

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.

The **HT11-Probe** uses a Sensirion SHT11 digital humidity sensor giving $\pm 3.0\%$ RH accuracy from 20%RH to 80%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 Omni7 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.

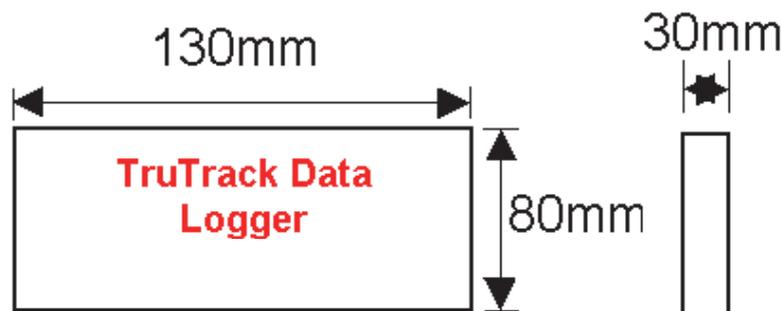


Ordering Information.

THT-LCD LCD Humidity / Temperature data logger.
Includes the **HT11-Probe** ~ $\pm 3.0\%$ RH accuracy from 20%RH to 80%RH.

DLC8USB [USB] or **DLC8** [RS232] download cable (2m) to connect THT-LCD with computer.

THT-LCD Dimensions.

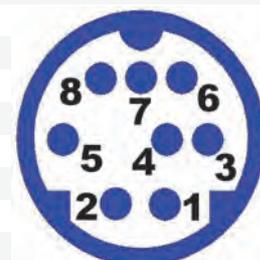


Putting into service with Omni7 Data Management software.

1. From the SWDL-DLC Omni7 software and Download cable kit, **first install the Omni7 software**, then plug the Download cable into a spare USB [standard size] or RS232 serial port on your computer (depending on which type you have). The Omni7 has an excellent "Help". This will need to be read to enable successful operation of the Omni7 Data Management Program and gain familiarisation of the many advanced features available.
2. Connect the data logger to the download cable. Select the correct connection type on the Omni7 screen. Omni7 requires manual connection and disconnection to the data logger using the Green 'Connect' and Red 'Disconnect' buttons. It will not connect to a data logger automatically. (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.
4. Now click on the "Start Logger" tab for the final configurations, before putting the logger into service.

Specifications.

Humidity Sensor:	Probe Plug	The probe is connected to a socket on the end plate at the top of the logger The probe cable is 1.5 metres long
HT11-Probe	Sensirion SHT11	Digital humidity sensor
	Long-term stability	Fully calibrated by Sensirion
	Response time	4 seconds
	Accuracy	$\pm 3.0\%$ RH from 20% to 80%
	Resolution	0.1%RH
		Digital temperature sensor accuracy $\pm 0.4^{\circ}\text{C}$ @ 25°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 μm particles and has an optimised 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 $\pm 3.0\%$ 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°C to 70°C)
	Repeatability	$\pm 0.1^{\circ}\text{C}$
	Long term stability	$\pm 0.1^{\circ}\text{C}$
Logger:	Working Temperature	-20°C to $+70^{\circ}\text{C}$
	Storage Temperature	-30°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 Omni7 software
Start modes		Start immediately; Start on date/time; Start on Condition (e.g. 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
	Warning:	When using the Average, Maximum or Minimum reading(s), the logger reads the attached sensor(s) every second. This will reduce battery life.
Battery		One to Five year life depending on usage as above Using the logger in temperatures below -5°C (23°F) will reduce battery life 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 Omni7 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 7 Alarm 2 Open Collector Output	Pin 8 Power 9 to 16Vdc



A **DLC8USB** [USB] or **DLC8** [RS232] **download cable** (2m) is required to connect the THT-LCD to a computer.

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.

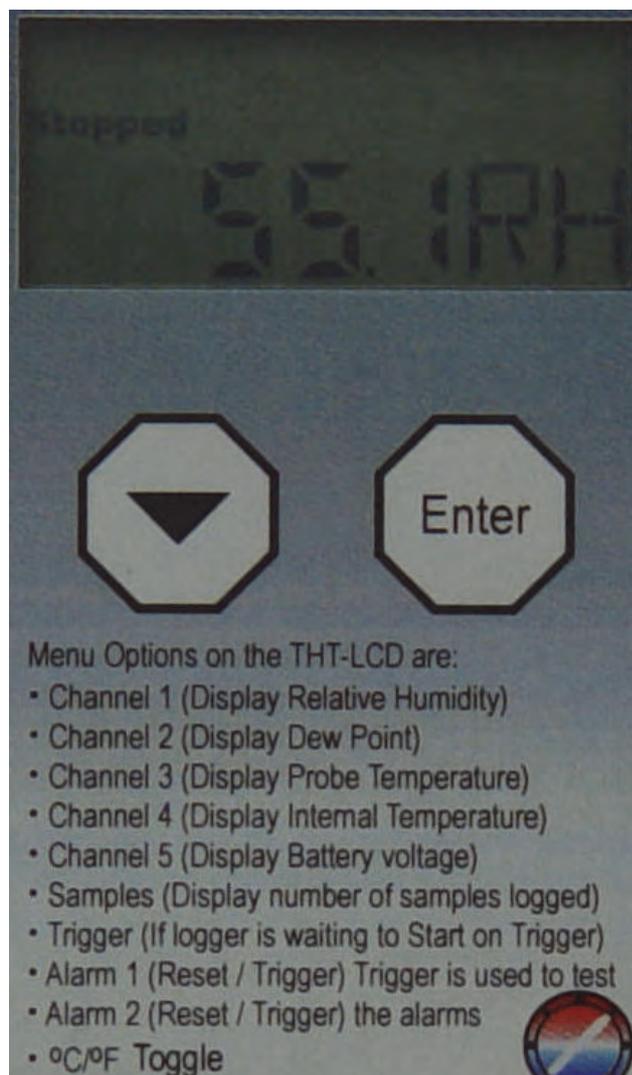
THT-LCD Menu Options.

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).



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.

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