

TruTrack Data Logger

Humidity / Temperature Logger Model HT-LCD

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

The **HT-LCD** is a handheld humidity data logger with an integral humidity sensor and liquid crystal display. Both Relative Humidity and Dew Point can be displayed and logged. The HT-LCD uses a Sensirion SHT11 digital humidity sensor giving $\pm 3.0\%$ RH accuracy from 20%RH to 80%RH.

This logger is designed for indoor use (IP 40). For outdoor applications, we recommend using a THT-LCD with a TruTrack Seahorse Logger Enclosure. The THT-LCD logger is identical to the HT-LCD logger, except that it has an external Humidity/Temperature probe.

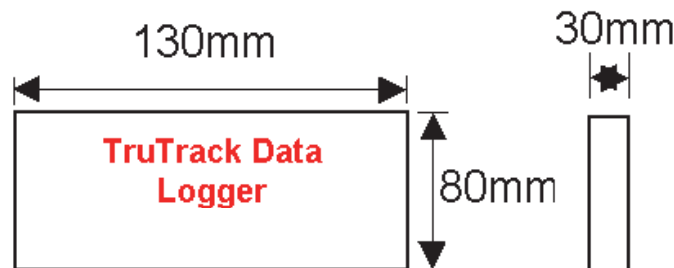
Features.

- Massive storage capacity of over 500,000 samples!
- Easy to use LCD menu options.
- LCD display shows logger status and alarm status continuously.
- The data from any logger that records Temperature and Relative Humidity can be processed, by the Omni7/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", at a given time in the future, on a condition (e.g. temperature $>20^{\circ}\text{C}$), or on Trigger (push button on logger).
- The data from any logger that records Temperature can now be processed, by the Omni7/OmniLog software, to give daily, weekly and monthly accumulated Grow Degree Day reports for a wide range of horticultural crops.



Ordering Information. **HT-LCD** LCD Humidity / Temperature data logger

HT-LCD Dimensions.



Putting into service (Using Omni7 - the original OmniLog differs slightly).

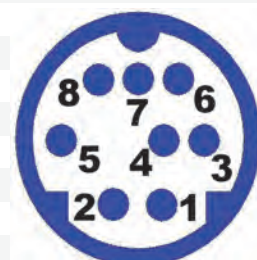
1. From the SWDL-DLC Omni7 software and Download cable kit, **first install the Omni7 software**, then plug the Download cable into a spare USB or serial port on your PC (depending on which type you have). The Omni7 has an excellent "Help". This will need to be read to enable successful operation of 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.

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 at 25C, 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:	Sensor Position	The sensor is mounted on an end plate at the top of the logger		
	Sensor Type	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%		
		$\pm 5\%RH$ from 0% to 20% and 80% to 100%		
Resolution		0.1%RH		
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	$\pm 2^{\circ}C$ (this is determined by the $\pm 3.5\%RH$ accuracy of the humidity sensor)		
	Resolution	0.1 $^{\circ}C$		
Temperature:	Sensor Type	Thermister		
	Linear accuracy over range	$\pm 0.3^{\circ}C$ (0 $^{\circ}C$ to 70 $^{\circ}C$)		
	Repeatability	$\pm 0.1^{\circ}C$		
	Long term stability	$\pm 0.1^{\circ}C$		
Logger:	Working Temperature	-20 $^{\circ}C$ to +70 $^{\circ}C$	Storage Temperature	-30 $^{\circ}C$ to +70 $^{\circ}C$
	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		
		Two Open Collector Alarm Outputs		
		Alarms can be visually checked on the LCD Display or by using the Omni7/OmniLog 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 years life depending on usage as above		
		Using the logger in temperatures below -5 $^{\circ}C$ (23 $^{\circ}F$) 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/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 7 Alarm 2 Open Collector Output		
		Pin 8 Power 5 to 16V dc		



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

Liquid Crystal Display Operation.

The HT-LCD displays logger status and alarm status continuously and can be set to show the relative humidity, dew point, 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.

HT-LCD Menu Options.

Pressing the **Enter** button on the front panel of the HT-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 HT-LCD are:

- Channel 1 (Display Relative Humidity)
- Channel 2 (Display Dew Point)
- Channel 3 (Display 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 test
- Alarm 2 (Reset/Trigger) 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).



