

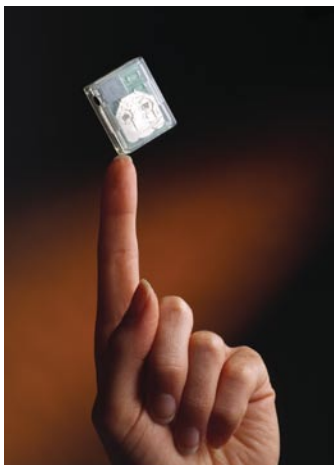
DICKSON

SK500/TK500

Logger Operation

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Product Applications

So compact, slightly larger than a quarter, you can put this data logger just about anywhere. So inexpensive, you can monitor all of your critical applications without sacrificing accuracy and ease of use. These loggers feature great accuracy specifications and use our popular DicksonWare™ software.

SK500 (Temperature) or **TK500 (Temperature & Humidity)** can be used for:

- Monitoring goods in storage
- Logging conditions while goods are in transit
- Mapping and evaluating HVAC/R systems
- Place these loggers in shipping containers, refrigerators, freezers, coolers, ventilation ducts, and just about anywhere you need to monitor temperature conditions.

Useful Features

Delayed Start

- Program how many Days, Hours and Minutes must expire before your unit begins logging.

Customize Graphed Data

- DicksonWare™ calculates Min, Max and Average of all data collected. Customize data by highlighting specific data points which will recalculate MIN, MAX and Average for highlighted information.

Export Data

- A snapshot of your graph can be easily exported to other programs such as Excel™ or PowerPoint™.

Click on the **features button** in the software for detailed instructions on how to use above features

Product Specifications

	TK500	SK500
Temperature Range:	-4 to +158°F (-20 to +70°C) ±1.8°F (±1°C) over range	-4 to +158°F (-20 to +70°C) ±1.8°F (±1°C) over range
Temperature Accuracy:	-4 to +158°F (-20 to +70°C)	-4 to +158°F (-20 to +70°C)
Humidity Range:	0 to 95% RH	
Humidity Accuracy:	±2% over range 10 to 90% RH	
IP Rating	IP20	IP20
Data Capacity:	3840 Sample Points	3840 Sample Points
Sample Interval:	Variable from 10 sec. to 24 hours in 10 sec. increments	Variable from 10 sec. to 24 hours in 10 sec. increments
Battery Type/Life:	Lithium 3V, approximately 1 year	Lithium 3V, approximately 1 year
Response Time:	10 minutes to 63% of full scale	10 minutes to 63% of full scale
Download Time:	30 sec., typical with logger full	30 sec., typical with logger full
Approvals:	CE	CE
Enclosure:	Polycarbonate	Polycarbonate
Memory:	EEPROM	EEPROM
Dimensions:	1.35" x 1.1" x 0.485" (3.43 x 2.79 x 1.23 cm)	1.35" x 1.1" x 0.485" (3.43 x 2.79 x 1.23 cm)
Weight:	0.44 ounces (12.4 grams)	0.44 ounces (12.4 grams)
Includes:	3V Lithium battery	3V Lithium battery
Minimum DicksonWare Version Required:	7.5	7.5

Getting Started

- Install the DicksonWare™ Software.
- Connect the cable (supplied with the software) to the logger and to a working serial port on your computer.
- Click the Setup button. When the setup window appears, all fields should be automatically filled in, this will confirm that DicksonWare™ has recognized the logger. Press the Clear button. This will delete all data currently stored.
- The logger is now sampling and ready for use. The default sample interval is 1 minute. You may choose to change Default settings for sample interval and start-date and time. When changing these settings, the logger will automatically go through the clear process to accept your changes.

NOTE: To conserve battery life when storing unit, press the Setup button and select the shortest Sample Interval and Stop When Full in the Samples section or remove the battery.

DicksonWare™ Software Specifications

- Microsoft Windows® compatible
- Allows for simple viewing and zooming of logged data
- Easy set-up of Dickson Data Loggers including:
 - User selectable sample intervals from 10 seconds to 24 hours
 - Display temperature in °C or °F
 - Delayed logger start times
 - Logger data capacity can be set to wrap data or stop when full
 - Allow for real time monitoring and graphing.
 - Effortless exporting of data and graphs to other software
 - Data can be viewed in tabular (numeric/table) or graphical formats
- Fast downloading of logged data - 30 seconds (typical) from full logger
- Even shows battery power status for battery operated loggers

Specifications:

- **Compatible With:** Microsoft Windows® 95, 98, 2000, NT & XP
- **PC Requirements:** PC with 386 MHz or better microprocessor, 4 M RAM, 1 free COM (serial) port, CD drive
- **Cable Type/Length:** 9 pin male D-shell to male 2.5mm stereo plug, 6' long
- **Computer Interface:** RS-232 COM (serial) port
- **DicksonWare™ Version Required (minimum):** See Specific Model for Version Requirement

DicksonWare™ SECURE Software Specifications

To ensure the authenticity, integrity and confidentiality of data, 21CFR Part 11 requires that electronic records adhere to certain criteria. DicksonWare™ SECURE software collects data from our validated data logger, creates detailed graphs and reports and contains the following features that comply with 21CFR11:

- Password protection
- Electronic signature consisting of User ID and Password
- Collected data encrypted in secure files
- Audit trail capability to identify date, time, user and action

For a complete 21CFR11 compliant package, order the following:

1. Appropriate Validated data logger
2. DicksonWare™ SECURE Software & Serial Download Cable - **A025**
3. Certificate of Validation/logger - **N520**
4. Choose One Calibration Option Listed Below:
 - a. NIST Traceable Calibration 3-pt. (new unit) - **N300**
 - b. NIST Traceable Calibration 1-pt. (new unit) - **N100**
 - c. A2LA Accredited Calibration 3-pt. (new unit) - **N400**

Note: SW400 Calibration Software may not be used with DicksonWare™ SECURE software.

Specifications:

- **Compatible With:** Windows® 95, 98, 2000, NT & XP
- **PC Requirements:** 386MHz processor or higher, 4MB RAM, 1 free COM (serial) port, CD drive
- **Cable Type/Length:** 9 pin male D-shell to male 2.5mm stereo plug, 6" long
- **Operating Range:** -20 to +135°F, 0 to 95%RH (non-condensing)
- **Computer Interface:** RS-232 COM (serial port)

Accessories (for current pricing go to www.dicksondata.com or call 1-800-323-2448)

Software	Order #
DicksonWare™ Software and Serial Download Cable	A015
DicksonWare™ SECURE Software and Serial Download Cable	A025
Logger Calibration Software*	SW400

Calibrations

NIST Traceable Calibration 3-pt (new unit)**	N300
NIST Traceable Calibration 1-pt (new unit)**	N100
A2LA Accredited Calibration 3-pt. (new unit)**	N400
Certificate of Validation	N520

Cables

50' Cable - For remote connection of logger to PC	X050
25' Cable - For remote connection of logger to PC	X025
Serial to USB Adapter	A170
Extra 6' Serial Download Cable	A060

*SW400 not for use with DicksonWare SECURE™ (A025)

**Calibrations are per unit

Frequently Asked Questions

- **Sample Interval:** The Sample Interval determines how frequently the data logger will save a reading. Using DicksonWare™ Software, the user can set a Sample Interval ranging from 10 seconds to 24 hours in 10 second increments. A temperature logger with data storage of 32,512 set at a 10 second Sample Interval will record for 3.75 days, while the same logger set at a 1 minute Sample Interval will record for 22.5 days.
- **Data Storage:** Data Storage is the number of Sample Points a data logger can hold. You will find models that range from 7,680 samples to 32,512. A temperature logger with Data Storage of 32,512 and a sample interval set at 30 seconds would record for 11.25 days, while a temperature logger with Data Storage of 7,680 and the same sample interval would record for only 2.6 days.
- **Does it have to stay connected to a PC in order for it to work?** No. Unless you're viewing data in real-time you only connect the logger to a PC when you want to view / retrieve data.
- **What happens when all the storage space is taken up? Do I have to throw it away?**
- After you have downloaded the data, you simply "clear" the logger and it is ready to log more data.
- **What happens if I leave it monitoring somewhere too long?** The Data Loggers have two user selectable modes, Stop and Wrap. In Stop mode, they will quit logging data when the memory is full. In Wrap mode, the Logger will begin to overwrite the oldest data in its memory.
- **Where can I put them?** Depending on the Dickson model, just about anywhere. We have water-proof units, stainless steel models, units with probes, and units that handle extreme temperatures. Our wide selection of instruments should fit about any application.
- **What is the biggest advantage of a Data Logger?** Its data is "logged", stored on a micro-chip inside the Data Logger. Data in electronic memory takes advantage of the power of a PC and software.
 - * Store the data as you would store any document on your PC.
 - * Retrieve archived data as easily as opening a file on your PC.
 - * Share the data as you would any PC file, email, copy and paste.
 - * Data can be imported into spreadsheet software and word processing documents.
 - * Easily import data from multiple data loggers onto a single graph.
- **How are they mounted?** The smallest ones, about the size of a pager, can be wall-mounted with Velcro or simply set anywhere you need to monitor. The larger units have keyhole slots for wall mounting and can also stand on their own.

Calibration Services - New Units

- **N100 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point on new units only.
- **N300 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) on new units only.

The Importance and Benefits of Regular Calibrations

Once you begin to use your precision Dickson instrumentation, regular calibrations are necessary to ensure accurate readings.

The following Calibration Services are available:

- **N150 - NIST Traceable Calibration 1-Point:** Includes documentation to one Dickson pre-selected point after re-calibration.
- **N350 - NIST Traceable Calibration 3-Point:** Includes documentation of three Dickson pre-selected points (a high, medium, and low) after re-calibration.

Why should I recalibrate my instrumentation?

- Over time dirt, dust and normal handling can throw your precision instrumentation out of calibration. Regular calibrations ensure that you receive the most accurate readings possible.

How often should I recalibrate my instrumentation?

- Depending on the environment your instrument is used in and how often it is handled you will want to recalibrate your instrument every 6 to 12 months. Instruments in environments where there are extreme temperatures, wide temperature ranges, humidity or pressure variations, high condensation, dirt, dust and other debris will require calibration at least every 6 months. Instruments that are frequently moved or in locations with heavy machinery that cause vibrations should also be calibrated at least every 6 months.

Why should I return my instrument to Dickson for calibration?

- Dickson calibrates your instrument at the factory using proprietary production/calibration software that guarantees proper calibration.

Our Capabilities

Dickson is the first manufacturer of humidity and temperature instrumentation to receive A2LA accreditation. We are also NIST Traceable; our procedures conform to MIS-STD-45662A, ANSI/NCSL 2540-1-1994, ISO/IEC Guide 25 and ISO10012. We are experts in the manufacture and calibration of humidity and temperature instruments.

- **Fast Service:** Our turnaround time is 3 days or less so you receive not only expert service but fast service as well.
- **Easy:** We make it easy for you! No phone calls for Return Authorization Numbers are required. We remind you when your instrument is due for calibration. You simply send in the completed Calibration Order Form with your unit for calibration with freight prepaid to Dickson.

Calibration

Periodically check accuracy with a test gauge. If pen adjustment is required, use the adjusting screw located inside the door on the upper left corner of the dial plate. Check two points on the scale when adjusting the pen to make sure recorder calibration is maintained.

Note: When no signal (no pressure) is being applied to the recorder, the pen may not rest exactly on the zero chart line. It is possible for the allowable 2% of scale error to occur at zero, while upscale readings are increasingly more accurate.

Troubleshooting

For troubleshooting information, click [here](#) for the technical support page.

Warranty

Dickson warrants that the products it sells will be free from defects in material and workmanship under normal use and service for a period of twelve months after delivery. In the event of a claim under this

warranty, the product or part must be returned to the factory for repair or replacement (shipping pre-paid) with a Return Authorization Number (see Return Information above). It will be repaired at Dickson's option without charge. This warranty DOES NOT cover routine calibration, pen, chart and battery replacement. The foregoing warranty and remedy are exclusive and in lieu of all other warranties either expressed or implied. Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products. Dickson makes no warranty for products not manufactured by it or for any products modified by buyer, or subject to misuse or neglect.

Factory Service & Returns

Contact the factory (630-543-3747) for a Return Authorization (RA) Number before returning any instrument. The model number, serial number and a purchase order number will be requested before an RA number is issued.

- Carefully repack the instrument, label the outside of the box with the RA# and return the instrument (freight pre-paid) to Dickson.
- All instruments that do not have the RA# clearly marked on the outside of the box will be refused. When returning instruments for credit, please include all accessories in shipment.
- Calibration/Freight charges are non-refundable.

NOTE: Dickson shall not be liable for consequential or incidental damages resulting from failure or malfunction of its products.

Customer Satisfaction

Dickson takes pride in providing you, the customer, with the highest quality instrumentation. We welcome the opportunity to help you in any way possible. Whether it be a question or a new idea in documentation, the Dickson Company would like to hear your response. Please call our Customer Service Department at 1-800-323-2448 or (630) 543-3747 (in Illinois).

Software Return Policy

IMPORTANT-Read your Software License Agreement carefully before installing software. Dickson will accept returns for replacement of defective disks and CDs only.