



Convergence
Instruments

TM13K

Data Sheet



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1 Product Description

The *TM13K* is a high-performance temperature and motion data logger. It includes a high-resolution temperature sensor, a motion and vibration sensor, an accurate date/time clock and a non-volatile 13000-point recording memory. Its very small size allows it to be attached to or embedded within the monitored equipment.

2 Applications

- Logging hours of operation or duty rate of motors machinery and equipment.
- Monitoring of storage, transport conditions and movements of perishable items (fresh produce... etc.)
- Detection and recording of the operation and handling of certain items or equipments.
- Monitoring of indoor and outdoor temperatures
- Monitoring of freezer temperatures
- Monitoring of incubator temperatures
- Monitoring of habitat temperature for exotic animals
- Monitoring of in-casing computer and server temperatures

A temperature alarm function provides a visual indication when the temperature has been out of the specified bounds.

A motion alarm provides a visual indication when the total number of hours of operation of the monitored equipment, or a number of detected motion events is over a set limit.

The *TM13K* can monitor and record temperature and motion for years on a small coin battery. Its weather-proof sealed construction allows it to be used in harsh environments.

The *TM13K* connects to a PC using its USB adapter cable. The *TM13K_Manager* application is provided to setup its operating parameters and download, visualize and export the recorded data. The application can also be used to monitor temperature and motion in real time.

3 Specifications

- Dimensions: 40mm x 30 mm x 12mm (1.57 in x 1.18 in x 0.5 in)
- Weight: 16 g (0.6 oz)
- Construction: Weather-proof sealed construction
- Measurements:
 - Current temperature (degC or degF)
 - Max temperature
 - Min temperature
 - Average temperature
 - Motion (event count or hours of operation)
- Alarms :
 - Min Temperature
 - Max Temperature
 - Motion (number of events or hours of operation)
- Operating temperature range: -30 degC to 80 degC (-22 degF to 176 degF)
- Temperature resolution: 0.0625 degC (0.1125 degF)
- Temperature precision: 0.5 degC (0.9 degF)
- Temperature time constant: 10 min in air

- Temperature measurement interval: 1s
- Motion/vibration detector: Omni-directional
- Motion measurement interval: 1s
- Recording interval: Adjustable 1s to 12H, with 1s resolution
- Recording Depth: 13 000 individual measurement points
- Recording/erasure cycles: More than 10 000
- Recording memory type: Non-Volatile
- Battery life: Up to 3 Years while recording
- Battery type: Coin type lithium battery
 - BR2032 for full range (-30 degC to 80 degC)
 - CR2032 for reduced range (-20 degC to 70 degC)

4 Specifications of *TM13K_Manager* Software

- Windows XP and Windows Vista compatible
- Real-time display of temperature and motion measurements.
- Complete instrument configuration, including date/time, alarms, types of statistics recorded and recording rate.
- Collect and displays data while recording.
- Auto-scale, zoom and pan on temperature and motion graphs
- Export temperature and motion data to Excel format.