

# TruTrack Data Logger

## Humidity / Dual Temperature Logger Model THT-LCD

Three Channel High Resolution  
(16 bit) Humidity & Temperature  
Data Logger with LCD Display.

The THT-LCD is a handheld humidity data logger with an external humidity and temperature probe and a liquid crystal display.

Both Relative Humidity and Dew Point can be displayed and logged.

There are two external Humidity/Temperature probes available for the THT-LCD (NOT included with THT-LCD - ordered separately):

The **HT11-Probe** uses a Sensirion SHT11 digital humidity sensor giving  $\pm 3.0\%$  RH accuracy from 20% RH to 80% RH.

The **HT15-Probe** uses a Sensirion SHT15 digital humidity sensor giving  $\pm 2.0\%$  RH accuracy from 10% RH to 90% RH.

The probe is connected to a socket on the end plate at the top of the logger.

The probe cable is 1.5 metres in length.

This logger is designed for indoor use (IP 40). For outdoor applications, we recommend mounting the THT-LCD in a TruTrack Seahorse Logger Enclosure.

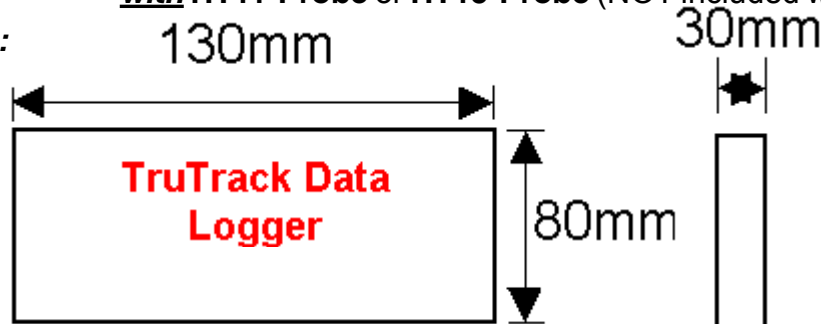
### Features:

- Temperature can be set to any combination of Point, Average, Maximum & Minimum readings.
- The data from any logger that records Temperature and Relative Humidity can be processed, by the OmniLog software, to add Absolute Humidity and/or Dew Point readings to the data.
- The battery voltage of the logger can be logged if required.
- The logger can be run in either "Stop when memory is Full", "Loop Around" mode or set to stop at a future time.
- The logger can be started "Now" or started at a given time in the future.



**Ordering Information:** THT-LCD LCD Humidity / Temperature data logger  
with HT11-Probe or HT15-Probe (NOT included with THT-LCD)

### THT-LCD Dimensions:



### Putting into service:

1. From the SWDL-DLC OmniLog software and Download cable kit, **first install the OmniLog software**, then plug the Download cable into a spare USB or serial port on your PC (depending on which type you have). The OmniLog has an excellent "Help". This will need to be read to enable successful operation of the OmniLog Data Management Program and gain familiarisation of the many advanced features available.
2. Connect the TruTrack Logger. Under healthy circumstances, a "Logger Control" screen will load. If the "Logger Control" screen does not load, click on the button labelled "Connect to a Logger for the first time". The OmniLog will run a test on the serial ports and advise if the port the logger is connected to is not available, in which case, plug the logger into an available port. (Refer to "Help" for further assistance.)
3. On the "Logger Control" screen, click on "Channel and Probe Setup" button, and check the Battery Condition, plus other configurations if connecting to the pH-HR or mV-HR loggers.

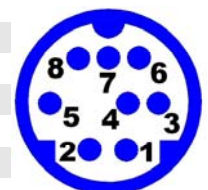
Now click on the "Start Logger" tab for the final configurations, before putting the logger into service.

**Product Liability.** This information describes our products. It does not constitute guaranteed properties and is not intended to affirm the suitability of a product for a particular application. Due to ongoing research and development, designs, specifications, and documentation are subject to change without notification. Regrettably, omissions and exceptions cannot be completely ruled out. No liability will be accepted for errors, omissions or amendments to this specification. Technical data are always specified by their average values and are based on Standard Calibration Units, unless otherwise specified. Each product is subject to the 'Conditions of Sale'.

**Warning: These products are not designed for use in, and should not be used for patient connected applications. In any critical installation an independent fail-safe back-up system must always be implemented.**

## Specifications:

Humidity Sensor: Probe Plug	The probe is connected to a socket on the end plate at the top of the logger		
HT11-Probe	The probe cable is 1.5 metres		
	Sensirion SHT11	Digital humidity sensor	
	Long-term stability		
	Fully calibrated by Sensirion		
	Response time 4 seconds		
	Range 0%~100%		
	Accuracy $\pm 3.0\%$ RH from 20% to 80%		
	Accuracy $\pm 5\%$ RH from 0% to 20% and 80% to 100%		
	Resolution 0.1%RH		
	Digital temperature sensor accuracy $\pm 0.4^{\circ}\text{C}$ @ $25^{\circ}\text{C}$		
HT15-Probe	Sensirion SHT15 Digital humidity sensor		
	Long-term stability		
	Fully calibrated by Sensirion		
	Response time 4 seconds		
	Range 0%~100%		
	Accuracy $\pm 2\%$ RH from 10% to 90%		
	Accuracy $\pm 3.5\%$ RH from 0% to 10% and 90% to 100%		
	Resolution 0.1%RH		
	Digital temperature sensor accuracy $\pm 0.3^{\circ}\text{C}$ @ $25^{\circ}\text{C}$		
Filter	The sensor is covered in a Sensirion SF1 Filter cap. The filter cap provides protection against water, dust and other contaminants for the humidity and temperature sensor. The filter cap consists of a single piece of polypropylene including a filter membrane. The filter provides filtration efficiency of 99.99% of all 0.1 $\mu\text{m}$ particles and has an optimized response time of typically 30s (1/e (63%) slowly moving air).		
Dew Point: Sensor Type	The Dew Point is calculated from the current Relative Humidity and Temperature		
Accuracy	$\pm 2^{\circ}\text{C}$ (this is determined by the $\pm 3.5\%$ RH accuracy of the humidity sensor)		
Resolution	0.1 $^{\circ}\text{C}$		
Internal Temperature: Sensor Type	Thermister		
Linear accuracy over range	$\pm 0.3^{\circ}\text{C}$ ( $0^{\circ}\text{C}$ to $70^{\circ}\text{C}$ )		
Repeatability	$\pm 0.1^{\circ}\text{C}$		
Long term stability	$\pm 0.1^{\circ}\text{C}$		
Logger: Working Temperature	$-20^{\circ}\text{C}$ to $+70^{\circ}\text{C}$	Storage Temperature	$-30^{\circ}\text{C}$ to $+70^{\circ}\text{C}$
Sampling Rate	1 second minimum, 10 hours maximum; in 1 second intervals		
Storage capacity	522,240 samples logging Relative Humidity only		
	362 days with 1 min logging interval (Relative Humidity only)		
	4.9 years with 5 min logging interval (Relative Humidity only)		
	174,080 samples logging Relative Humidity Dew Point and Temperature		
Alarms	Two independent Alarms		
	Triggered on any combination of six user configurable Alarm Conditions		
	Both alarms can be configured to send SMS messages if connected to a cell modem		
	Two Open Collector Alarm Outputs		
	Alarms can be visually checked on the LCD Display or by using the OmniLog Software		
Start modes	Start immediately; Start on date/time; Start on Condition (eg Humidity $<30\%$ RH); Start on trigger (push button on logger)		
Stop modes	Stop when memory is full, Stop on date/time, Loop around (continues logging)		
Logging modes	Each channel can be set to log any combination of: Point readings, Average reading, Maximum reading, Minimum reading		
Battery	One to Five year life depending on usage		
	User Replaceable; Two 3.6 volts Lithium AA cells		
	The data is retained in the case of battery failure		
	Battery Status Monitor on LCD display and in OmniLog software		
Download time	9 minutes 30 seconds for Full Logger		
Case material	ABS Plastic	IP Rating	40
Weight	185g		
Size	130mm x 80mm x 30mm		
Communication Connector	The HT-LCD has a 8 pin Mini-DIN female socket		
Pinout	Pin 1 Common	Pin 2 RS232 RX (out of logger)	
	Pin 3 RS232 TX (into logger)	Pin 4 RS232 CTS (out of logger)	
	Pin 5 RS232 RTS (into logger)	Pin 6 Alarm 1 Open Collector Output	
	Pin 6 Alarm 2 Open Collector Output	Pin 8 Power 9 to 16V dc	



**A DLC8USB [USB] or DLC8 [RS232] download cable is required to connect the THT-LCD to a computer.**

**Note:** The THT-LCD is only compatible with OmniLog version 1.52 or greater.

## **Liquid Crystal Display Operation:**

The THT-LCD displays logger status and alarm status continuously and can be set to show the relative humidity, dew point, probe temperature, internal temperature, the battery voltage and the number of logged samples.

Logger status is shown as:

- **Running**
- **Stopped**
- **Waiting** (Waiting for “Start on Condition”)
- **Waiting Trigger** (Waiting for “Start on Trigger”)

If the logger is waiting for “Start on Trigger” it can be started in the field from the Menu provided on the display.

If an Alarm has been triggered the display will show

- **Alarm 1**
- **Alarm 2**

If both Alarms are triggered “**Alarm**” will be displayed continuously and “**1**” and “**2**” will flash consecutively.

**Low Batt** will be displayed if the internal batteries require replacement.

## **THT-LCD Menu Options:**

Pressing the Enter button on the front panel of the THT-LCD activates the Menu Display. The Down Arrow can then be used to scroll down through the various Menu Options. When the required menu option is displayed, press Enter to select this option.

Menu Options on the THT-LCD are:

- Channel 1 (Display Relative Humidity)
- Channel 2 (Display Dew Point)
- Channel 3 (Display Probe Temperature)
- Channel 4 (Display Internal Temperature)
- Channel 5 (Display Battery Voltage)
- Samples (Display number of samples logged)
- Trigger (IF logger is waiting for Start on Trigger)
- Alarm 1 (Reset/Trigger) Trigger is used to
- Alarm 2 (Reset/Trigger) test the Alarms
- °C / °F toggle

The display will update at 1 second intervals for 1 minute after any button is pushed. It will then slow down to 10 second display updates (this is a power saving feature).

