

Industry Application Article



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Automatic Temperature Recording for Food Storage in Supermarkets



We consider how temperature data loggers can be used in the food retail industry to automatically record food storage temperature and alert staff to any issues that arise. Particular consideration is given for supermarkets and similar facilities that deal with large quantities of temperature-sensitive food produce.

The food retail industry is governed by stringent safety regulations, particularly with regards to the temperature of food storage. For example, in the UK, chilled food storage is required to be kept at or below 8°C, while frozen food storage is required to be kept at or below -18°C (Food Standards Agency, 2019).

In supermarkets and similar establishments that deal with high quantities of temperature-sensitive food and drink, the industry regulations place great importance on staff's ability to tightly control storage temperatures and maintain robust records of this as evidence of their due diligence in maintaining the safety of produce. This can be time-consuming and sometimes unreliable, however, **here at FilesThruTheAir, we believe automation using data loggers is the ideal solution.**

What Are Data Loggers?

Data loggers are advanced sensors that systematically collect and record data readings. Temperature data loggers can be particularly useful in the food retail industry for two primary reasons:

- They can automatically maintain robust temperature records that evidence due diligence in storing food and drink at the correct temperature (with minimal, if any, staff workload).
- They can provide staff with prompt alerts to any temperature issues, giving them the opportunity to correct these as quickly as possible, potentially preventing damage to valuable, temperature-sensitive stock that would otherwise get wasted.



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A wide variety of data loggers exist on the market, varying in connectivity options (how the user gets data readings from the data logger to a readable platform), accuracy level, alarming functionality, power supply, and other features. As specialists in data logging technology, FilesThruTheAir have a variety of data loggers available that are perfectly suited to monitoring food storage temperature throughout supermarkets and similar establishments.

Recommended Data Loggers for Supermarkets and Similar Establishments

For supermarket applications, we recommend using a Wi-Fi connected data logger because:

- The infrastructure is normally in place (a reliable Wi-Fi network with strong signal across the facility).
- Data is transferred wirelessly with no need for human interaction and therefore zero workload on staff for the collection of data.
- Devices can be configured wirelessly (saves time physically going to each device if settings need to be updated).

If you don't believe a Wi-Fi connected solution would work for you, please jump to the section 'Offline Solutions' to see what else we have to offer.

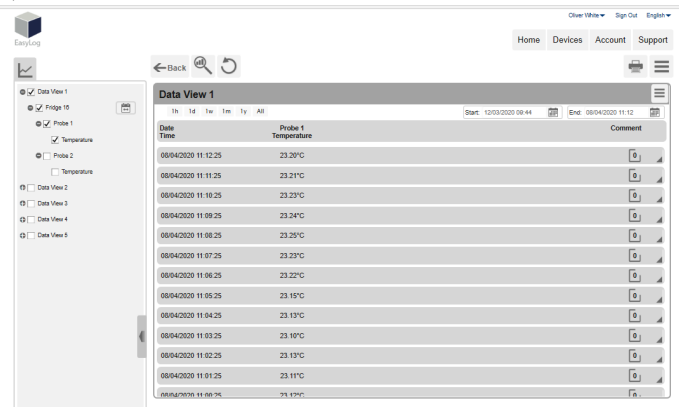
From our range of [Wi-Fi connected data loggers](#), we believe that [EL-WiFi-TP](#) is the perfect solution for temperature monitoring in supermarkets. This device measures temperature (between -40 and +125°C) using an external thermistor probe and records readings, via your Wi-Fi network, to your EasyLog Cloud account (high-accuracy and dual-probe variants are also available: [EL-WiFi-TP+](#) and [EL-WiFi-DTP+](#)).

The [EasyLog Cloud](#) is a user-friendly data storage and device management system that allows you to view, analyse and report data, 24/7, from anywhere in the world (via mobile app or internet browser). See live and historic data readings from all of your devices across multiple locations, as well as any device events/alarms. You can also use the Cloud platform to manage device settings such as sample rate, transmission rate and alarm levels.

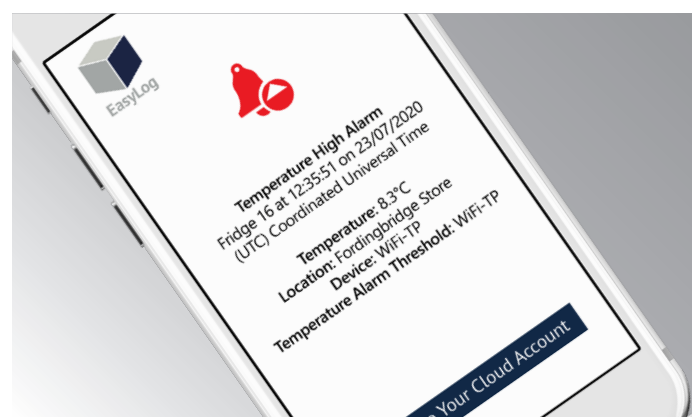
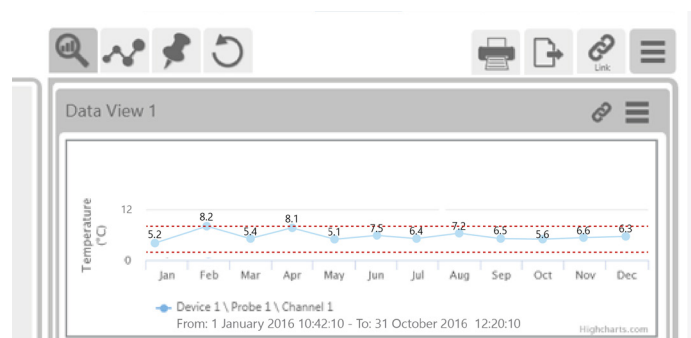
Want to know more about the EasyLog Cloud? Why not schedule a demonstration via video call with one of our team? We can show you all of the system's powerful functionality and how easy it is to use! Call +44 (0) 1425 651111 or email sales@filesthrutheair.com to arrange.

Why is EL-WiFi-TP the Ideal Solution?

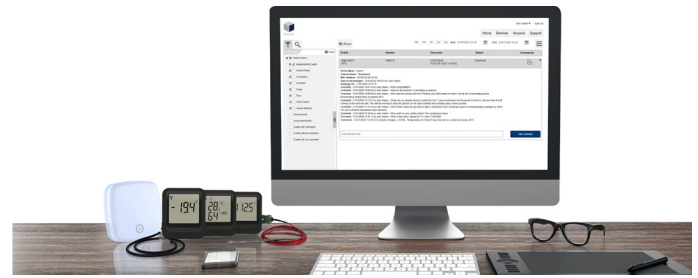
- **Suitable for chilled, frozen and ambient storage conditions** using the external thermistor probe. Simply position the probe in the environment that you wish to monitor and leave the device to automatically monitor this for you.
- **Never miss a critical temperature check.** Provided the device has power, the EL-WiFi-TP will always log data at its configured sample rate. Even in the event of a Wi-Fi failure, the device will continue to log data on-board. Once a Wi-Fi connection is automatically re-established, the device will upload all missing readings to your EasyLog Cloud account. Supermarkets should enable email notifications from the Cloud for when your device loses and regains Wi-Fi connection, notifying on-duty staff so that they can temporarily revert to manual temperature checks if necessary. The device's on-board LCD screen makes this easy, displaying live min/max and actual temperature, as well as battery level, Wi-Fi signal and alarm status.
- **Easy data viewing, analysis and reporting** for one or multiple devices. All devices can be organised tidily by location in your EasyLog Cloud account. You can view data for specific time frames, graph this data, and even export the individual readings for each of your devices. In just a few clicks, you can always have a complete record of temperature readings for each of your storage environments.
- **Email notifications and alarms** can be configured for each device. Get notifications of power status, battery level, device issues, Wi-Fi connectivity and temperature alarm status. A supermarket can set custom high and low alarm levels for each device (depending on what temperature that storage environment needs to maintain) and configure alarm notifications to an on-duty staff email account. These will allow an on-duty staff member to quickly react to the issue, potentially preventing damage to stock.

Date/Time	Temperature	Comment
05/04/2020 11:12:25	23.20°C	
05/04/2020 11:11:25	23.21°C	
05/04/2020 11:10:25	23.23°C	
05/04/2020 11:09:25	23.24°C	
05/04/2020 11:08:25	23.25°C	
05/04/2020 11:07:25	23.23°C	
05/04/2020 11:06:25	23.22°C	
05/04/2020 11:05:25	23.15°C	
05/04/2020 11:04:25	23.13°C	
05/04/2020 11:03:25	23.10°C	
05/04/2020 11:02:25	23.13°C	
05/04/2020 11:01:25	23.11°C	
05/04/2020 11:00:25	23.12°C	



- **Multiple users with different permissions** can be added to an EasyLog Cloud account. This is ideal because you can set users for different locations and different groups of data loggers for local management of the devices whilst at a top level having access to data across all devices and locations.
- **Rechargeable battery and mains power** can be used to power the device. In order to eradicate the need for recharging the devices, we recommend that supermarkets power the devices permanently via mains (using the suitable power adaptor: [Power Adaptor for UK](#), [Power Adaptor for EU](#), or [Power Adaptor for USA](#) – *contact our team for more info*).
- **Tidy and discreet appearance** can be achieved using the supplied EL-WiFi wall bracket. You can also order our new 'Probe Installation Kit' which is designed for use with refrigerators and freezers in order to keep cables tidy and help maintain fridge/freezer seal integrity (speak to our team for more information).
- **Integrate temperature data into your current stock management systems using an API.** We're aware that many supermarkets already have comprehensive stock management systems in place. Using the EasyLog API there is also the possibility to integrate our temperature monitoring products (including EL-WiFi-TP) and EasyLog Cloud system into your current stock management systems. Contact our team to discuss this further.



We're now offering [EL-WiFi-TP in packs of 10](#), with the added benefit of free EasyLog Cloud subscription for one year. Speak to our team to find out what subscription will cost after this period.

Alternative Wi-Fi Connected Solutions

EL-MOTE

Not convinced that EL-WiFi-TP is the perfect solution for your application? You may wish to consider our other range of Wi-Fi connected data loggers, [EL-MOTE](#). Similar to EL-WiFi, these loggers will upload data directly to your EasyLog Cloud account. The key difference with this product is that there is no LCD screen, however, the product does offer local alarming using an audible sounder. This means if at any stage the device goes into alarm mode, a beeper will sound, notifying any staff on hand immediately. The [EL-MOTE-TP](#) is this range's equivalent to the EL-WiFi-TP discussed above (high-accuracy and dual-probe variants are also available: [EL-MOTE-TP+](#), [EL-MOTE-DTP](#) and [EL-MOTE-DTP+](#)).

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Offline Solutions

EL-USB

Offline data loggers can be useful for facilities without Wi-Fi infrastructure, or for other stages of the food cold chain such as transport.

The most appropriate offline data logger that we offer for chilled and frozen storage is the [EL-USB-TP-LCD](#). This data logger measures temperature (between -40 and +125°C) using an external thermistor probe which can be placed in the food storage environment. Data readings are initially stored on-board the device (over 32'000 readings) and can then be downloaded to PC or laptop via USB at the user's convenience. All the while the device's LCD screen can display live min/max and actual temperature, while on-board LED lights indicate alarm status. These can give instant notification to staff carrying out checks as to whether the food stored in that environment is safe to sell.

EL-CC

Our [EL-CC-1 temperature data loggers](#) are designed specifically for cold chain applications. Monitor food in transit with these low cost loggers that have an LED light which will indicate on delivery whether the storage environment has entered alarm mode at all during transport. A full record of temperature throughout transit can then be downloaded to PC or laptop via USB as evidence of your due diligence.

Available in packs of 10, the EL-CC loggers for food applications come with pre-configured alarm levels at +2 and +8°C for [chilled goods](#), -16 and -20°C for [frozen goods](#) and +12 and +14°C for [ripening goods](#). If these alarm levels aren't suitable for your application, contact our team to discuss EL-CC products with custom pre-configured alarm levels.





Sourcing the Perfect Solution

We understand that in supermarkets and similar food retail applications, establishments can potentially deal with hundreds of different measurement points. We want to give you full confidence that you're investing in a robust solution to your unique temperature monitoring needs. Our team are available Monday to Friday (08:30 – 17:00 BST), please feel free to get in touch. We can talk you through different product options, arrange demonstrations via video call, and even discuss the potential for custom product development.

Contact our team today by
phone: +44 (0)1425 651111 or email: sales@filesthrutheair.com

References

Food Standards Agency, 2019. Safer Food Better Business for Retailers. [Online]

Available at: www.food.gov.uk/business-guidance/safer-food-better-business-for-retailers

[Accessed 20 07 2020].

