

USB-501 Temperature Data Logger

The USB-501 data logger measures and stores up to 16,382 temperature readings over a -35 to +80 °C (-31 to +176 °F) range. The user can easily set up the logging rate and start-time, download the stored data by plugging the module straight into a PC's USB port, and run the purpose-designed software under Windows 2000 or XP. Data can then be graphed, printed and exported to Excel. The data logger is supplied complete with a long-life lithium battery, which will last for up to a full year. Logger status unit is indicated by flashing red/green and amber LEDs. The data logger is protected against dust/moisture ingress to IP67 when the protective cap is fitted.



Control Software

The easy-to-install and use USB-500 Series Data Logger Application software runs in Windows 2000/XP (Home and Professional Editions). It allows the user to configure the USB-501 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

Features

- -35 to +80 °C (-31 to +176 °F) range
- USB interface for set-up and data download
- Two user-programmable alarm thresholds
- Bright red/green and amber LED indication
- Replaceable long-life lithium battery
- IP67 protection

Setup Options

- Logger name
- °C or °F
- Logging rate intervals (10s, 1m, 5m, 30m, 1hr, 6hr, 12hr)
- High and low alarm thresholds
- Start date and start time

Ordering Information

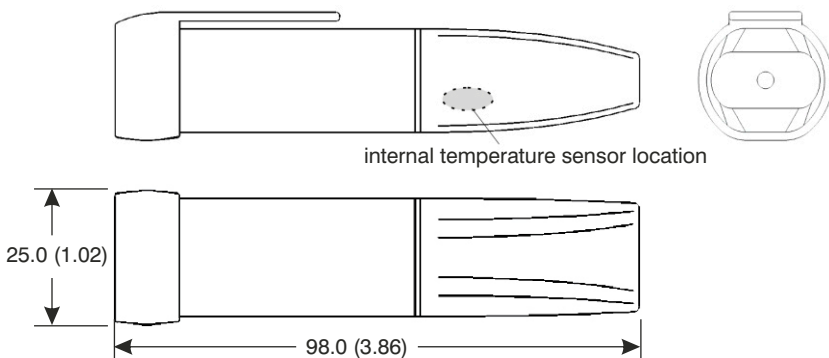
Part Number	Description	Price
USB-501	Temperature Data Logger (Logger unit, software CD, battery)	\$59

USB-501 Specifications

Specification	Min.	Typ.	Max.	Unit
Measurement range	-35 (-31)		+80 (176)	°C (°F)
Internal resolution		0.5 (1)		°C (°F)
Accuracy (overall error)		±1 (±2)		°C (°F)
Logging rate	every 10 sec		every 12 hr	-
Operating temperature range	-35 (-31)		+80 (176)	°C (°F)
1/2AA 3.6V lithium battery life	1*			Year

*@ 25 °C and 1 m logging rate

Dimensions All dimensions in mm (inches)



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LED Flashing Modes

The USB-501 features 2 LEDs.



■ The first LED flashes green or red (G/R) to indicate alarm level status.



















■ The second LED flashes amber (A) to indicate a problem condition on the USB-501.

It will flash red when the logged temperature has exceeded a low or high alarm level.

By default, latching (Hold) is enabled, so the red LED will continue to flash, even after the logged temperature has returned to normal. The red LED will effectively have latched into its alarm condition. This feature ensures that the user is notified that an alarm level has been exceeded, without the need to download the data from the logger.

Latching [Hold] can be turned on via the control software. The red LED will then no longer continue to flash after the logged temperature has returned to normal. Instead, the green LED will then flash.

The LEDs on USB-501 will flash in one of the following ways, assuming latching is turned off.

-   **Green LED flashes twice every 10 seconds**
 - The data logger is not currently logging, but is primed to start at a later date and time.
-   **Green LED flashes once every 10 seconds**
 - The most recently logged temperature is between the Low alarm and High alarm levels.
-   **Green and Amber LEDs flash once every 10 seconds**
 - The most recently logged temperature is between the Low alarm and High alarm levels, but the data logger's memory is full, so no more readings are stored.
 - If latching [Hold] is enabled, then a flashing green LED indicates that no alarm condition has ever been logged.
-   **Red LED flashes once every 10 seconds**
 - The most recently logged temperature is equal to or lower than the Low alarm level (if latching [Hold] is enabled, then the alarm condition may have been triggered a while ago).
-   **Red and Amber LEDs flash once every 10 seconds**
 - The most recently logged temperature is equal to or lower than the Low alarm level (if latching [Hold] is enabled, then the alarm condition may have been triggered a while ago), but the data logger's memory is full, so no more readings are stored.
-   **Red LED flashes twice every 10 seconds**
 - The most recently logged temperature is equal to or higher than the High alarm level (if latching [Hold] is enabled, then the alarm condition may have been triggered a while ago).
-   **Red and Amber LEDs flash twice every 10 seconds**
 - The most recently logged temperature is equal to or higher than the High alarm level (if latching [Hold] is enabled, then the alarm condition may have been triggered a while ago), but the data logger's memory is full, so no more readings are stored.
-   **Amber LED flashes once every 60 seconds**
 - The battery is reaching the end of its useful life, as its voltage has dropped below 3.3V.
 - Data logging continues until the battery voltage drops below 2.8V.
-   **No LEDs flash**
 - The logger is not being used.
 - or
 - The logger was logging, but has now shut down due to a depleted battery (voltage has dropped below 2.8V). Plug the data logger into the PC and run the control software to find out which condition applies.

Battery Replacement

Measurement Computing recommends that the battery be replaced every 12 months, or prior to logging critical data.

The USB-501 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 tags. Before replacing the battery, remove the USB-501 from the PC.

Note: Leaving the USB-501 plugged into the USB port for longer than necessary 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.



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