

Temperature Data Logger User Manual

Model 40981

Single-Use BLE Logger

1. Introduction

The DeltaTrak FlashLink® Model 40981 is a **single-use Bluetooth Low Energy (BLE) temperature data logger** designed for monitoring environmental conditions for the product during shipment. The logger captures temperature data using a digital temperature sensor and wirelessly transmits data to a BLE gateway device, or mobile application, enabling automated uploads to a cloud-based web portal for real-time visibility. The Shadow Log feature allows temperature data to be recorded even if the logger is never activated by the shipper, so that receivers will always have trip history for every inbound load.

2. Package Contents

- FlashLink® BLE Temperature Logger (Model 40981)
- Pre-installed 3.0V lithium battery (CR2032)



3. Device Overview

3.1 Physical Specifications

- **Dimensions:** 1.73 in*1.26 in*0.43 in (44mm*32mm*11mm)
- **Weight:** 0.32 oz (9 g)
- **Sensor Type:** Digital Temperature Sensor
- **Casing Material:** ABS Plastic
- **Ingress Protection:** IP65

3.2 LED Indicators

- **Green LED** – Indicates Active mode status and successful entry into Active mode.
 - **Red LED** – Indicates Stop mode / Shadow Log mode status and successful entry into Shadow Log mode.
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4. Product Features

- Single-use BLE temperature datalogger
 - Designed for monitoring environmental conditions for the product during shipment and storage workflows
 - Supports Stop mode, Shadow Log mode, and Active mode operations
 - Wireless Bluetooth Low Energy communication for BLE gateway or mobile app data upload
 - Temperature data is stored in the data logger
 - Supports configurable Shadow Log Interval, Shadow Log Duration, zero-point recording, and cloud-connected data workflow
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5. Technical Specifications

5.1 Temperature Measurement

- **Measurement Range:** -4°F to 140°F (-20°C to 60°C)
- **Accuracy:**
 - ±0.9°F (-4°F to 140°F)
 - ±0.5°C (-20°C to 60°C)
 - ±1.8°F (±1°C) outside this range
- **Resolution:** 0.1 °F/°C

5.2 Data Logging

- **Data Capacity:** 15,000, cycling memory
- **Logging Interval:** 5 minutes
- **Start Mode:** Manual button activation
- **Shadow mode:** Depends on configuration

5.3 Battery & Shelf Life

- **Battery Type:** 3.0 V lithium (CR2032)
- **Shelf Life:** 1 year

5.4 Communication

- **BLE Version:** 5.0

- **Advertising Interval:** 2 seconds

5.5 Certifications

- CE, FCC, RoHS, TELEC, DO-160, Calibration accuracy traceable to ISO 17025 and NIST
- Manufactured under ISO 9001:2015 quality management system

6. Operating Instructions

Activation: BLE Logger (Please activate first)

Press and hold START button until green active LED starts flashing, then release the button.

The green LED will flash every 2 seconds for 30 seconds after activation occurs.

If the unit was not activated correctly a red LED will flash.

Starting



Recording (Successful Activation)



Failed Activation



6.1 Activating the Logger

- **Press and hold the START button.**
- Continue holding until the **green LED begins flashing**, then release.
- After activation, the green LED will flash **every 2 seconds for 30 seconds**.

6.1.1 Successful Activation

- Green LED flashing indicates the device is in Active mode.

6.1.2 Failed Activation

- Red LED flashing once indicates the device is in Stop mode
- Press and hold START again and retry

6.1.3 Failed Activation (Shadow Log mode enabled)

- RED LED flashing twice indicates the device is in Shadow Log mode
 - Press and hold START again and retry; the **shadow log is not cleared** after successful activation.
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7. Recording and Data Workflow

1. Once activated, the logger immediately captures an initial temperature reading when entering Active mode, or Shadow Log mode. The logger then continues capturing temperature data at the logging interval for the recording mode.
 2. In Shadow Log mode, data is recorded according to the Shadow Log Interval and stored in memory.
 3. In Active mode, data logging continues according to the Active Log Interval.
 4. Temperature readings are stored locally and uploaded to the cloud portal when the device is within range of a BLE gateway (FlashLink® BLE Gateway).
 5. Alternatively, the BLE mobile app (FlashTrak® BLink) can be used to upload data to the cloud portal.
 6. Destination location data is available when the logger is within range of linked BLE gateway or BLE mobile app.
 7. Data is accessible on the DeltaTrak cloud platform or BLE mobile app for review, analysis, and documentation.
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8. Installation and Deployment

8.1 Using the Logger

- Place the logger in the environment, shipment, or package area to be monitored.

8.2 Mounting the Logger

- Mount the logger securely in the shipment or monitored area away from direct with ice, condensation pooling, or physical impact. Avoid placement of the logger that may block BLE communication with the BLE gateway or BLE mobile app.
 - Use adhesive or zip-tie options depending on packaging configuration.
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9. LED Behavior Summary

LED Color	Behavior	Meaning
Red	Flashes once after short press	Stop mode status query
Red	Flashes twice after short press	Shadow Log mode status query
Green	Flashes once after short press	Active mode status query
Red	Flashes 5 times, then once every 2 seconds for 30 seconds	Stop mode → Shadow Log mode
Green	Flashes 5 times, then once every 2 seconds for 30 seconds	Stop mode → Active mode or Shadow Log mode → Active mode

10. Storage and Handling

- Keep the device within its rated storage temperature until deployment.
 - Shelf life is **1 year**; avoid storing in high humidity conditions.
 - Do not attempt to disassemble the device or replace the battery.
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11. Safety and Compliance

- Complies with CE, FCC, and RoHS regulatory standards
- Device meets IP65 protection against dust and water spray

- Use the product only for shipment/environmental temperature monitoring and only within validated operating conditions.
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12. FCC Statement

FCC Caution:

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.

Any changes or modifications not expressly approved by the party responsible for compliance 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.

The device has been evaluated to meet general RF exposure requirement.

The device can be used in portable exposure condition without restriction.

RF Exposure Information (MPE)

This device has been tested and meets applicable limits for Radio Frequency (RF) exposure.

This equipment should be installed and operated with a minimum distance of **20 cm** between the radiator and your body.

Manufacturer Contact Information

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