

# Flytec Balloon TT34 user manual

Version 1.0 (29.05.2020)



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# Introduction

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The Flytec Balloon TT34 is a wireless temperature measurement device specifically developed for the needs of modern hot-air ballooning. It works in conjunction with any Flytec Balloon variometers and transmits the measured envelope temperature to those devices.

The TT34 is designed to use a very low amount of electric power during regular operation. An automatic activation and deactivation ensure that the transmission occurs only when the balloon is being operated.

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# Batteries

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The Flytec Balloon TT34 uses one regular 9V Alkaline battery. In new devices, the battery is already installed.

The use of rechargeable batteries is not recommended, since the lower capacity of rechargeables diminishes the operation autonomy of the TT34 considerably.

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## Low battery alert

Along with the current temperature, the TT34 also transmits its own battery state. This allows the receiving variometer to issue an alert once the TT34 reports low battery. Once that occurs, replace the TT34's battery before the next flight.

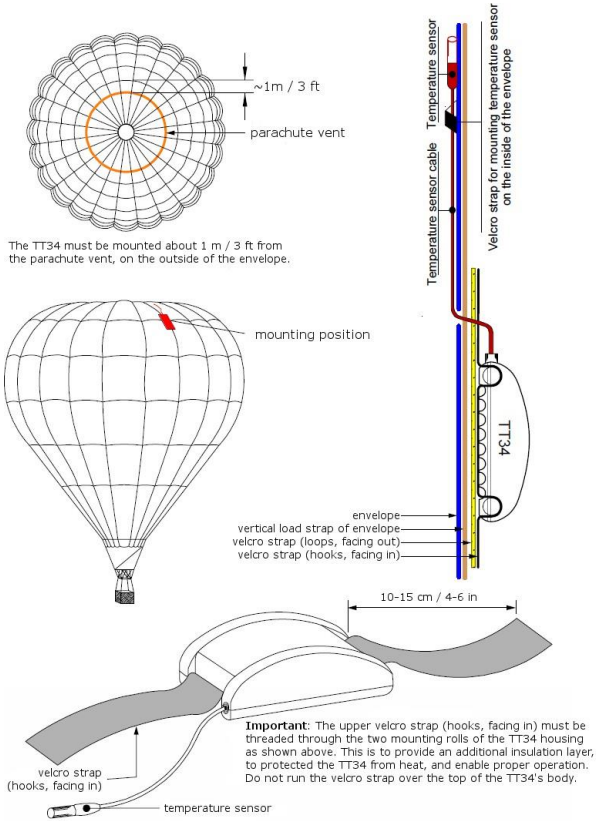
## Replacing batteries

The TT34's battery consumption is very low. Most pilots replace the TT34's battery once a year as part of the balloon envelope maintenance. Of course, depending on the actual airtime, more frequent replacements, as indicated by the low battery alert, can be required.

1. Remove the TT34 from the balloon envelope.
2. Open its casing with a regular screwdriver.
3. Disconnect the battery from its terminal.
4. Connect a new 9V Alkaline battery to the terminal.
5. Close the casing.
6. Re-install the TT34 in the balloon envelope.

# Mounting

## Mounting the TT34 temperature transmitter



# Pairing

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For any Flytec Balloon variometer to receive data from a TT34, the two need to be paired. This is done by entering the TT34's serial number, as marked on the label, into the appropriate field of the variometer. Refer to the variometer's manual to see how to pair a TT34 with that model.

## Prerequisites

This is required to receive temperature data on the Flytec Balloon 4:

1. A TT34 is installed in your balloon
2. TT34 reception is activated on your Flytec Balloon 4
3. The TT34 is paired with your Flytec Balloon 4
4. The temperature at the measurement tip of the TT34 is at least 20°C (36°F) higher than the temperature at the TT34's casing

# Operation

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## Automatic activation

The Flytec Balloon TT34 automatically starts transmitting data once the temperature at its measurement tip is at least 20°C (36°F) higher than the temperature at the TT34's casing.

For testing, we recommend placing the measurement tip in hot water.

## Automatic deactivation

The Flytec Balloon TT34 automatically stops transmitting data about five minutes after the temperature at its measurement drops to less than 20°C (36°F) above the temperature at the TT34's casing.

## Manual activation

The Flytec Balloon TT34's data transmission starts whenever a battery is connected to its terminal, and lasts until the condition for automatic deactivation is met (see above).

# Compliance

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## FCC compliance statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**CAUTION:** The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with the FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and all persons. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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