OPERATING MANUAL

LM Transit

Mother Nature tells you everything

LM Transit
Temperature Data Logger
Model No.: 4000-23

g-tek ™

Record it...
Control it...
Perfect it.

CONTENTS

List of Tables

List of Figures

1 SAFETY AND THE ENVIRONMENT

1.1. About this document

This instruction manual is an essential component of the product.

Please read this documentation carefully and pay attention to the safety instructions and warning notices to prevent injuries and damage to the product.

Keep this document handy so that you can refer to it when necessary.

1.2. Ensure Safety

➢ Operate the product properly, for its intended purpose and within the parameter specified in the technical data. Using it beyond the specified limit can cause damage to the product and personnel also.
➢ Do not use the product if there are signs of damage to the housing.
➢ There are no user serviceable parts inside. For any defect, please consult the factory or the dealer from where you bought.

1.3. Protecting the Environment

➢ All the materials used in the data logger are RoHS and Reach compliant. There are no hazardous parts in the data logger.
➢ Dispose of faulty rechargeable batteries/spent batteries in accordance with the local regulations or valid legal specifications.

At the end of its useful life, send the product to a separate collection for electric and electronics devices (observe local regulations) or return the product to G-Tek for disposal. (Dispose or recycle the LM Transit Data logger in accordance with the WEEE 2012/19/EU guidelines or your local regulations. For suitable recycling, the device may also be returned to the manufacturer.)

2 SPECIFICATIONS

2.1. Use

LM Transit series one-time use portable temperature data loggers are capable of storing 16000 data records with 15 minutes of pre-fixed store interval. Ideal for recording temperature during shipping and transport, LM Transit series are easy to use, accurate and affordable solutions for your requirements. Waterproof (IP65) ensures that you can place them in the most demanding of environments. This logger comes pre-programmed from factory and user just needs to pull the tap to start recording data. The bright fluorescent like color makes it easy to identify at destination for easy retrieval.

The associating LMView software helps to download the stored data and review them by PC.

2.2 Features

- ➢ Easy to Use
- ➢ Indication for start of logging
- ➢ Cost Effective, single use data logger
- ➢ Memory available in set of 16000 data records
- ➢ Storage resolution 0.01
- ➢ Direct Connection to PC's USB port
- ➢ Prefixed 15 minutes Store interval

2.3 Technical Data

Table 1 Technical Specifications

Display and Operator Panels	
Display Type	None
Status Indicator	Red LED for Device working Blue LED for Batch Start / Stop
Panel Keys	None
Memory	
Data Storage	Yes
Memory	16000 Data Records
Memory Type	Flash, Non-volatile, Data Retention up to 100 years
Analog Input Details	
No. of Channels	1 (Temperature Input)
Temperature Measurement Accuracy	± 0.1% FSR
Sensor Details	
Temperature	10K Thermistor; NTC; Internal to the device
Temperature Range	-30 to + 60 °C (-22 to +140 °F)
Sensor Response Time	30 min for step change of 50 Deg C
Sensor Accuracy	± 0.5 °C (± 0.9 °F)

Sensor Resolution	0.01
Batch Details	
Start/Stop	Immediate on pulling Tab
Batch Stop	When Memory is full
Delayed Start	No
Logging Interval	Refer to order code
Download Batch	Intermediate after any time the batch started/After the Batch is completed
Environmental	
Temperature	(Operation)-30˚C to 60˚C
	(Limiting) -35˚C to 70˚C
	(Storage) -35˚C to 70˚C
Humidity	(Operation) 0 to 100% RH
Power Requirement	
Supply Voltage (Battery Operated)	3.0 V 225 mAH; CR2032 Panasonic Coin Cell Battery; User Replaceable
Battery Life	>1 Year, at 25˚C and 15min Store Interval
Battery Reverse Polarity	Protected
General	
User Calibration Feature	Factory Calibrated
Reusability	None. One time use, Disposable
Online Feature	Power saver mode when USB connected, Online Batch with Current Data Display using LMView software on PC
Confirmatory Standards	
EMI-EMC	EN 61326 Class A
Pollution Degree	II
Installation Category	I
Vibration	2g Peak (10Hz-150Hz)
Shock	IEC 61010-1
IP Rating	IP65
Communication	
Connectivity	USB 2.0 Compatible
Data Download Time	Approx 5 minutes 16000 data records
Overall Dimension	
Dimension (L x W x H) mm	120 (L) x 40 (W) x 31 (H)
Mounting	From the Clip provided on the cap

**Specifications are subject to change without notice.**

3 UNPACKING THE PRODUCT

3.1 Unpacking and Inspection of LM Transit Data Logger

➢ LM Transit data logger is dispatched in a recyclable, environment friendly package specially designed to give adequate protection during transit.

➢ If the outer box shows sign of damage, it should be opened immediately, and the device be examined. If the device is found damaged, it should not be operated, and the local representative contacted for instructions.

➢ Ensure that all accessories and documentation are removed from the box.

➢ If the LM Transit data logger is for immediate use, you can start installing it as per Installation instructions.

➢ **Please preserve the original packaging along with all internal packing for future transport requirements.**

Figure 1 LM Transit Data Logger

3.2 Mechanical Dimensions of LM Transit Data Logger
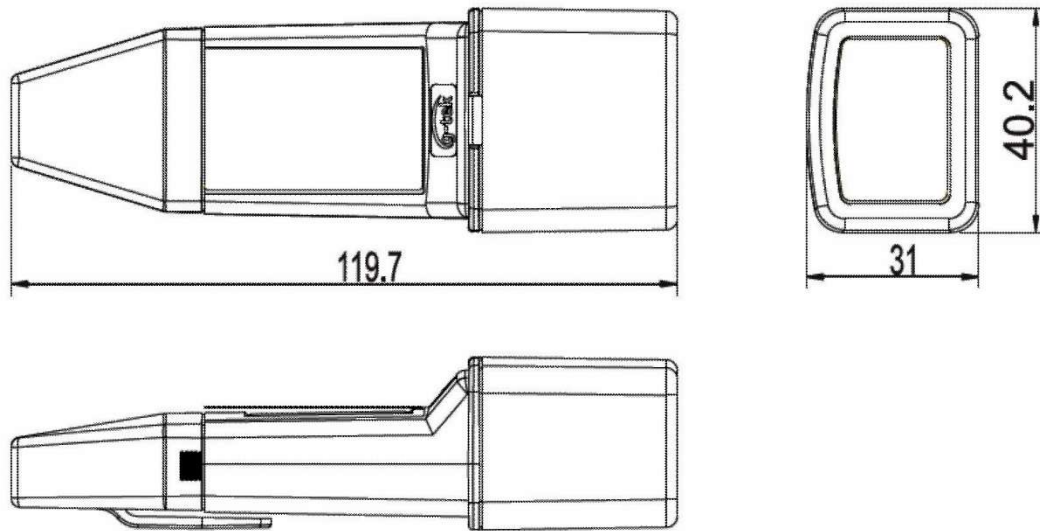
Figure 2 Overall Dimensions of LM Transit Data Logger

3.3 Connect LM Transit with PC

➢ Remove the USB cover from the top of the LM Transit.

Figure 3 LM Transit View after opening the USB cover

➢ Connect LM Transit Directly to the PC via USB or Connect Through The USB extension port.

Figure 4 Connection of LM Transit to PC via USB port

➢ After downloading the Data, disconnect the device from PC and place USB cover back on the LM Transit.

3.4 Battery Saving Mode

➢ The battery life of LM Transit is about 1 Year at 25˚C Temperature if the data is stored at the interval of 15 minutes and downloaded once every month.
➢ The data is updated in LM at every Store Interval. LM goes in battery saving mode between reading Intervals.
➢ While communicating with PC, it starts running on USB power supply. Until you disconnect the USB Cable it will run in normal mode with USB power supply and it again switches back to the battery saving mode after disconnecting.

4 MAINTAINING THE PRODUCT

4.1 Accessories

➢ Battery (3V, 225 mAh; CR2032 coin cell)

4.2 Cleaning the Data Logger

Ensure that no liquid enters inside the housing.

➢ If the housing of Data logger gets dirty, clean it with damp cloth.
➢ Do not use any aggressive cleaning agents or solvents.
➢ When USB port is not in use, cover the USB port properly.

4.3 Changing the Battery

The typical life of the battery is about 1 Year. If the data is sampled more frequently at Sub Zero Temperature then the battery life will be considerably reduced.

➢ To replace the battery, open the Sensor cover of LM Transit.

Figure 5 Open the Sensor cover to replace the Battery

➢ Slide out the used old battery from LM Transit.
➢ Slide in the new battery with correct polarity (+ marking should be visible on the top side).

Figure 6 Close tightly the Sensor cover after replacing the Battery

➢ Close sensor cover of LM tightly.

Note: The data is retained in the Nonvolatile memory and even after replacing the battery user can download the previously stored data.

4.4 Battery Disposal

➢ Dispose or recycle the battery in accordance with your local regulations.
➢ Do not expose the Data Logger to extreme temperatures as it may lead to the destruction of the battery and may cause injuries.

> **"Warning, Battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire."**

5 ORDER CODE

LM Type		Display Type		Sensor Type		Internal/External Sensor		-	Memory Size		Store Interval	
4	LM Transit	0	No Display	0	Temp.	0	Internal Sensor	-	2	16000 Data	3	15 min