

USB-500 Series

Stand-Alone, Low-Cost Data Loggers



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Features

- Stand-alone, remote data loggers
- Measure temperature, humidity, voltage, current, or event/state change
- 1 or 2 channels
- Low cost, small size
- Battery powered

Software

- Includes easy-to-use software to set sampling interval, alarms, and start time
- Easily display, graph, and save data in formats such as .csv to import into Microsoft® Excel®



Overview

The USB-500 Series of stand-alone data loggers record temperature, humidity, voltage, current, or event/state change readings. You can easily set up the logging interval and start-time, log data, then upload the stored data by plugging the logger into a USB port on your computer with the included software. Relative humidity, temperature, and dew point data can then be graphed, printed, and exported to Excel. Each data logger is powered by a long-life lithium battery which lasts for up to a full year. Several models are available with different measurement input types, sampling intervals, and amount of built-in memory.

USB-500 Series loggers offer low-cost, stand-alone data collection for temperature, humidity, voltage, current, or event/state change

Analog Input

One or two channels are available on USB-500 Series data loggers. Units are available with temperature, thermocouple, humidity, voltage, current, or event inputs.

Sampling Interval

You can program each logger with sampling intervals from 1 s to as long as 12 hours, depending on your data collection needs. The logger stores the data and then uploads it to a computer through USB when collection is complete.

Status LEDs

USB-500 Series loggers feature one or two LEDs which indicate logging status, alarm condition, battery, and memory status.

Real-Time LCD Display

The USB-501-LCD, USB-501-TC-LCD and USB-502-LCD feature a built-in LCD for real-time display of data. The LCD can display current and maximum/minimum stored temperature and humidity values.

USB-500 Series						
Model	Channels	Measurement Type	Temperature Measurement Range	Sampling Interval	Memory	Features
USB-501-LT	1	temperature	-10 °C to 50 °C	15 min to 2 h	4 K readings	—
USB-501	1	temperature	-35 °C to 80 °C	10 s to 12 h	16 K readings	—
USB-501-LCD	1	temperature	-35 °C to 80 °C	10 s to 12 h	16 K readings	built-in LCD display
USB-501-PRO	1	temperature	-40 °C to 125 °C	1 s to 12 h	32 K readings	extended temp. range
USB-501-RCCG	1	temperature	-20 °C to 60 °C	1 s to 12 h	32 K readings	rechargeable battery
USB-501-TC	1	thermocouple	thermocouple dependent	1 s to 12 h	32 K readings	—
USB-501-TC-LCD	1	thermocouple	thermocouple dependent	1 s to 12 h	32 K readings	built-in LCD display
USB-502	2	temperature, humidity	-35 °C to 80 °C	10 s to 12 h	16 K readings	—
USB-502-LCD	2	temperature, humidity	-35 °C to 80 °C	10 s to 12 h	16 K readings	built-in LCD display
USB-502-PLUS	2	temperature, humidity	-35 °C to 80 °C	10 s to 12 h	16 K readings	increased accuracy
USB-503	1	0 VDC to 30 VDC	—	10 s to 12 h	32 K readings	—
USB-504	1	4 mA to 20 mA	—	10 s to 12 h	32 K readings	—
USB-505	1	event, state change	—	1 s to 12 h	32 K readings	—

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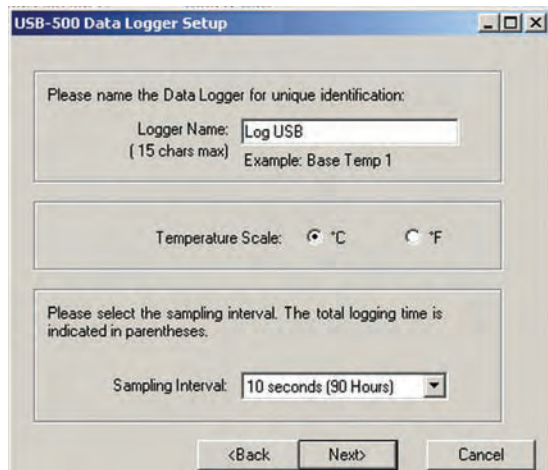
USB-500 Series

General Information & Specifications

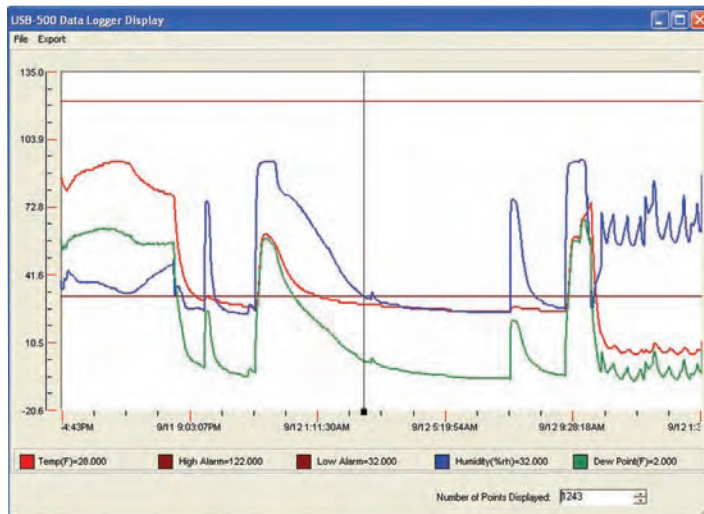
Software

Each USB-500 Series data logger includes an easy-to-use software application with which can set the sampling interval, alarms, temperature scale, and start time.

The included software also displays, graphs, and saves data to a file. Maximum and minimum values are noted. Temperature, humidity, and dew point are also displayed. Data can also be exported into formats such as Excel.



Logging parameters, alarms, and start time are all set up through easy-to-use dialog boxes.



The included data logger software displays recorded measurements in an easy-to-read chart. Movable cursors provide data values along with time stamp. Temperature, humidity, and dew point measurements are displayed. In addition, high and low alarms are also shown.

Specifications

All specifications are subject to change without notice. Typical for 25 °C unless otherwise specified.

USB-501-LT

Lowest Cost Temperature Logger

Temperature

Measurement Range: -10 °C to 50 °C (14 °F to 122 °F)
Resolution: 1 °C (2 °F) typ
Accuracy (Overall Error): ±2.5 °C (±4.5 °F) max

Data Sampling

Sampling Intervals (Software-Selectable): 15 min, 30 min, 1 h, 2 h
Max Temperature Samples: 4,080
Units: °C or °F

Alarms

High Temp Alarm Range: -10 °C to 79.5 °C (14 °F to 175 °F)
Low Temp Alarm Range: -10 °C to 79.5 °C (14 °F to 175 °F)
Temp Resolution: 0.5 °C (1 °F)

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: CR1620 lithium button cell
Battery Lifespan: @ 30 min logging rate, 1 month min

Environmental

Operating Temperature Range: -10 °C to 50 °C (14 °F to 122 °F)

Mechanical

Dimensions (L x W x H): 68 x 18 x 9.4 mm (2.7 x 0.7 x 0.4 in.)



USB-501

Temperature Logger

Temperature

Measurement Range: -35 °C to 80 °C (-31 °F to 176 °F)
Resolution: 0.5 °C (1 °F) typ
Accuracy (Overall Error): ±1 °C (±2 °F) typ

Data Sampling

Sampling Intervals (Software-Selectable): 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Max Temperature Samples: 16,382
Units: °C or °F

Alarms

High Temperature Alarm Range: -35 °C to 79.5 °C (-31 °F to 175 °F)
Low Temperature Alarm Range: -35 °C to 79.5 °C (-31 °F to 175 °F)
Temperature Resolution Range: 0.5 °C (1 °F)

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V Lithium battery
Battery Lifespan: @ 1 min logging rate, 1 year typ

Environmental

Moisture and Dust Protection: Protective cap installed, IP67
Operating Temperature Range: -35 °C to 80 °C (-31 °F to 176 °F)

Mechanical

Dimensions (L x W x H): 98 x 26 x 26 mm (3.86 x 1.02 x 1.02 in.)



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USB-500 Series

Specifications

USB-501-LCD

Temperature Logger with LCD

Temperature

Measurement Range: -35 °C to 80 °C
(-31 °F to 176 °F)

Resolution: 0.5 °C (1.0 °F) typ

Accuracy (Overall Error): ±0.5 °C (±1.0 °F) typ,
±1.5 °C (±3.0 °F) max, when operating between
0 °C and 40 °C

Data Sampling

Sampling Intervals (Software-Selectable): 10 s,
30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h,
6 h, 12 h

Temperature Samples: 16,379

Units: °C or °F

Data Rollover (Software-Selectable): Allows unlimited logging
periods by overwriting the oldest data when the memory is full

Alarms

High Temperature Alarm Range: -35 °C to 79.5 °C (-31 °F to 175 °F)

Low Temperature Alarm Range: -35 °C to 79.5 °C (-31 °F to 175 °F)

Alarm Temperature Resolution: 0.5 °C (1.0 °F) typ

USB Specifications

USB Device Type: USB 2.0 (full speed)

Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V Lithium Battery

Battery Lifespan: @ 1 min logging rate, 1 year max

Environmental

Operating Temperature Range: -35 °C to 80 °C (-31 °F to 176 °F)

Moisture and Dust Protection: Protective cap installed, IP67

Mechanical

Dimensions (L × W × H): 119.5 × 25.3 × 22.1 mm (4.7 × 1.04 × 0.87 in.)



USB-501-PRO

Temperature Logger with Rugged Enclosure

Temperature

Measurement Range: -40 °C to 125 °C (-40 °F to 257 °F)

Resolution: 0.1 °C (0.2 °F) typ

Accuracy (Overall Error): ±0.2 °C (±0.4 °F) typ,
±0.5 °C (±1.0 °F) max, when operating between 0 °C and 40 °C

Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s,
1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h

Temperature Samples: 32,510

Units: °C or °F

Data Rollover (Software-Selectable): Allows unlimited logging
periods by overwriting the oldest data when the memory is full

Alarms

High Temperature Alarm Range: -40 °C to 124.5 °C (-40 °F to 256 °F)

Low Temperature Alarm Range: -40 °C to 124.5 °C (-40 °F to 256 °F)

Alarm Temperature Resolution: 0.1 °C (0.2 °F) typ

USB Specifications

USB Device Type: USB 2.0 (full speed)

Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 2/3AA 3.6 V Lithium battery

Battery Lifespan

@ -20 °C and a 10 s logging rate, 1 year min,

@ 80 °C and a 10 s logging rate, 2 year, typ

@ -40 °C to 125 °C (-40 °F to 257 °F), 3 year max



Environmental

Operating Temperature Range: -40 °C to 125 °C (-40 °F to 257 °F)

Moisture and Dust Protection: Protective cap installed, IP67

Corrosion Protection: Stainless steel housing, 316 grade

Mechanical

Dimensions (L × W × H): 111 × 20 × 20 mm (4.37 × 0.787 × 0.787 in.)

USB-501-RCG

Temperature Logger with Rechargeable Battery

Temperature

Measurement Range: -20 °C to 60 °C
(-4 °F to 140 °F)

Resolution: 0.1 °C (0.2 °F) typ

Accuracy (Overall Error): ±1 °C (±2 °F) typ,

Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min,
15 min, 30 min, 1 h, 2 h, 6 h, 12 h

Temperature Samples: 32,510

Units: °C or °F

Data Rollover (Software-Selectable): Allows unlimited logging
periods by overwriting the oldest data when the memory is full

Alarms

High Temperature Alarm Range: -20.5 °C to 60 °C (-5 °F to 140 °F)

Low Temperature Alarm Range: -20.5 °C to 60 °C (-5 °F to 140 °F)

Alarm Temperature Resolution: 0.5 °C (1.0 °F)

USB Specifications

USB Device Type: USB 2.0 (full speed)

Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: Rechargeable lithium battery

Battery Lifespan

@ -20 °C (-4 °F) and a 1 s logging rate, 1 week min,

@ 20 °C (68 °F) and a 1 min logging rate, 4 weeks min

Battery operates best at temperatures between 10 °C and 30 °C (50 °F and 86 °F).

Only recharge battery in an environment within this temperature.

Environmental

Operating Temperature Range: -20 °C to 60 °C (-4 °F to 140 °F)

Moisture and Dust Protection: Protective cap installed, IP67

Corrosion Protection: Protective cap installed, Stainless steel housing, 316 grade

Mechanical

Dimensions (L × W × H): 92.7 × 19.8 × 19.8 mm
(3.65 × 0.78 × 0.78 in.)

USB-501-TC

Thermocouple Logger

Temperature

The USB-501-TC can log temperatures as detailed below using thermocouple sensors. However, the data logger should not be subjected to temperatures outside the operating temperature range of -10 °C to 40 °C (14 °F to 104 °F).

The K-type thermocouple probe that ships with the USB-501-TC is rated from 0 °C to 400 °C (32 °F to 752 °F).

Measurement Range

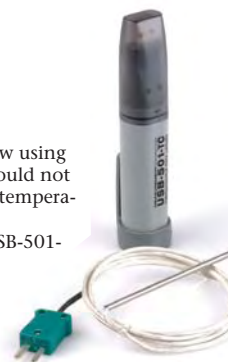
K-type Thermocouple: -200 °C to 1350 °C
(-328 °F to 2462 °F)

J-type Thermocouple: -200 °C to 1190 °C
(-328 °F to 2174 °F)

T-type Thermocouple: -200 °C to 390 °C
(-328 °F to 734 °F)

Resolution: 0.5 °C (1 °F) typ

Accuracy (Logger Error): ±1 °C (±2 °F) typ



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USB-500 Series

Specifications

Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Max Temperature Samples: 32,510
Units: °C or °F

Alarms

High Temperature Alarm Range: -200 °C to 1349.5 °C (-328 °F to 2461 °F)
Low Temperature Alarm Range: -200 °C to 1349.5 °C (-328 °F to 2461 °F)
Alarm Temperature Resolution: 0.5 °C (1 °F)

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Lifespan: @ 1 min logging rate, 6 months typ

Environmental

Operating Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

Mechanical

Dimensions (L × W × H): 118 × 27 × 27 mm (3.86 × 1.02 × 1.02 in.)

USB-501-TC-LCD

Thermocouple Logger with LCD

Temperature

Measurement Range

K-type Thermocouple: -200 °C to 1350 °C (-328 °F to 2462 °F)

J-type Thermocouple: -200 °C to 1190 °C (-328 °F to 2174 °F)

T-type Thermocouple: -200 °C to 390 °C (-328 °F to 734 °F)

Resolution: 0.5 °C (1 °F) typ

Accuracy (Logger Error): ±1 °C (±2 °F) typ

Note: The USB-501-TC-LCD ships with a K-type thermocouple probe rated from 0 °C to 400 °C (32 °F to 752 °F). The USB-501-TC-LCD can log temperatures as detailed above using thermocouple sensors. However, the data logger should not be subjected to temperatures outside the operating temperature range of -10 °C to 40 °C (14 °F to 104 °F).



Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Temperature Samples: 32,510 max
Units: °C or °F

Data Rollover (Software-Selectable): Allows unlimited logging periods by overwriting the oldest data when the memory is full.

Alarms

High Temperature Alarm Range: -200 °C to 1349.5 °C (-328 °F to 2461 °F)
Low Temperature Alarm Range: -200 °C to 1349.5 °C (-328 °F to 2461 °F)
Alarm Temperature Resolution: 0.5 °C (1 °F) typ

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Life: @ 25 °C and 1 min logging rate, 6 months typ

Environmental

Operating Temperature Range: -10 °C to 40 °C (14 °F to 104 °F)

LCD Status Indicators

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

Temperature (°C/°F): Current temperature, stored max, and stored min values
LCD Mode (Software-Selectable): Always on; on for 30 seconds after the LCD button is pressed; always off

Mechanical

Dimensions (L × W × H): 134.5 × 23.9 × 21.2 mm (5.29 × 0.94 × 0.83 in.)

USB-502

Temperature & Humidity Logger

Temperature

Measurement Range: -35 °C (-31 °F) min, 80 °C (176 °F) max

Repeatability: ±0.1 °C (±0.2 °F) typ

Accuracy (Overall Error): ±0.5 °C (±1 °F) typ, ±2 °C (±4 °F) max

Dew Point Accuracy (Overall Error): ±1.1 °C (±2 °F) typ

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

Alarm Threshold Range (Software-Selectable): -35 °C to 79.5 °C (-30 °F to 175 °F) (high and low alarms)

Relative Humidity (%RH)

Measurement Range: 0% to 100%

Repeatability (Short Term): ±0.1 typ

Accuracy (Overall Error): ±3.0 typ

Note: Specifies the overall error in the logged readings for relative humidity measurements from 20% to 80%

Internal Resolution: 0.5 typ

Long Term Stability: 0.5 typ (%RH per year)

Alarm Threshold Range: 0% to 99.5% (high and low alarms)



Data Sampling

Sampling Intervals (Software-Selectable): 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h

Temperature Samples: 16,382 max

Relative Humidity Samples: 16,382 max

Temperature Units: °C or °F

Logging Modes: Immediate and delayed start

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Lifespan: 1 year typ (battery lifespan depends on the sample rate and ambient temperature)

Environmental

Operating Temperature Range: -35 °C to 80 °C (-31 °F to 176 °F)
Ingress Protection: Meets IP67 Standard with protective cap installed

Mechanical

Dimensions (L × W × H): 103 × 26.4 × 26.4 mm (4.06 × 1.04 × 1.04 in.)

USB-500 Series

Specifications

USB-502-LCD

Temperature and Humidity Logger with LCD

Temperature

Measurement Range: -35 °C to 80 °C
(-31 °F to 176 °F)

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

Repeatability (Short Term): ±0.1 °C, ±0.2 °F typ

Accuracy (Overall Error): ±0.5 °C typ, ±2 °C max; ±1 °F typ, ±4 °F max

Internal Resolution: 0.5 °C, 1 °F typ

Dew Point Accuracy (overall error): ±1.1 °C, ±2 °F typ

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

Alarm Threshold Range (Software-Selectable): -35 °C to 79.5 °C (-31 °F to 175 °F) (high and low alarms)

Relative Humidity (%RH)

Measurement Range: 0% to 100%

Repeatability (Short Term): ±0.1 typ

Accuracy (Overall Error): ±3.0 typ, ±6.0 max

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

Internal Resolution: 0.5 typ

Long Term Stability: 0.5 typ (%RH per year)

Alarm Threshold Range: 0% to 99.5% (high and low alarms)

Data Sampling

Sampling Interval (Software-Selectable): 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h

Temperature Samples: 16,379 max

Relative Humidity Samples: 16,379 max

Temperature Units: °C or °F

Logging Modes: Immediate, delayed start, and push to start (through the LCD button on the device)

Data Rollover (Software-Selectable): Allows unlimited logging periods by overwriting the oldest data when memory is filled

USB Specifications

USB Device Type: USB 2.0 (full speed)

Device Compatibility: USB 1.1, USB 2.0

LCD Status Indicators

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

Temperature (°C/°F): Current temperature, stored max, and stored min values

Relative Humidity (%RH): Current relative humidity, stored max, and stored min values

LCD Mode (Software-Selectable): Always on; on for 30 seconds after the LCD button is pressed; always off

Power

Power Source: 1/2AA 3.6 V lithium battery

Battery Life: 1 year typ (battery lifespan depends on the sample rate, ambient temperature, and use of the LCD screen)

Environmental

Operating Temperature Range: -35 °C to 80 °C (-31 °F to 176 °F)

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

Mechanical

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

USB-502-PLUS

Temperature and Humidity Logger with Increased Accuracy

Temperature

Measurement Range: -35 °C to 80 °C
(-31 °F to 176 °F)

Repeatability: ±0.1 °C, ±0.2 °F typ

Accuracy (Overall Error): ±0.3 °C typ, ±1.5 °C max; ±0.6 °F typ, ±3 °F max

Internal Resolution: 0.5 °C, 1 °F typ

Dew Point Accuracy (Overall Error): ±1.1 °C, ±2 °F typ

Note: Specifies the overall error in the calculated dew point for relative humidity measurements from 40% to 100% RH at 25 °C

Alarm Threshold Range (Software-Selectable): -35 °C to 79.5 °C (-30 °F to 175 °F) (high and low alarms)

Relative Humidity (%RH)

Measurement Range: 0% to 100%

Repeatability (Short Term): ±0.1 typ

Accuracy (Overall Error): ±2.0 typ, ±4.0 max

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

Internal Resolution: 0.5 typ

Long Term Stability: 0.5 typ (%RH per year)

Alarm Threshold Range: 0% to 99.5% (high and low alarms)

Data Sampling

Sample Rate (Software-Selectable): 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h

Temperature Samples: 16,382 max

Relative Humidity Samples: 16,382 max

Temperature Units: °C or °F

Logging Modes: Immediate and delayed start

Data Rollover (Software-Selectable): Allows unlimited logging periods by overwriting the oldest data when the memory is full.

USB Specifications

USB Device Type: USB 2.0 (full speed)

Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery

Battery Life: 1 year typ

Environmental

Operating Temperature Range: -35 °C to 80 °C
(-31 °F to 176 °F)

Ingress Protection: Meets IP67 Standard with protective cap installed

Mechanical

Dimensions (L × W × H): 103.0 × 26.4 × 26.4 mm (4.06 × 1.04 × 1.04 in.)



USB-500 Series

Specifications & Ordering Information

USB-503 Voltage Logger

Voltage

Measurement Range: 0 VDC to 30 VDC
Resolution: 50 mVDC
Accuracy (Overall Error): $\pm 1\%$ typ

Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Max Voltage Samples: 32,510
Units: VDC

Alarms

High Voltage Alarm Range: 0 VDC to 30 VDC
High Voltage Alarm Resolution: 0.3 V
Low Voltage Alarm Range: 0 VDC to 30 VDC
Low Voltage Alarm Resolution: 0.3 V

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Lifespan: One year (battery lifespan depends on ambient temperature, logging rate, and use of alarm LEDs)

Environmental

Operating Temperature Range: -35°C to 80°C (-31°F to 176°F)

Mechanical

Dimensions (L x W x H): 98.0 x 26.8 x 26.8 mm (3.86 x 1.05 x 1.05 in.)

USB-504 4-20 mA Current Logger

Current

Measurement Range: 4 mA DC to 20 mA DC typ
Resolution: ± 0.05 mA DC
Accuracy (Overall Error): $\pm 1\%$, ± 1 count

Data Sampling

Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Max Current Samples: 32,000
Units: mA DC

Alarms

High Current Alarm Range: 4 mA DC to 20 mA DC
High Current Alarm Resolution: 0.16 mA
Low Current Alarm Range: 4 mA DC to 20 mA DC
Low Current Alarm Resolution: 0.16 mA

USB Specifications

USB Device Type: USB 2.0 (Full-speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Lifespan: One year (battery lifespan depends on ambient temperature, logging rate, and use of alarm LEDs)

Environmental

Operating Temperature Range: -35°C to 80°C (-31°F to 176°F)

Mechanical

Dimensions (L x W x H): 98.0 x 26.8 x 26.8 mm (3.86 x 1.05 x 1.05 in.)

USB-505 Counter, Event and State Logger

Voltage

Input Range: 3 VDC to 24 VDC
Volt Free Contacts Voltage Resolution: 50 mVDC

Current

Volt Free Contacts Current: 35 μA typ

Data Sampling

Time between events: 200 ms minimum
Time between state changes: 500 ms minimum
Time between event counts: 10 ms minimum with red LED disabled;
50 ms minimum with red LED enabled
Max event or state change samples: 32,510
Timing accuracy: ± 3 s per day at 20°C
Sampling Intervals (Software-Selectable): 1 s, 2 s, 5 s, 10 s, 30 s, 1 min, 5 min, 15 min, 30 min, 1 h, 2 h, 6 h, 12 h
Max Event Samples: 32,510

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0

Power

Power Source: 1/2AA 3.6 V lithium battery
Battery Lifespan: One year battery lifespan depends on ambient temperature, logging rate, and use of alarm LEDs)

Environmental

Operating Temperature Range: -35°C to 80°C (-31°F to 176°F)

Mechanical

Dimensions (L x W x H): 98.0 x 26.8 x 26.8 mm (3.86 x 1.05 x 1.05 in.)

Ordering Information

Description	Part No.
Battery-powered remote temperature logger measures and stores up to 16,382 temperature readings	USB-501
Battery-powered remote temperature logger with LCD display measures and stores up to 16,379 temperature readings	USB-501-LCD
Battery-powered remote temperature logger measures and stores up to 4,080 temperature readings	USB-501-LT
Battery-powered remote temperature logger with extended temperature range measures and stores up to 32,510 temperature readings	USB-501-PRO
Rechargeable-battery-powered remote temperature logger measures and stores up to 32,510 temperature readings	USB-501-RCG
Battery-powered remote thermocouple data logger measures and records temperatures from -200°C to 1300°C	USB-501-TC
Battery-powered remote thermocouple data logger with LCD measures and stores over 32,000 temperature readings	USB-501-TC-LCD
Battery-powered remote temperature and humidity logger measures and stores up to 16,382 relative humidity and 16,382 temperature readings	USB-502
Battery-powered remote temperature and humidity logger with LCD display measures and stores up to 16,379 relative humidity and 16,379 temperature readings	USB-502-LCD
Battery-powered remote temperature and humidity logger with increased accuracy measures and stores up to 16,382 relative humidity and 16,382 temperature readings	USB-502-PLUS
Battery-powered remote data logger measures and stores up to 32,510 voltage readings	USB-503
Battery-powered remote current loop data logger measures and stores up to 32,000 current loop readings	USB-504
Battery-powered remote event, state change, and event count data logger measures and stores up to 32,510 event and state change readings	USB-505

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