> **What is this?**
>
> This help document offers guidance on battery life for the FilesThruTheAir™ WiFi sensor products.

Approximately how long will a fully charged battery last in my FilesThruTheAir™ WiFi sensor?

The FilesThruTheAir™ data logging sensors are powered by quality LiPo batteries. The battery life of the sensor is dependent on use. Transmitting data uses a lot of battery power. By increasing the time between transmissions the battery will last longer. See the table below.

| Transmission Period	Typical Battery Life
1 Minute	1 Month
15 Minutes	3 Months
1 Hour+	6 Months+

The product will arrive partly charged but you should charge it for 24 hours before use for optimum performance. The battery can be recharged using a PC, a USB 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 for some sensor types, while the internal battery is being charged. However once charged, continued connection of the charger will have no effect.

Battery life is dependent on a wide range of parameters including:
- Transmission period.
- Operating temperature. (Lower extremes will have a significant effect).
- WiFi encryption method.
- WiFi encryption key rotation frequency (determined by the AP/router).
- Signal strength between router and WiFi device.
- Presence volume and type of WiFi traffic from other devices.
- Sample rate.

Regardless of whether you have chosen to store your data on the PC or on the FilesThruTheAir™ Cloud, optimum battery life is achieved when each data transmission from the WiFi sensor is successfully received by the host. If the PC Software is not running, the WiFi network is down, or for any other reason connection between sensor and host is lost, the sensor attempts to periodically re-establish communications until connection is made and data is synced. To ensure optimal battery life we recommend that wherever possible, a wireless connection to the host is permanently maintained.
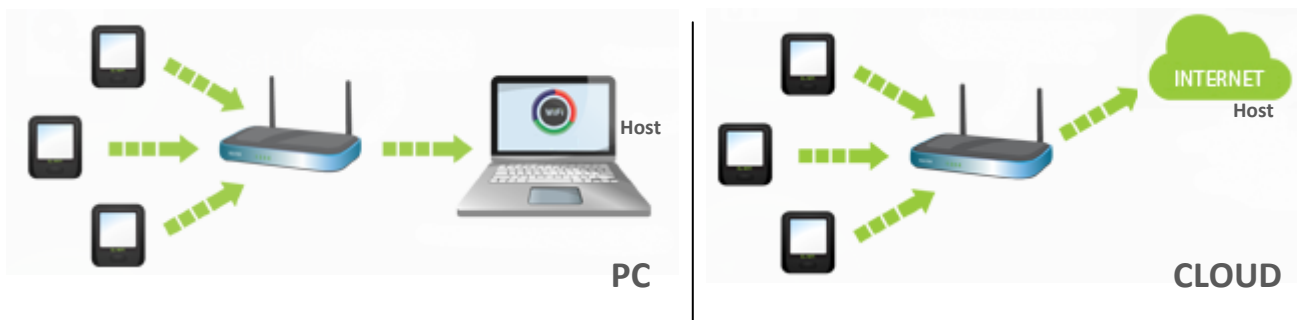
What is the service life of the battery inside my FilesThruTheAir™ WiFi Sensor?

It is generally accepted, that the service life of a battery has come to an end when it reaches 80% of its original capacity (of course the battery will continue to work satisfactorily beyond this). Our products use a quality LiPo (Lithium Polymer) battery, which under normal conditions of operation, charging and storage will provide a service life in excess of 300 charge/discharge cycles.

For example, if you recharge your sensor every three months, the battery service life would be at least 75 years.

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How should I store my FilesThruTheAir™ WiFi Sensors?

If you need to store your WiFi sensors for any length of time, we recommend the following guidelines in order to preserve battery capacity:

1. Do not exceed the acceptable storage temperature range of -20 to +30°C. Storage at room temperature is OK, although more battery capacity is preserved at lower temperatures.
2. If the WiFi symbol is shown, flashing or fixed, in the top left corner of the LCD then the WiFi sensor *must* be factory reset by pressing and holding the button for 20 seconds, prior to storage.
3. The battery should be part-charged to 40-50% capacity prior to storage. This can be achieved by charging the WiFi sensor for approximately 4 hours from flat (8 hours when using a WiFi-DTP+, WiFi-DTC or a sensor with an extended battery pack). We do not recommend storing a fully charged or fully discharged WiFi sensor.
4. For long-term storage, we recommend that batteries are periodically topped-up to maintain a nominal 40-50% capacity. We recommend recharging for 3 hours every 6 months.

Why is the battery in my FilesThruTheAir™ WiFi Sensor not charging?

It is safe to recharge the WiFi sensor between 0 and 40°C. A safety feature inside, prevents charging when the *internal* temperature is outside this range. This 'charging error' condition is indicated when both MIN and MAX are shown together on the LCD.

How do I ensure that I get the best possible battery life from my FilesThruTheAir™ WiFi Sensors?

- Do not exceed the acceptable operating temperature range of -20 to +60°C. Lower temperatures will significantly reduce battery capacity.
- Choose the longest Transmission Rate suitable for your application. Remember, you will receive alarm notifications immediately, regardless of your Transmission Rate setting.
- Wherever possible avoid deep discharging your sensor. Recharge your sensors while they still have some charge left on a schedule to suit you.
- If storing your sensors, do not exceed the acceptable storage temperature range of -20 to +30°C and maintain a 40-50% charge.
- Wherever possible maintain a permanent wireless connection to the host (PC or FilesThruTheAir™ Cloud).

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