

# USB-502-LCD RH/Temperature Logger with LCD Display

The USB-502-LCD data logger measures and stores up to 16,379 relative humidity and 16,379 temperature readings over 0 to 100%RH and -35 to +80°C (-31 to +176°F) measurement ranges. The user can easily set up the logger and view downloaded data by plugging the module into a PC's USB port and using the supplied software. Relative humidity, temperature and dew point (the temperature at which water vapor present in the air begins to condense) data can then be graphed, printed, and exported to other applications. The high contrast LCD can show a variety of temperature and humidity information. At the touch of a button, the user can cycle between the current temperature and humidity, along with the maximum and minimum stored values for temperature and humidity. The data logger is supplied complete with a long-life lithium battery, which can typically allow logging for up to one year.



## Control Software

The easy-to-install and use USB-500 Series Data Logger Application software runs in Windows 2000/XP/Vista (Home and Professional Editions). It allows the user to configure the USB-502-LCD logger, and download and display the data graphically in a powerful strip chart. The software also provides an easy export to Excel™.

The latest version of the application software may be downloaded from [www.mccdaq.com](http://www.mccdaq.com)

## Setup Options

- Logger name
- °C, °F
- Logging rate (10s, 30s, 1m, 5m, 15m, 30m, 1hr, 2hr, 6hr, 12hr)
- High and low alarms
- Immediate, delayed and push-to-start logging
- Display off, on for 30 seconds after button press, or permanently on
- Data rollover (allows unlimited logging periods by overwriting the oldest data when the memory is full)

## Features

- 0 to 100 % relative humidity range
- -35 to +80 °C (-31 to +176 °F) range
- Dew point calculated with application software
- USB interface for set-up and data download
- User-programmable alarm thresholds for RH & T
- Bright green/red LED indication
- Replaceable long-life lithium battery
- High contrast LCD, with 2½ digit RH & T display

## Ordering Information

Part Number	Description	Price
USB-502-LCD	RH/Temperature Data Logger (Logger unit, software CD, battery)	\$97

## USB-502 Specifications

Specification		Min.	Typ.	Max.	Unit
Relative Humidity	Measurement range	0		100	%RH
	Repeatability (short term)		±0.1		%RH
	Accuracy (overall error)		±3.0**	±6.0	%RH
	Internal resolution		0.5		%RH
	Long term stability		0.5		%RH/yr
Temperature	Measurement range	-35 (-31)		+80 (176)	°C (°F)
	Repeatability		±0.1 (±0.2)		°C (°F)
	Accuracy (overall error)		±0.5 (±1)	±2 (±4)	°C (°F)
	Internal resolution		0.5 (1)		°C (°F)
Dew Point	Accuracy (overall error)(25°C, 40-100 %RH)		±1.1 (±2)***		°C (°F)
Operating temperature range		-35 (-31)		+80 (176)	°C (°F)
1/2AA 3.6V lithium battery life			1*		Year

\* Depending on sample rate, ambient temperature and use of LCD display.

\*\* This specifies the overall error in the logged readings, for relative humidity measurements between 20 and 80%RH.

\*\*\* This specifies the overall error in the calculated dew point, for relative humidity measurements between 40 and 100%RH at 25°C.

## Dimensions All dimensions in mm (inches)



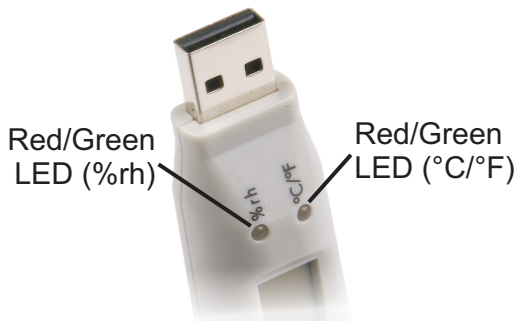
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# USB-502-LCD RH/Temperature Logger with LCD Display

## LED Flashing Modes

The USB-502-LCD features 2 bi-color LEDs



One LED is for temperature measurement, the other is for RH. The status indication alternates every 10 seconds. So, first you will see the status of the temperature logging; 10 seconds later you will see the status of the RH logging, and so on.

### Key

- Single flash    The channel is logging, no alarm
  - ◉ Double flash    Delayed start
  - ◉◉ Triple flash    Logger full, no alarm
  - Single flash    The channel is logging, low alarm
  - ◉ Double flash    The channel is logging, high alarm
  - ◉◉ Triple flash    Logger full, alarm
- ↔ Alternating indicator

%RH    °C/°F



#### No LEDs flash

- No logging started. Start logging.
  - or
  - Battery fitted but completely discharged. Replace battery.
  - or
  - No battery fitted. Fit battery, start logging.
- Plug the data logger into the PC and run the control software to find out which condition applies.



#### Alternating green double flash every 10 seconds

- Logger configured for delayed start. No action needed, logger will start at a later date and time.



#### Alternating green single flash every 10 seconds

- Logger operating.
  - Last stored Humidity and Temperature readings within set alarm levels.
- (if hold is enabled, then a flashing Green LED indicates that no alarm condition has been logged during the current logging session)



#### Alternating between green and red single flash every 10 seconds

- The green LED indicates the parameter that is within set alarm levels.
  - The red LED indicates the parameter for which the Low Alarm level has been exceeded.
- (if hold is enabled, then the alarm condition may have been triggered at any point during the current logging session)



#### Alternating between green single and red double flash every 10 seconds

- The green LED indicates the parameter that is within set alarm levels.
  - The red LED indicates the parameter for which the High Alarm level has been exceeded.
- (if hold is enabled, then the alarm condition may have been triggered at any point during the current logging session)



#### Alternating between green or red triple flash every 10 seconds

- **Warning:** Logger memory is full. Download data.
- In this condition, hold is automatically enabled, and a flashing Green LED indicates that no alarm condition has been logged.



#### Simultaneous red single flash every 60 seconds

- **Warning:** Battery is nearly discharged. No alarm conditions are indicated. Fit new battery and download data.
- Once the battery is exhausted, no LEDs will flash.

## Battery Replacement

Measurement Computing recommends that the battery be replaced every 12 months, or prior to logging critical data. The USB-502-LCD does not lose its stored readings when the battery is depleted or when it is replaced; the data logging process will however be stopped and cannot be restarted until the battery has been replaced and the logged data has been downloaded to PC. Use only 3.6V 1/2AA lithium batteries. Check with the supplier that the battery is 'press fit' and is not fitted with solder tabs. Before replacing the battery, remove the USB-502-LCD from the PC.

**Note:** Leaving the USB-502-LCD plugged into the USB port, and prolonged use of LCD, will cause some of the battery capacity to be lost.

**WARNING: Handle lithium batteries carefully, observing warnings on battery casing. Dispose of in accordance with local regulations.**

## LCD Data Indications

Maximum Logged Value — 188 %RH — Relative Humidity Symbol  
 Negative Symbol — 188.5 °C °F — Temperature Symbols  
 Minimum Logged Value

## LCD Status Indications

- |           |  |            |   |
|-----------|--|------------|---|
| <b>d5</b> | DELAYED START<br>Logger set for specific date/time start | <b>109</b> | LOGGING<br>Logging in LCD OFF mode/button pressed (3 seconds) |
| <b>P5</b> | PUSH TO START<br>Logger set for push-to-start            | <b>---</b> | STOPPED<br>Logger not set/button pressed (3 seconds)          |

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