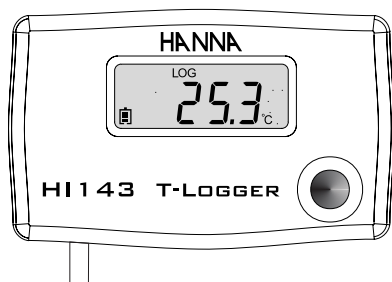


Instruction Manual

HI 143 T-LOGGER



WARRANTY

HI 143 loggers and communication interfaces are warranted for two years against defects in workmanship and materials when used for their intended purpose and maintained according to instructions. This warranty is limited to repair or replacement free of charge. Damages due to accident, misuse, tampering or lack of prescribed maintenance are not covered. If service is required, contact the dealer from whom you purchased the instrument. If under warranty, report the model number, date of purchase, serial number and the nature of the failure. If the repair is not covered by the warranty, you will be notified of the charges incurred. If the instrument is to be returned to Hanna Instruments, first obtain a Returned Goods Authorization Number from the Customer Service department and then send it with shipment costs prepaid. When shipping any instrument, make sure it is properly packaged for complete protection.

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Hanna Instruments reserves the right to modify the design, construction and appearance of its products without advance notice.

Dear Customer,

Thank you for choosing a HANNA product.

This manual will provide you with all necessary instructions for correct operation.

If you need additional technical information, do not hesitate to e-mail us at tech@hannainst.com.

This instrument is in compliance with the EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC for electrical equipments, and with the EN 12830 guidelines for temperature data loggers as follows:

- Suitability: S (Storage), T (Transport)
- Location: C (Food storage and distribution systems)
- Accuracy class: 1
- Measuring range: -30 to 70°C (-22 to 158°F)

PRELIMINARY EXAMINATION

Remove the instrument from the packing material and examine it carefully. If any damage has occurred during shipment, immediately notify your dealer.

According to the part number, you will receive:

- HI 143** T-logger complete with CR2032 lithium battery, wall cradle, lock and instructions
- HI 143-00** T-logger complete with **HI 143001** RS232 communication cradle, Windows® compatible application software, CR2032 lithium battery, wall cradle, lock and instructions
- HI 143-10** T-logger complete with **HI 143002** USB communication cradle, Windows® compatible application software, CR2032 lithium battery, wall cradle, lock and instructions
- HI 143001** RS232 communication cradle complete with Windows® compatible application software
- HI 143002** USB communication cradle complete with Windows® compatible application software

Note: Conserve all packing material until the instrument has been observed to function correctly because any defective item must be returned to the Dealer in its original packing.

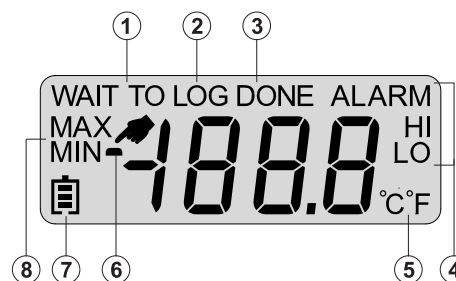
GENERAL DESCRIPTION

HI 143 is a temperature data logger with internal NTC sensor. The user interacts with the logger, programming the device or downloading logged data, through a serial or USB port on a PC. The Windows® compatible application software supports the communication between the logger and the PC through a transmitter (**HI 143001** with RS232 or **HI 143002** with USB connector).

The main features of the HI 143 thermologger include:

- Logging start through PC, button pressed or at set time
- Selectable sampling interval, from 1 minute to 24 hours
- Up to 4000 logged samples
- Selectable measure unit, °C or °F
- Min/max measured values are stored and displayed
- Programmable high and low alarms
- Non-volatile storage of logging parameters and data
- Battery level indicator on display
- Security password
- IP 65 protection

LCD FUNCTIONAL DESCRIPTION



1. "WAIT TO LOG": Waiting to start logging
2. "LOG": Logging in progress
3. "LOG DONE": Logging completed
4. High and Low alarm values
5. Measure unit
6. Start by pressing the logger button
7. Battery level indicator
8. Maximum and Minimum logged values

SPECIFICATIONS

Range	-30.0 to 70.0°C / -22.0 to 158.0°F
Resolution	0.1°C / 0.1°F
Accuracy	±0.4°C (-20 to 60°C); ±0.6°C (outside) ±0.7°F (-4 to 140°F); ±1.1°F (outside)
Typical EMC Dev.	±0.3°C / ±0.5°F
Calibration	Factory calibrated
Data Logging	Up to 4000 samples
Logging Interval	User selectable, from 1 minute to 24 hours
Battery Type	1 x CR2032 3V lithium battery
Battery Life	2 years
Protection	IP 65 (watertight)
Dimensions	60 x 37 x 17 mm (2.4 x 1.5 x 0.7")

Recommendations for users

Before using these products, make sure that they are entirely suitable for the environment in which they are used. Operation of these instruments in residential areas could cause unacceptable interferences to radio and TV equipments, requiring the operator to take all necessary steps to correct interferences. Any variation introduced by the user to the supplied equipment may degrade the instruments' EMC performance. To avoid damages or burns, do not perform any measurement in microwave ovens.



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OPERATIONAL GUIDE

INITIAL OPERATION

The logger is supplied complete with a CR2032 lithium battery. Open the battery compartment cover on the rear of the logger (see "Battery Replacement" section for details), insert the battery with the + sign facing up and tight back the compartment cover.

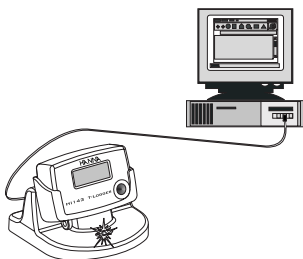
The display will show the "PC" message to indicate that the logger needs to be programmed through a PC.

PC

STARTUP

In order to communicate with the logger, the application software must be installed on your PC.

Connect the HI 143001 or HI 143002 communication cradle to your computer through an available RS232 or USB port, and place the HI 143 on the cradle.



Run the application software. The yellow LED on the cradle blinks to indicate that the communication is active. **Do not remove the logger while the LED is blinking.**

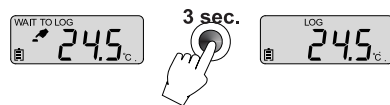
The following operating parameters can be set:

- Measure unit: °C or °F
- Starting type: PC, button or at time (hh:mm:ss)
- Logging type: wrap-around, until memory is full (4000 samples) or number of samples (max 4000)
- Logging interval: from 1 minute to 24 hours (10 sec. steps)
- High and Low alarm thresholds
- Protection password

Click on the "PROGRAM" key to program the logger with the selected options.

If the starting type was set to "PC", then the "START" key will become active. Click to start.

If the starting type was set to "button", then the logger display will indicate that the logger button has to be pressed to start logging. Keep the button pressed for about 3 seconds.

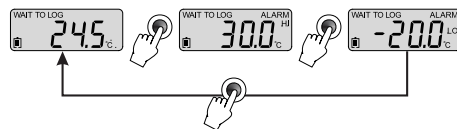


If the starting type was set to "at time", then the logger will automatically start logging at the programmed time.

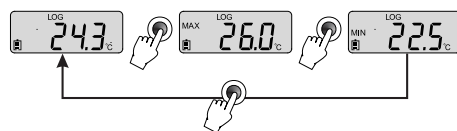
BUTTON FUNCTIONS

Pressing the logger button will give different outputs depending on the logger status.

- If the logger is in "WAIT TO LOG" condition, then pressing the button will cycle through current measurement, high and low alarm thresholds.



- If the logger is in "LOG" or "LOG DONE" condition, then pressing the button will cycle through current measurement, maximum and minimum recorded values.

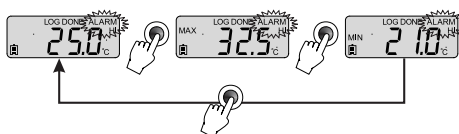


If you keep the button pressed, after 2 seconds the display will show alternatively (toggle every 2 seconds) the high and low alarm thresholds.



Notes:

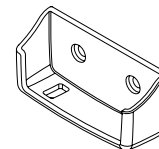
- If an alarm threshold has not been set, then the logger will display the "dis" (disabled) message.
- If an alarm condition has been occurred during logging, then in the "LOG" or "LOG DONE" status the corresponding alarm indication (ALARM HI or ALARM LO) will blink.



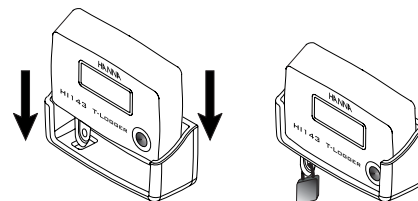
WALL INSTALLATION

The logger is supplied complete with wall cradle and lock (mounting materials as screws and dowels are not included).

Position the wall cradle at the desired location and fix it to the wall with proper screws.



Insert the logger into the cradle and secure it with the supplied lock.



DATA TRANSFER TO PC

To download logged data, remove the logger from its installation and place it on HI 143001 or HI 143002 communication cradle connected to an RS232 or USB port of your PC.

The memory content can then be downloaded from the instrument to the PC using the Windows® compatible application software offered by Hanna Instruments.

This software allows you to use the powerful capabilities of most spread sheet programs (e.g. Excel®, Lotus 1-2-3®) and to make any elaboration available (e.g. graphics, statistic analysis, etc.).

The user-friendly on-line help and clear messages will support you throughout any situation.

During the data transfer the yellow LED on the cradle blinks to indicate that the communication is active. **Do not remove the logger while the LED is blinking.**

BATTERY REPLACEMENT

Each time the battery is installed, the logger enters in reset status and displays the "PC" message.

Then it starts calculate the remaining battery life and displays the level through a 4-tag indicator.



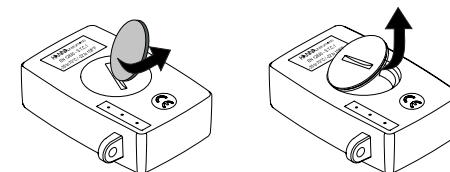
When the last tag (empty battery) starts blinking, the battery level is below 5%. It is recommended to change the battery with a new one.



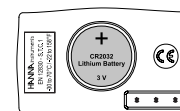
Battery replacement must only take place in a safe area and using the appropriate battery type (CR2032 3V lithium battery).

Note: It is recommended to use a new battery for replacement, otherwise the battery level indication could be not reliable.

When the battery needs to be replaced, open the battery compartment cover on the rear of the logger using a small coin. Turn counter-clockwise to open.



Insert the new battery with the + sign facing up, tight back the compartment cover and program the instrument.



Note: Dispose of the lithium (Li) battery according to local regulations.

TECHNICAL SERVICE

This instrument has been accurately pre-calibrated at the factory; anyway, it is generally recommended to have all thermometers recalibrated at least once a year.

For an accurate recalibration, contact the nearest Hanna Customer Service Center.