperature Data Logger with Alarm Warning Light and Sounder



- Temperature measurement range -40 to +125 °C (-40 to +257 °F)
- Configurable alarm levels with on-board warning light and sounder
- Digital calibratable probe with 3m cable (calibration certificate can be ordered separately)
- No need to remove from service for recalibration, just replace the probe
- Wirelessly stream and view data on the EasyLog Cloud, and configure alarm email notifications
- View and analyse multiple devices, including graphing of historic data
- Easy device setup using free PC software or mobile app
- Device memory stores all data even if Wi-Fi is temporarily disconnected

The EL-WiFi-TPX+ measures the temperature of the environment in which the probe is situated. Data is streamed wirelessly over any compatible Wi-Fi network and can be viewed on any internet-enabled device, via browser or free mobile app.

Device setup and connection to a Wi-Fi network and the EasyLog Cloud are simple, just download the free EasyLog WiFi PC software or the free EasyLog Cloud mobile app and follow the device setup wizard. The device can be placed anywhere within range of the Wi-Fi network. If the device temporarily loses connectivity with the Wi-Fi network, it will log readings until it is able to communicate again with the EasyLog Cloud (max. 30 days at 10 second sample interval).

The device is IEEE 802.11bgn (2.4GHz) compliant, supports WEP, WPA/WPA2 encryption and enterprise networks (PEAP, TTLS, FAST).

The EL-WiFi-TPX+ has a protection rating of IP42, and the probe IP67. The device is freestanding, but can be attached to a wall or surface using the bracket provided, and clipped in and out of the bracket as required. This device is equipped with a translucent back to show a red flashing indicator when it is in an alarm state as well as a moderate volume sounder to alert anyone in close proximity.

### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
<b>Battery life*</b>		>6		Months
<b>USB supply voltage (@500mA)</b>	4.5	5.0	5.5	Vdc
<b>Operating temperature range</b>	-20 (-4)		+60 (+140)	°C (°F)
<b>Logging period (user configurable)</b>	10 sec	10 min	12 hrs	
<b>Transmission period (user configurable)</b>	1 min	1 hr	24 hrs	
<b>Temperature measurement range</b>	-40 (-40)		+125 (+257)	°C (°F)
<b>Temperature measurement resolution</b>		0.01 (0.02)		°C (°F)
<b>Temperature display resolution</b>		0.01		
<b>Temperature accuracy**</b>		±0.2/±0.4 (-15 to +80/ +5 to +176)	±0.6/±1.1 (-40 to +125/ -40 to +257)	°C/°F
<b>IP Rating</b>	Logger IP42, Probe IP67 (Bung fully inserted, not permanently powered, probe connector fitted and fully inserted, device mounted vertically.)			
<b>Dimensions</b>	82 x 70 x 36mm (3.22 x 2.75 x 1.41")			

\* Please note the battery life statement on page 2 of this data sheet

\*\* Accuracy may be affected when using a non-approved power supply to charge or permanently power the EL-WiFi-TPX+

### ACCESSORIES

<b>EL-P-TPX+</b>	Replacement High-Accuracy Calibratable Thermistor Probe
<b>PSU-5VDC-USB-USA</b>	USB Mains Power Adapter for USA
<b>PSU USB-UK</b>	USB Mains Power Adapter for UK
<b>PSU USB-EU</b>	USB Mains Power Adapter for EU

### INCLUDED IN THE BOX

<b>EL-WIFI-TPX+</b>	High-Accuracy Data Logger with Calibratable Thermistor Probe
<b>EL-WIFI WALL BRACKET</b>	Wall Mounting Bracket for EL-WiFi Sensors
<b>CABLE USB A-MICRO B</b>	USB Type A to Micro B



# EL-WiFi-TPX+

Wi-Fi Connected High-Accuracy Temperature Data Logger with Alarm Warning Light and Sounder



## Easy Device Set Up and Connection

EL-WiFi-TPX+ is easy to set up and connect to the EasyLog Cloud. Use the EasyLog WiFi software for PC\* (free to download [here](#)) or the EasyLog Cloud app available from Google Play or on the App Store.



\*Requires Windows 7, 8.1, 10

## EasyLog Cloud Your Data. Anytime. Anywhere.

EasyLog Cloud harnesses the power of IoT to automate data logging and alert notifications, enabling you to monitor and manage multiple data logging devices in different locations completely remotely. The system easily scales to meet your needs. Perfect for compact systems with just a few measuring points, or corporate solutions with thousands of devices around the globe.

You will need to create an account at [www.easylogcloud.com](http://www.easylogcloud.com) before setting up your cloud-connected data logger.



## Features at a glance\*



Store your data logging records securely on the Cloud



Connect multiple users with variable account privileges



Connect data loggers from multiple sites in a single account



Easily access your most important data, anywhere



Remotely manage all of your data logging devices



Never miss a critical event with flexible advanced notifications



Review and analyse your data with powerful graphing functionality



Keep track of data events and system activity with a detailed event log

\*Features depend on account type.

## Battery Life and Power Supply

The battery can be recharged (unit must be between 0 - 40°C) via a PC, a USB +5V wall adapter, or a portable USB battery pack using the USB lead provided. It can also be permanently powered by a USB wall adapter or USB battery pack. Readings may be affected while the internal battery is being charged. However, once charged, continued connection of the charger will have no effect.

Battery life is dependent on: transmission period, Wi-Fi encryption method, Wi-Fi encryption key rotation frequency (determined by the router/access point), signal strength between router/access point and Wi-Fi device, presence, volume and type of Wi-Fi traffic from other devices, sample rate, operating temperature and frequency of audible and visual alerts.

*Specifications liable to change without prior warning*



### What is this?

This help document offers guidance on Network Requirements and Settings for the FilesThruTheAir™ WiFi sensor products.

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### What Network Requirements are required to use the FilesThruTheAir™ WiFi Sensor Products?

The FilesThruTheAir™ data logging sensors require an \*802.11b (VFC300-E does support 802.11b, g or n) compatible network and support the following encryption methods:

- None. No authentication or encryption – not recommended
- WPA/WPA2 Pre-shared key (PSK) -- recommended
- WPA/WPA2 Enterprise ([see below for more information](#))
- WEP – 64bit or 128bit encryption. Requires WEP passkey in hexadecimal rather than ASCII passphrase.

The WiFi Sensors will only operate on a \*802.11b network using data rates of 1,2,5.5,11 Mb/s.

Wireless access points must be configured to allow \*802.11b traffic (excludes VFC300-E).

By default the WiFi Sensors will obtain an IP address via DHCP, this is normal for most networks. The IP address can also be manually configured ([see below for more information](#)).

When using the PC software the sensors must be connected either wired or wirelessly to the same network and use the same IP address range as the PC.

If the software is running on a virtual machine it may be given a different IP address to the host PC. It will need to be given an IP address that is in the same range as the WiFi Sensors.


If you have multiple network connections on the PC, the software may not be able to automatically choose the one which the WiFi Sensors are connected to. [See below for more information](#).

When using the FilesThruTheAir™ Cloud service the sensors and the PC do not need to be on the same network but both require an internet connection during setup.

Wireless access points must have wireless isolation or guest modes disabled to enable communication between devices.

Corporate networks may need additional configuration to allow communication between the sensor and the PC.

MAC Address filtering on the access point must be disabled or the address of the sensors included in the allowed list. The MAC Address can be found on the serial number label on the back of the unit.

**\*  This does not apply to WiFi data logger VFC300-E, MAC address range 98:8B:AD:2x:xx:xx, as these are later 802.11g/n client devices and will detect g and n network rates.**



### How do the FilesThruTheAir™ WiFi Sensor Products communicate on the network and what firewall settings may be required?

The WiFi Sensors communicate using different methods depending on whether they are connected to a local PC or to the FilesThruTheAir™ Cloud.

All communication is initiated by the WiFi Sensors themselves. While not communicating, the devices are in a low power mode with the radio module turned off.

#### Local PC:

The Firewall must allow full access to the WiFi Sensor Software, failure to do so will prevent the sensors from communicating.

From Application Firmware version 3.xx onwards, the WiFi sensors primarily use TCP port 10080 to communicate with the PC Software. In addition they use UDP broadcast packets on UDP ports 1024 and 8010 for alarm notifications and discovery of a PC once TCP connection has been lost. Any firewalls running on the PC will need the TCP and UDP ports open for correct operation.

#### Cloud Service:

*INCLUDED*

In order to set up the WiFi Sensors on the Cloud, both the PC Software and the Sensors require an internet connection. The PC Software connects to the Cloud via a HTTPS connection in order to set up the sensor. This is only required during initial configuration. The WiFi Sensors communicate with the Cloud using TCP port 14354. Most domestic routers do not have restrictions on outbound TCP connections but corporate networks may require an exception in the router/firewall.

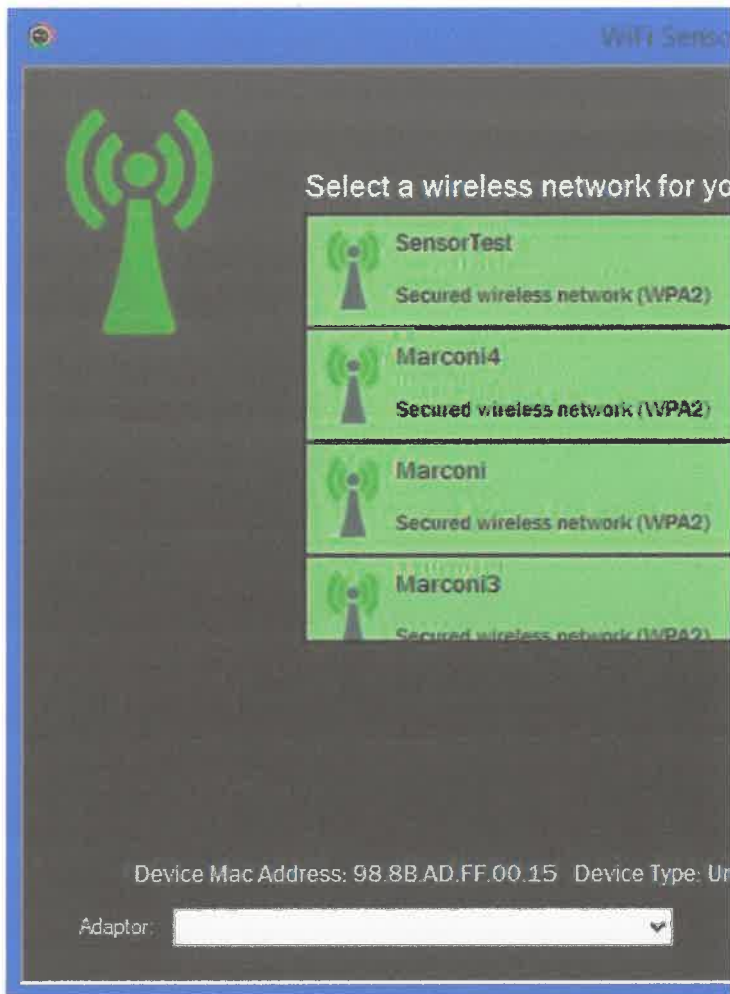
#### UDP Broadcast:

Communication between the WiFi Sensors and the WiFi Alert unit is achieved using UDP broadcast as the sensors do not have knowledge of how many Alerts are listening on the network. It is also used by the WiFi Sensors when running in local PC mode when TCP connection to the PC is lost. This is in order to recover from the situation where the IP address of the sensor may have changed. In order to reduce network traffic, many managed wireless networks have UDP broadcast traffic filtered by default which may inhibit the operation of the WiFi Devices. On Aruba managed networks this setting is called 'Drop Broadcast and Multicast Traffic'.



### My PC has multiple network connections. Is this a problem?

When using the WiFi Sensors with the PC software, they must be on the same network in order to communicate. If the PC has multiple network connections e.g. wired and wireless, the WiFi Sensor Software may not be able to automatically select the correct network connection.




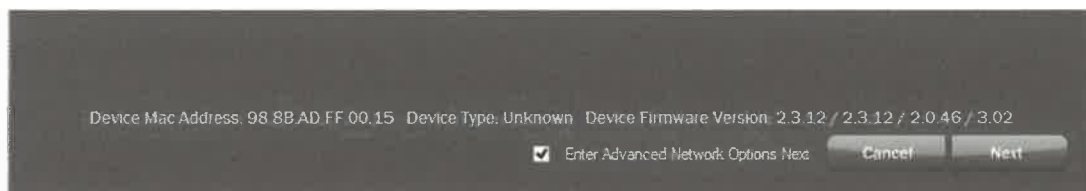
On the Wireless Network selection screen, click on the green antenna symbol on the top left of the window. This will cause a dropdown box to appear on the bottom left. Select the network adaptor which corresponds to the same network as the WiFi Sensors. Then continue the setup as normal.



### How do I configure my WiFi Sensors with a static IP Address?

If you do not have a DHCP server on your network or wish to manually assign an IP address, these settings are found on the **Advanced Network Options** screen. Ticking the box on the **Wireless Network Selection** screen then clicking **Next** will take you to the advanced options.

 If you are manually assigning static IP addresses to the sensors you must also assign a static address to the PC you are using to administer the sensors.





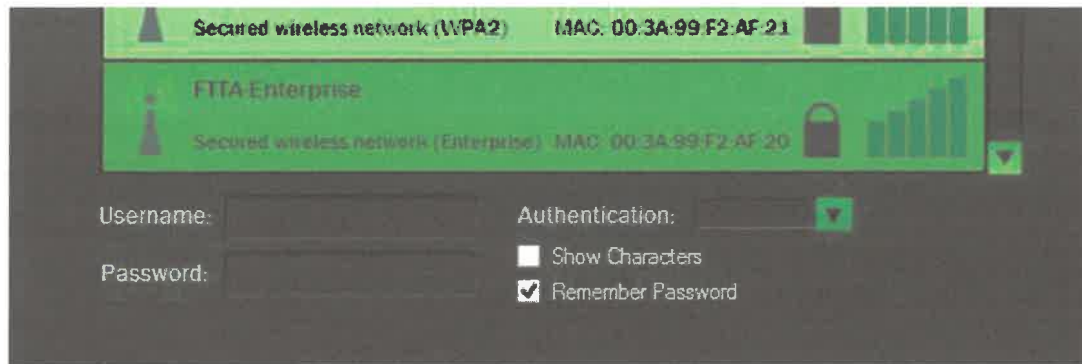
### Can I connect my WiFi Sensors to a wireless network with Enterprise Authentication?

Enterprise Authentication is supported on devices with System Firmware of 2.3.12 and above.

We support the following Authentication Methods:

- PEAP/MSCHAPv2
- FAST
- TTLS

Selecting an Enterprise network will prompt entry of a username and password:



You also need to select the authentication type in the dropdown box. Consult your IT Administrator if you are unsure what type of enterprise network you have.

We do not support the following types which require a client certificate to be installed:

- TLS
- GTC
- LEAP





### My Wireless Network doesn't appear in the list, what could be causing this?

If you have refreshed the network list several times but your network does not appear, there are several possible causes:

The wireless network could be out of range of the sensor, try moving the sensor and the access point/router closer together and trying again.

The wireless network name (SSID) could be hidden. Either change the access point or router configuration to make the SSID visible or use the option to connect to Join Other Network and enter the details manually.



The SSID may contain invalid characters. The Wifi sensors are unable to handle certain special characters such as spaces or commas in the SSID or trailing spaces at the end. You may need to change the SSID of the network. This also applies to passwords.

The wireless network may not have the correct modulation or data rates enabled. The Wifi sensors require \*802.11b to be enabled. See section [What Network Requirements are there to use the FilesThruTheAir™ WiFi Sensor Products?](#)

\* This will not apply to WiFi data logger VFC300-E, MAC address range 98:8B:AD:2x:xx:xx, as they are later 802.11g/n client devices and do not require the legacy modulations enabled.



## I am getting an 'Error Saving' message at the end of the set-up process for my WiFi Sensor, what could be causing this?

At the end of the set-up process, the WiFi Sensors transmit a test message to the PC Software or to the Cloud in order to confirm that the configuration is correct. This error message most often due to the test connection failing.

### Local PC:

The most common reason for the test connection to fail is the packets being blocked by a firewall on your PC. Please follow our firewall configuration guides to ensure that you have the required ports open.

In order to communicate, the PC must be on the same network as the wireless device which the sensors are connected to. Another cause of the test connection failing can be if you have multiple network adaptors on your PC, such as a wired and wireless connection or a USB 3G Modem connected. Please see the help section on multiple network adaptors [here](#).

### Cloud Service:

When connecting a sensor to the Cloud, the message is transmitted across the internet to the Cloud Server. This requires the sensor to be able to access the internet via the wireless network on TCP Port 14354. Most domestic internet routers do not have restrictions on outbound TCP connections by default. Users on corporate networks may need to contact their IT Administrator to ensure that TCP Port 14354 is open for outbound traffic.



### **There is an Enterprise Level Firewall (eg Sonicwall, Fortigate) on our network; will this stop the WiFi Sensors working on the Cloud?**

The answer to this depends very much on the configuration of the Firewall. If the Firewall is configured to allow unrestricted outbound traffic, it should not cause any issues.

Some corporate firewalls are configured to only allow traffic from known or authenticated clients, eg using Windows Domain Login. As the WiFi Sensors are unable to respond to requests to identify themselves, the Firewall may not allow access through to the internet. In this case, an exception will need to be added for the IP or MAC Address of the WiFi Sensor. Please consult your IT Administrator.