

USB-502-LCD

Specifications



**MEASUREMENT
COMPUTING™**

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Specifications

All specifications are subject to change without notice.

Typical for 25 °C unless otherwise specified.

Specifications in *italic text* are guaranteed by design.

Temperature

Table 1. Temperature specifications

Parameter	Specification
Measurement range	-35 °C (-31 °F) minimum, 80 °C (176 °F) maximum (note 1)
Repeatability (short term)	±0.1 °C, ±0.2 °F typical
Accuracy (overall error)	±0.5 °C typical, ±2 °C maximum ±1 °F typical, ±4 °F maximum
Internal resolution	0.5 °C, 1 °F typical
Dew point accuracy (overall error)	±1.1 °C, ±2 °F typical (note 2)
Alarm threshold range	Software configurable: -35 to 79.5 °C, -31 to 175 °F (high and low alarms)

Note 1: At temperatures below -20 °C (-4 °F), the LCD may exhibit slower response time of approximately 10 seconds.

Note 2: Specifies the overall error in the calculated dew point, for relative humidity measurements between 40 and 100% RH at 25 °C.

Relative humidity

Table 2. Relative humidity specifications

Parameter	Specification (%RH)
Measurement range	0 minimum, 100 maximum
Repeatability (short term)	±0.1 typical
Accuracy (overall error)	±3.0 typical, ±6.0 maximum (note 3)
Internal resolution	0.5 typical
Long-term stability	0.5 typical (%RH per year)
Alarm threshold range	0 to 99.5 (high and low alarms)

Note 3: Specifies the overall error in the logged readings for relative humidity measurements between 20 and 80% RH.

Data sampling

Table 3. Sampling specifications

Parameter	Specification
Sample rate	Software configurable: 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 hr, 2 hr, 6 hr, 12 hr
Temperature samples	16,379 maximum
Relative humidity samples	16,379 maximum
Temperature units	°C or °F
Logging modes	Immediate, delayed start, and push to start (via the device's LCD button)
Data rollover	Software configurable: Allows unlimited logging periods by overwriting the oldest data when memory is filled.

USB specifications

Table 4. USB specifications

Parameter	Specification
USB-device type	USB 2.0 (full-speed)
Device compatibility	USB 1.1, USB 2.0

LED status indicators

Two bicolor (red/green) LEDs display temperature (°C/°F) and relative humidity (%rh) logging status. All conditions listed below apply to both the % RH and °C/°F LED indicators.

Table 5. LED specifications

LED color	Flashing mode	Indication
Green	Single flash every 10 seconds	Currently logging, no alarm.
	Double flash every 10 seconds	Delayed start. Logging to start at the set date and time.
	Triple-flash (alternating with red) every 10 seconds	Memory full, no alarms, <i>Hold</i> is enabled (no more readings are stored).
Red	Single flash every 10 seconds	Currently logging, low alarm condition (note 4)
	Double flash every 10 seconds	Currently logging, high alarm condition (note 4)
	Triple-flash (alternating with green) every 10 seconds	Memory full, high or low alarm condition, <i>Hold</i> is enabled (no more readings are stored). (note 4)
	Both LEDs flash once every 60 seconds	Low battery. Alarm conditions are ignored.
	No LEDs flash	Logger stopped or battery depleted

Note 4: If both alarms have *Hold* selected, the alarm condition may have been triggered at any point during the current logging session.

LCD

The high-contrast LCD shows temperature data and information regarding the logger status.

Table 6. LCD specifications

Parameter	Specification
Temperature (°C/°F)	Current temperature, stored maximum, and stored minimum values
Relative humidity (%RH°)	Current relative humidity, stored maximum, and stored minimum values
LCD mode	Software configurable: <ul style="list-style-type: none"> ▪ Always on ▪ On for 30 seconds after the LCD button is pressed ▪ Always off
Logger status indicators	dS Delayed start. Displayed for 3 seconds after the LCD button is pressed when the device is configured to start at a set date and time.
	PS Push to start. Flashes repeatedly when the logger is configured for "push to start" logging and the LCD button has not yet been pressed.
	log Logging. Displays for 3 seconds when the LCD mode is set to "Always off" and the LCD button is pressed.
	--- Stopped. Displays for 3 seconds after the LCD button is pressed when the device is <i>not</i> configured to log data.

Power

Table 7. Power specifications

Parameter	Specification
Power source	½ AA 3.6 V lithium battery
Battery lifespan	1 year typical (note 5)

Note 5: Battery lifespan is dependent on the sample rate, ambient temperature, and use of the LCD screen.

Environmental

Table 8. Environmental specifications

Parameter	Specification
Operating temperature range (note 6)	-35 °C to 80 °C (-31 °F to 176 °F)

Note 6: At temperatures below -20 °C (-4 °F), the LCD may exhibit slower response time of approximately 10 seconds.

Caution! Exposure of the internal sensor to chemical vapors, such as those produced by some plastics and foamed materials, may interfere with the internal sensor and cause inaccurate readings to be logged. In a clean environment, this will rectify itself over time. Ensure that the USB-502-LCD is operated in a ventilated area in which air exchange is allowed.

High levels of pollutants may cause permanent damage to the internal sensor.

Exposure to extreme conditions or chemical vapors will require the following reconditioning procedure to restore the internal sensor to a calibration state: 80 °C (176 °F) at <5%RH for 36 hours baking, followed by 20-30 °C (70 to 90 °F) at >74%RH for 48 hours rehydration.

Mechanical

Table 9. Mechanical specifications

Dimensions	126.0 mm L x 24.1 mm W x 25.3 mm H (4.96 in. L x 0.95 in. W x 1.00 in. H)
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