MONARCH INSTRUMENT

Instruction Manual

Track-It™ USB Barometric Pressure/Altitude/Temp Data Logger

CE NIST

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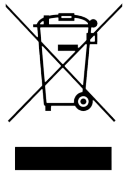
SAFEGUARDS AND PRECAUTIONS

1. Read and follow all instructions in this manual carefully, and retain this manual for future reference.
2. Do not use this instrument in any manner inconsistent with these operating instructions or under any conditions that exceed the environmental specifications stated.
3. This instrument is not user serviceable. For technical assistance, contact the sales organization from which you purchased the product.



In order to comply with EU Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE): This product may contain material which could be hazardous to human health and the environment. DO NOT DISPOSE of this product as unsorted municipal waste. This product needs to be RECYCLED in accordance with local regulations; contact your local authorities for more information. This product may be returnable to your distributor for recycling; contact the distributor for details.

Monarch Instrument's Limited Warranty applies.
See www.monarchinstrument.com for details.

Warranty Registration and Extended Warranty Coverage information is available online at www.monarchinstrument.com.

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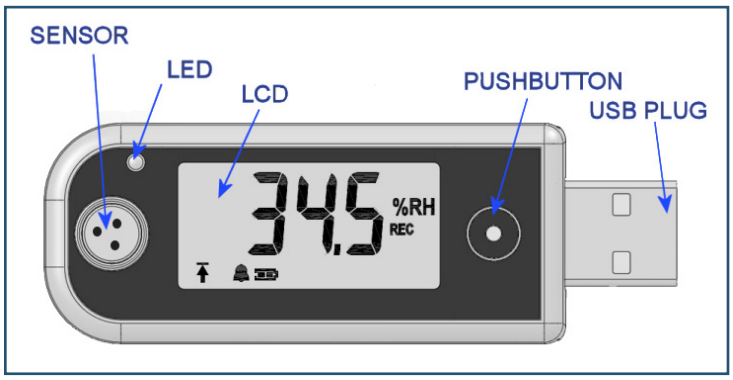
1.0 DESCRIPTION



The Track-It™ Barometric Logger is an extremely versatile compact battery-powered data logger that can record up to 64,000 samples of barometric pressure and/or temperature data. The logger has a built-in display to view data and alarm/recording indications in the field. Barometric (also known as atmospheric) pressure can be displayed in a variety of engineering units. It can also be used as an altimeter. The unit is easily configured using the downloadable Track-It™ DataLogger Software. Simply plug the unit directly into a USB port on the PC to allow for programming, upload of data, and to display data in real time.

2.0 TRACK-IT™ DATALOGGER SOFTWARE INSTALLATION

IMPORTANT: Before using your Track-It™ Data Logger, you should first download and install the USB Drivers and DataLogger Software. Please refer to the Quick Start Guide that was provided with your Data Logger, or you can download the Quick Start Guide.

The free Track-It™ DataLogger Software gives the user complete control in programming the Logger and allows for the upload, examination, and archiving of data recorded on the Logger.

Some of the features are:

- Delayed recordings, fixed duration recordings by time or number of samples, multiple record times, manual record by button press, record on alarms
- Sample rates from 2 seconds to 24 hours; instantaneous, average, maximum or minimum values
- Two Alarms (High or Low), latched or momentary, and record under these alarm conditions
- Input scaling and offset for analog modules, engineering unit selection for internal sensors

- Button functions, LED functions, and LCD functions
- Display of data graphically, digitally, or tabular formats with alarm indication
- Export user-selected data in CSV format for import into Excel; filter data to be exported
- Simple setup (single screen) or advanced mode

Track-It™ DataLogger Software is available for download here:
https://monarchinstrument.com/Software/Track-It_Software.zip

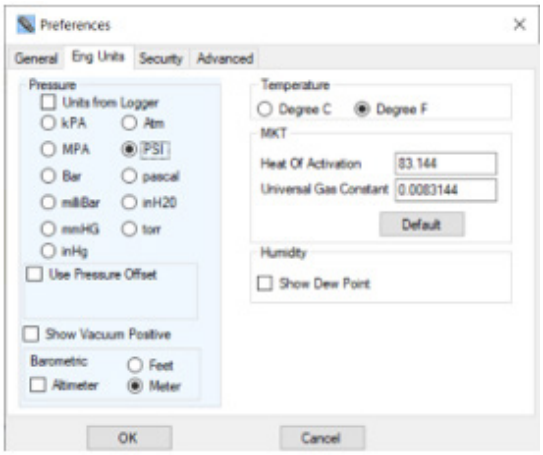
3.0 TRACK-IT™ DATALOGGER SOFTWARE – LOGGER SPECIFIC

The Track-It DataLogger Software runs on a PC and allows the user to connect the logger through a USB connection to program the logger or review the data. The operation of the Track-It DataLogger Software is described in its own manual which is accessed via the Help – Manual option.

There are a few unique options specifically for this Logger which are covered below.

3.1 Preferences

Select Preferences then the Eng Units tab. You will see the pop-up box shown right.



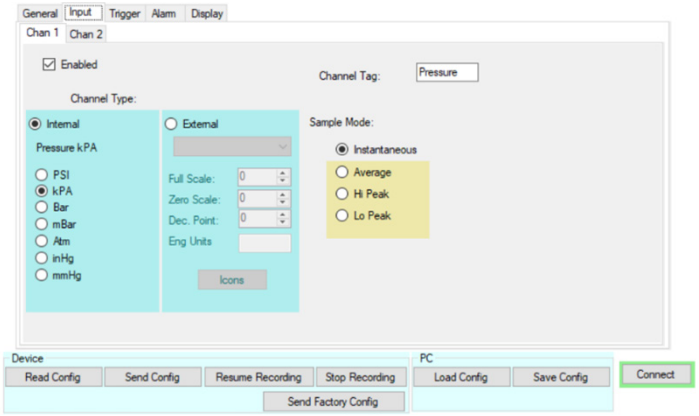
These Engineering Units apply to the data read from the Logger and displayed on the graph or in the data table. Select your desired Pressure Engineering Units.

If the Units from Logger box is checked, the selection of engineering units here is ignored and the engineering units used will be as set by the default in the Logger. If the Units from Logger box is unchecked, then the unit selected here will override that set in the Logger.

Barometric Loggers can be set to act like an Altimeter with the option of Feet or Meter for measurement.

3.2 Input Setup

Under the Device Setup tab, select the Input tab and the Chan 1 tab.



Select Internal Channel Type to use the device's built-in sensor and select an engineering unit which will be the default engineering units that will be displayed on the Logger LCD. The units selected here will be used when reading data from the Logger unless overridden in the Preferences menu.

Select External Channel Type to program the analog input. See Software Manual for more details.

Note that selecting anything other than Instantaneous for Sample Mode (the Logger only takes a reading at the Record Rate) will cause the Logger to take readings at the highest sample rate and will have an adverse effect on the battery life.

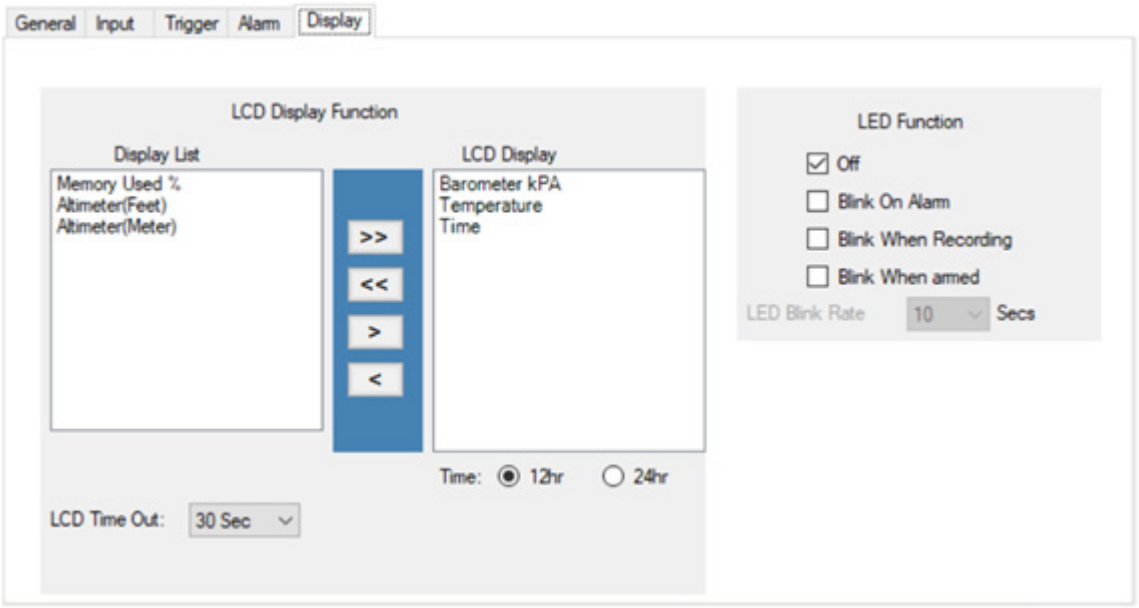
The Chan 2 tab is similar but for the Internal Temperature channel or optional External source. This secondary channel can be disabled; in which case the Logger will only record Channel 1 and not Channel 2.

3.3 Display Setup

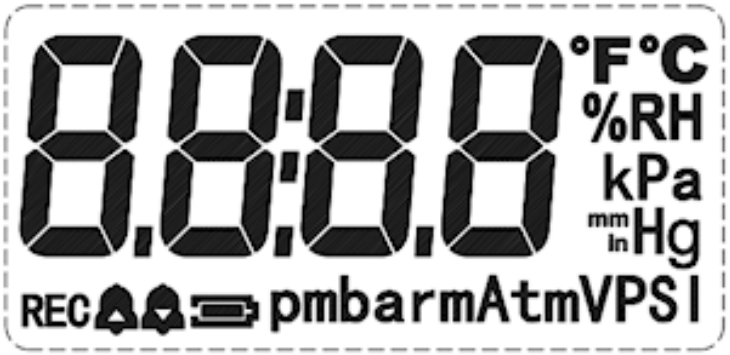
Under the Device Setup tab select the Display tab.

These settings allow the user to decide what is displayed on the Logger LCD (rotating to the next each time the button is pressed) and defines the function of the LED.

The Display List column shows the LCD Display Functions that are available to be displayed on the Logger and the LCD Display column shows the functions that will be displayed on the Logger. The user can move the options between the columns by selecting the option (clicking on it) and using the arrow keys.



4.0 LCD



The LCD (Liquid Crystal Display) shows status and real-time information and is user programmable via the Track-It™ DataLogger Software. Not all segments are available in all modes. The LCD is activated when the pushbutton is pressed and will shut off after a predetermined time as programmed. The following information may be shown on the display (user programmed) - each button press will show the next value.

4.1 Real-Time Values

Set real-time values for one or both channels in engineering units relevant to the logger type. Engineering units are PSI, kPA, Bar, mBar, Atm, inHg, mmHg, Feet, Meters, °C, and °F. What is visible is dependent on how the unit is programmed.

4.2 Time and Date

Set time and date in the form of hours and minutes with blinking colon (12 or 24-hour format) such as 12:20 AM followed by the year (20XX) then the month and date (i.e., 11:25 for November 25).

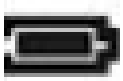
4.3 Memory Used

The display lists the amount of memory used such as 20.05% m.

4.4 Display Icons

Bell with up arrow (High Alarm) or down arrow (Low Alarm) — On steady if any alarms are enabled; blinks if any alarm occurred and is current. The unit does not have to be recording for the alarms to be monitored. Alarms can be reset by the user (see section 6.0 PUSHBUTTON FUNCTION).

REC **Recording** — On steady if recording is enabled but the unit is not currently recording (armed but not recording); blinking if currently recording data, triggered by any source (timers, alarms, button toggle).



Battery Condition — Shows Full (solid), Half and Empty; blinks when battery is too low to reliably operate.

5.0 LED

The LED (Light Emitting Diode) can be programmed to blink when the unit is waiting to record, when the unit is recording (green blink) or when there is an alarm condition (red blink). The blink period (time between blinks) is user programmable. Note that enabling the LED increases the drain on the battery. The LED is also used in conjunction with the pushbutton to indicate setup states.

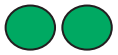
6.0 PUSHBUTTON FUNCTION

The pushbutton functions are programmable using Track-It™ DataLogger Software.

Short press (0 - 1 second) will activate the LCD view. Successive short presses will rotate the views as programmed.

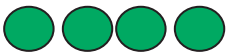
Press and hold - (1 - 2 seconds… LED flashes once ) – Releasing the button during this interval (if enabled by program) toggles record mode. If the unit is currently recording it will stop the recording. If the unit is currently NOT recording it will start recording.

Note: Other events may impact the record mode if they have been set to trigger the recording. This button will not stop any recording started by other triggers. Display will show **rCOn** for record on or **rOFF** for record OFF.

Continue to hold button until LED's second flash  then release button – Releasing the button during this interval (if enabled by program) resets any alarms (holds/latches, arrow indications) and will stop any alarm triggered recordings currently active. The display will indicate **rSt** for reset.

The Barometric Logger has a special Relative mode which allows the user to set the local pressure reading as an offset and effectively "zero" the display. This is especially useful when using the device as an altimeter.

Continue to hold button until LED's third flash  then release button – This toggles the logger Relative display mode indicated by **rEL** for relative ON. If the Relative mode is active, this will revert to the relative OFF (normal) mode, as indicated by **AbS** for Absolute.

Continue to hold button until LED's fourth flash  then release button – This will set the current pressure/altitude value to 0.00 indicated by **Zero**.

Continue to hold button until LED's fifth flash  then release button – This will shut off the display.

7.0 ANALOG INPUT

Most Track-It Data Loggers have the ability to measure up to 2 channels of analog inputs (4-20 mA, 0-5 V dc etc) using external analog modules that plug onto the USB connector. These may be purchased from your supplier and are programmed using the Track-It™ DataLogger Software.

NOTE: Analog recordings are made via the USB connector. If possible (button programmed), STOP RECORDING before plugging the recorder into the PC so as not to record the USB signals; otherwise, use the Track-It Software ***Stop Recording*** button under the Device Setup tab as soon as the device is plugged into the PC.

8.0 PROTECTION

The Data Logger comes with a protective splash-proof rubber cover to protect the USB connector and provide some degree of bump and water protection. The unit should have the cover on when traveling. The button can be operated when the cover is in place. The cover cannot be fitted when analog modules are attached.

NOTE: The unit should not be immersed in liquid. This product is not waterproof.

9.0 BATTERY

Track-It Barometric Data Loggers come with the option of a standard CR2032 3.0 V coin cell or extended long-life EF651625 3.6 V Lithium Thionyl Chloride non-rechargeable battery installed.

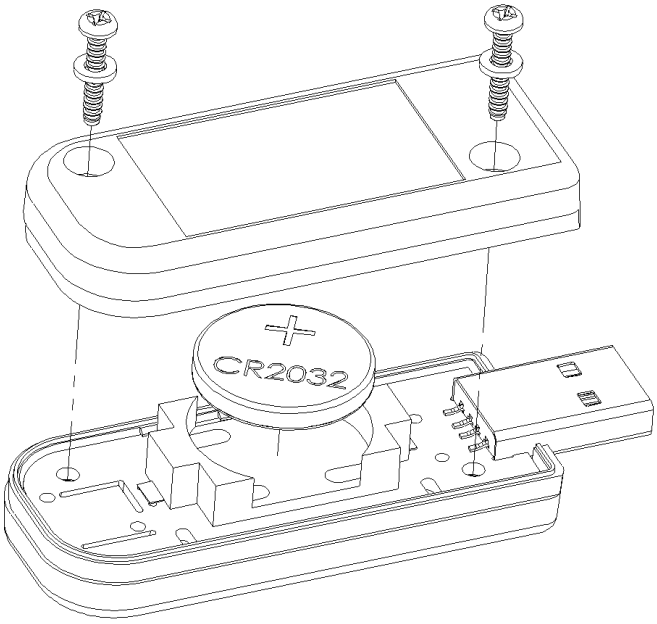
9.1 Replacing the Battery

To replace the battery - loosen the two screws on the back of the Logger and remove the bottom case half.

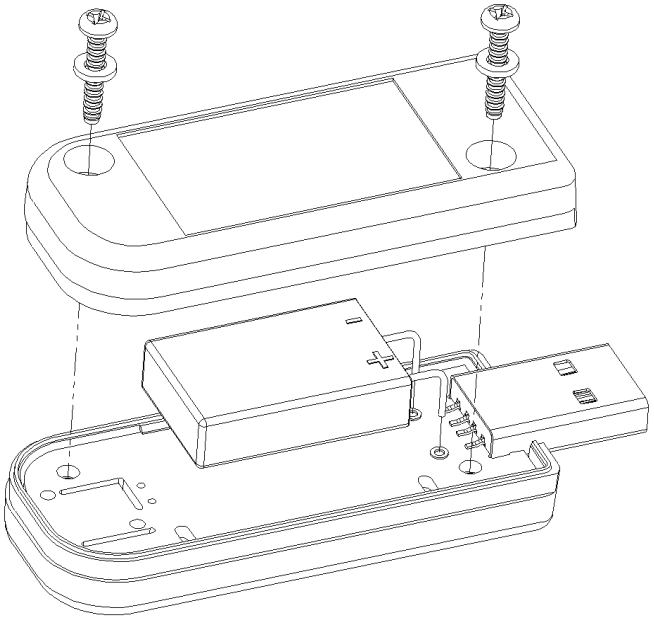
Caution: The screws have small plastic washers.

There are two battery options. Replace the relevant battery, then replace the cover and the screws with washers.

Coin Cell CR2032
3.0 V



Lithium Thionyl Chloride EF651625
3.6 V (LTC-7PN)



10.0 SPECIFICATIONS

Specifications*	USB Barometric Pressure/Altitude/Temperature Data Logger
General:	
Record	Sample rates: User-configured 1 every 2 seconds to 1 every 24 hours Number of samples: 32,000 or 64,000 (depends on setup)
Record Trigger	Two (2) independent triggers Multiple trigger modes: instantaneous, button control, on alarm, time and date (start and stop), day of week
Record Mode	Fill to end of memory or cyclic, number of samples and time duration
Display	4-digit LCD, user programmable: indication of data value, eng units, alarms, record mode, battery condition, time/date, memory used %
LED	User programmable: indication of alarms, recording, triggered
Button	User programmable: view display, record on/off, reset alarms
Alarms	Two (2) user-programmable (High and Low)
Communication	Direct USB connection
Software	**Track-It™ Datalogger Software** — program device, view data (historic or real time), export to Excel-compatible format; simple and advanced modes
Battery	**Standard:** Lithium CR2032 coin cell, 1-year life typical @ 1 minute sample rate **Extended (Long-life):** Li-SOCI2 EF651625, 3-year life typical @ 1 minute sample rate
Safety	Meets the safety measurements of IEC1010-1. This product is not waterproof.
Dimensions	3.66 in. [9.29 cm] L x 0.75 in. [1.91 cm] H x 1.16 in. [2.95 cm] W
Measurement:	
Pressure Range	30 to 120 kPa (4.4 to 17.4 PSI) Absolute Altitude: 30,000 ft. [9144 m]
Accuracy	0 to 50 °C, 70 to 115 kPa: ± 0.3 kPa typical, ± 0.4 kPa max -20 to +85 °C: ± 0.5 kPa

Resolution	0.01 kPa displayed, 0.005 kPa recorded
Specifications*	**USB Barometric Pressure/Altitude/Temperature Data Logger**
Measurement (continued):	
Temperature Range	-20 to +60 °C / -4 to 140 °F – Standard Battery -20 to +85 °C / -4 to 185 °F – Long-life Battery
Accuracy	± 1.0 °C
Resolution	0.1 °C displayed, 0.01 °C recorded
Clock Accuracy	±1 minute/year

*Specifications are subject to change without notice.

10.1 Compliance

CE Compliant

- Low Voltage Directive (LVD) 2014/35/EU
- Electromagnetic Compatibility Directive (EMC) 2014/30/EU
- Restriction of Hazardous Substances (RoHS) Directive 2011/65/EU

11.0 ACCESSORIES

For details, see Accessories webpage.

Replacement CR2032 Coin Cell Battery

PN: 5396-9904

Long-Life Replacement Battery

PN: 5396-9905

Replacement Protective Splash-Proof Rubber Cover

PN: 5396-9903

USB On-the-Go Cable

PN: 5396-9913

3 Ft. USB Extension Cable

PN: 5396-9901

Track-It Software on CD

PN: 5396-9920

The Professional's Choice

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Portable Tachometers

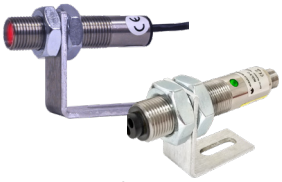
Track-It™ Data Loggers

Panel Tachometers

Fixed Mounted Strobes

Portable Strobes

Frequency Converters



Speed Sensors

DataChart™ Paperless Recorders

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