USB-500 Series
Low-Cost Data Loggers and Accessories

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Features
- Stand-alone, remote data loggers and portable logger assistant
- 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 and .txt to import into Microsoft® Excel®
- Supported Operating Systems: Windows® 7/Vista®/XP SP2, 32-bit or 64-bit

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

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. Logged 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.

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
Loggers can be programmed with sampling intervals from 1 second 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.

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-RCG	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	—

PLCs   Adquisición   Instrumentos   Registradores   Potencia   HMIs   Switches   Movimiento   Sensores   Convertidores   Teclados   SCADA   Telemetría

USB-500 Series
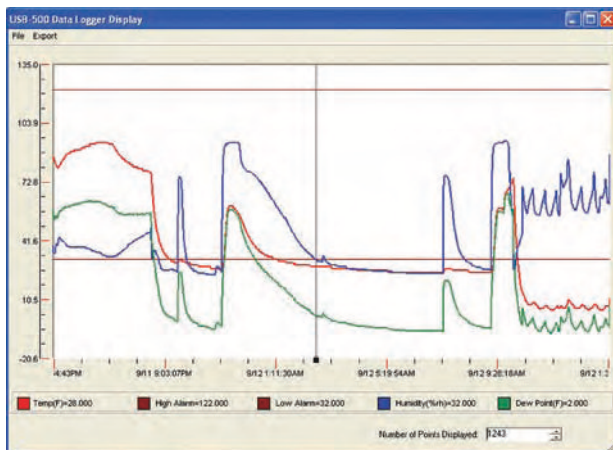## General Information

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 Data Logger Software

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

The included software also displays, graphs, and saves data to a file, and records maximum and minimum values. Logged temperature, humidity, dew point, voltage, and current data can also be exported to *comma-separated values* (.csv) and text formats for display and analysis in popular spreadsheet programs such as Microsoft Excel.

The included USB-500 Data Logger software displays recorded measurements in an easy-to-read chart. Movable cursors isolate data values along with a time stamp. Temperature, humidity, dew point, voltage, current, and event measurements are displayed. In addition, high and low alarms are also shown.

USB-525 Logger Assistant

The ultra-portable USB-525 logger assistant allows the user to conveniently program compatible USB-500 Series loggers and view the data on a high-resolution screen.
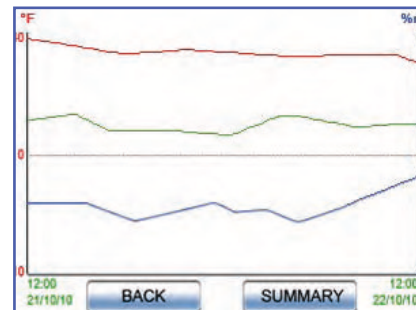
Connect a USB-500 Series data logger directly to the USB port on the USB-525, and follow the instructions on the touch-screen display to set up a compatible logger, download data, view data, and export data for use in a spreadsheet application. Logger setup and data display can be done on site without the need of a computer, reducing interruptions in data collection and decreasing travel by users between sites.

Logged data can also be transferred to a computer over the included micro-USB cable for display using the USB-500 Data Logger software (this feature requires USB-500 Data Logger Application 2.7.1.0 or later).

The USB-525 supports the following USB-500 Series data loggers:

- USB-501
- USB-501-LCD
- USB-501-LT
- USB-501-TC
- USB-501-PRO
- USB-501-RCG
- USB-501-TC-LCD
- USB-502
- USB-502-LCD
- USB-502-PLUS

The USB-525 displays recorded temperature, humidity, dew point, and alarm measurements in an easy-to-read chart.

PLCs   Adquisición   Instrumentos   Registradores   Potencia   HMIs   Switches   Movimiento   Sensores   Convertidores   Teclados   SCADA   Telemetría

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USB-500 Series
Specifications

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 × W × H): 68 × 18 × 9.4 mm (2.7 × 0.7 × 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 × W × H): 98 × 26 × 26 mm (3.86 × 1.02 × 1.02 in.)

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

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USB-500 Series
Specifications

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

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).
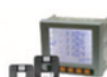
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USB-500 Series
Specifications

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
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-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 over-writing 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

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USB-500 Series
Specifications

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-503
Voltage Logger
Voltage

Measurement Range: 0 VDC to 30 VDC
Resolution: 50 mVDC
Accuracy (Overall Error): ±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 × W × H): 98.0 × 26.8 × 26.8 mm (3.86 × 1.05 × 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): ±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 × W × H): 98.0 × 26.8 × 26.8 mm (3.86 × 1.05 × 1.05 in.)

PLCs   Adquisición   Instrumentos   Registradores   Potencia   HMIs   Switches   Movimiento   Sensores   Convertidores   Teclados   SCADA   Telemetría

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USB-500 Series
Specifications & Ordering Information

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 × W × H): 98.0 × 26.8 × 26.8 mm (3.86 × 1.05 × 1.05 in.)

USB-525 Logger Assistant
Portable Device for USB-500 Logger Setup and Data Viewing

Memory

Internal Flash Memory: Stores over 8,500,000 temperature/
   humidity samples

LCD

240 × 320 pixels, 2.8" thin film transistor with touch-screen
Time Out (Software-Selectable): Backlight turns off after 10 s,
   20 s, 30 s, or 1 min of inactivity

USB Specifications

USB Device Type: USB 2.0 (full speed)
Device Compatibility: USB 1.1, USB 2.0
USB Type A Socket (Top of Device): Connects to compatible
   USB-500 Series data loggers
micro-USB Socket (Bottom of device): Connects device to
   computer using 1 m (3.28 ft) USB cable (included)

Power

Power Source: Lithium polymer battery, rechargeable using
   micro-USB connection
Battery Lifespan: 8 hours max (intermittent use)
   5 hours min (constant use)
Power Down: Device powers down after 5 minutes of inactivity

Environmental

Operating Temperature Range: 0 ˚C to 50 ˚C (32 ˚F to 122 ˚F)

Mechanical

Dimensions (L × W × H): 107 × 68 × 19 mm (4.2 × 2.7 × 0.7 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
Rechargeable battery-powered remote device for on-site setup and data collection from compatible USB-500 Series data loggers.	USB-525

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