

DICKSON

HT100/120/125

High-Temp Logger Operation

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Product Applications

The HT100, HT120 & HT125 were developed to handle the extreme temperatures and conditions previously impossible for a data logger. With a temperature monitoring range of -40 to +257°F and a waterproof case constructed of stainless steel, the HT100, HT120 & HT125 are ready for your toughest applications. Perfect for HACCP, FDA, pharmaceutical, medical agricultural and oil & gas applications.

- Real time monitoring and graphing
- Faster downloads
- Makes exporting to other software a snap!
- Test a demo version at www.dicksonweb.com

Useful Features

- Temperature range -40 to +257°F (-40 to +125°C)
- 316 stainless steel enclosure
- Stores 7936 sample points
- Battery operation—5 year battery life

HT100

- Dimensions: 3.69" x 0.69" diameter

Ideal for:

- Process monitoring of food, pharmaceuticals, oil, gas and chemical production
- Monitoring temperatures in remote or hard to read locations including wells and storage tanks

HT120

- Dimensions: 6.25" x 0.69" diameter (2.5" x 3/16" diameter probe)

Ideal for:

- Agricultural applications including monitoring soil temperature and hay and feed storage
- Monitoring temperatures in laboratory incubators, autoclaves and baths

HT125

- Dimensions: 8.69" x 0.69" diameter (5" x 0.11" diameter piercing probe)

Ideal for:

- HACCP compliance including monitoring temperatures in coolers, smokers and freezers
- Piercing probe is perfect for monitoring meat and dairy processes storage

Product Specifications



	HT100	HT120
Temperature Range:	-40 to +257°F (-40 to +125°C)	-40 to +257°F (-40 to +125°C)
Temperature Accuracy:	±1.8°F (±1°C) over range -4 to +212°F (-20 to +100°C)	±1.8°F (±1°C) over range -4 to +212°F (-20 to +100°C)
IP Rating	IP68	IP68
Sensor Type:	Internal Thermistor	Internal Thermistor
Battery Life:	5 years typical at 1 minute sample intervals	5 years typical at 1 minute sample intervals
Sample Point Storage:	7936	7936
Download Time:	45 seconds, typical when not logging	45 seconds typical when not logging
Response Time:	15 min. to 63% full scale 0.1°F (0.1°C) at +70°F; 1°F (0.6°C) over range -40 to +275°F (-40 to +125°C)	5 min. to 63% full scale 0.1°F (0.1°C) at +70°F; 1°F (0.6°C) over range -40 to +275°F (-40 to +125°C)
Approvals:	CE	CE
Enclosure Type:	316 Stainless Steel	316 Stainless Steel
Dimensions (enclosure):	3.69" x 0.6875" diameter (9.37cm x 1.75cm)	6.25" x 0.6875" diameter (15.88cm x 1.75cm)
Weight:	2.5oz (72g)	2.7oz (78g)
Minimum DicksonWare™ Version Required:	6.0.2.11	6.0.2.11



	HT125
Temperature Range:	-40 to +257°F (-40 to +125°C)
Temperature Accuracy:	±1.8°F (±1°C) over range -4 to +212°F (-20 to +100°C)
IP Rating	IP68
Sensor Type:	Internal Thermistor
Battery Life:	5 years typical at 1 minute sample intervals
Sample Point Storage:	7936
Download Time:	45 seconds, typical when not logging
Response Time:	5 min. to 63% full scale 0.1°F (0.1°C) at +70°F; 1°F (0.6°C) over range -40 to +275°F (-40 to +125°C)
Approvals:	CE
Enclosure Type:	316 Stainless Steel
Dimensions (enclosure):	8.69" x 0.6875" diameter (22.07cm x 1.75cm)
Weight:	2.7oz (78g)
Minimum DicksonWare™ Version Required:	6.0.2.11

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. Should all fields remain blank, refer to "No Communication" in the Trouble Shooting section of this manual. Once DicksonWare™ recognizes 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. Do not expose download cable to temperatures above 175°F

WARNING

Fire, explosion and server burn hazard. Do not recharge, disassemble, heat above 145°C, incinerate, or expose battery to water.

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 units)	N400
Certificate of Validation	N520

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

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 waterproof 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 microchip 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/NCCL 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.

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.

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DICKSON

930 South Westwood Avenue
Addison, Illinois 60101

HT100/120/125

Operación de registro de Alta-Temperatura

Introducción

- Instale DicksonWare™ (compatible con Windows® 98 o más alto). DicksonWare™ versión 6.0.2.11 o más alta es requerida.
- Si ya tiene Dickson Ware en su ordenador, verifique la versión seleccionando “Ayuda” y “Acerca de” desde el menú de la barra para verificar que versión tiene instalado y asegurarse que cumple con los requisitos del registrador.
- Inicie DicksonWare™ usando el icono que está en el escritorio.
- Conecte el cable (suministrado con el software) al registrador y a un puerto Serial COM o USB que este funcionando en su ordenador.
- Pinche el botón de configuración. Le indicará que seleccione el puerto USB o Serial COM, seleccione su conexión y presione “Continué”. Aparecerá una ventana de configuración, y todos los campos deberían llenarse automáticamente. Esto confirma que DicksonWare™ ha reconocido al registrador. El registrador esta tomando muestras a partir de este momento.

ADVERTENCIA

Riesgo de fuego, explosión y quemaduras severas. No debe recargarse, desarmarse, exponer a temperaturas mayores de 145°C, incinerarse, o exponer la batería al agua. No debe exponerse el cable de descarga a temperaturas mayores a 175°C

Importante Saber

- Cuando se cambia la configuración del registrador (intervalo de muestreo y fecha y hora de inicio) el registrador borrará toda la información almacenada automáticamente.
- Para extender la vida de la batería durante la operación, use una frecuencia de muestreo menos frecuente y desconecte la unidad del puerto USB o serial cuando no esté bajando data.

Fahrenheit/Centígrados

El registrador de datos tiene como por defecto la captura de temperatura en grados Fahrenheit. Si desea ver datos registrados en el futuro en el grafico o en la tabla en grados Centígrados, vaya a “Archivo,” “Preferencias” y luego cambie la selección de temperatura.

Cambio de la Batería

El monitor de nivel de batería en la pantalla de “Configuración” muestra el voltaje de la batería y una advertencia de batería baja cuando es requerido que sea cambiada.

Cuando se está cambiando la batería, el registrador no recolecta datos sin embargo no se pierde información de la memoria. Para reiniciar la recolección de muestras, baje la data y luego limpie la memoria.

La Garantía Dickson

Dickson garantiza que esta línea de instrumentos estará libre de defectos materiales y de mano de obra bajo condiciones de uso y servicio normales, por un período de doce meses desde el momento de su entrega.

Esta garantía no cubre calibración de rutina ni reemplazo de batería.

Para Especificaciones y Soporte Técnico vaya a www.DicksonData.com

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Mode d'emploi de l'enregistreur haute température

Débuter

- Installez DicksonWare™ (compatible avec Windows® 98 ou supérieur). DicksonWare™ version 6.0.2.11 ou supérieure est requis.
- Si vous disposez déjà de DicksonWare sur votre ordinateur, vérifiez la version en cliquant sur "Help" et "About" dans la barre de menu pour vérifier la version dont vous disposez et assurez-vous qu'elle est conforme aux exigences du dispositif d'enregistrement.
- Lancez DicksonWare™ en cliquant sur l'icône installé sur votre bureau.
- Connectez le câble (fourni avec le logiciel) à l'enregistreur et au port série dans votre ordinateur, COM ou USB.
- Cliquez sur le bouton Setup. Vous serez invités à sélectionner le port USB ou COM série, sélectionnez votre connexion puis cliquez sur Continue. Une fenêtre de configuration apparaîtra et tous les champs seront automatiquement remplis. Cela confirmera que DicksonWare™ a reconnu le dispositif d'enregistrement. Ce dernier commencera alors l'échantillonnage.

AVERTISSEMENT

Risque d'incendie, d'explosion et de brûlures graves. Ne rechargez pas, ne démontez pas, ne chauffez pas au delà de 145°C, n'incinerez pas et n'exposez pas la pile à l'eau. N'exposez pas le câble de téléchargement à des températures dépassant 175°C

A savoir

- Lors de la modification des paramètres du dispositif d'enregistrement (intervalle de mesure, date et heure de début), l'enregistreur effacera automatiquement toutes les données stockées.
- Pour obtenir une plus longue durée de vie de la pile durant l'opération, utilisez un intervalle de mesure moins fréquent et déconnectez l'unité du port USB ou COM série lorsque vous ne téléchargez pas de données.

Fahrenheit/Celsius

L'enregistreur de données est réglé par défaut pour enregistrer des données en Fahrenheit. Si vous désirez changer l'unité de mesure sur le graphique ou la table, allez dans "File," "Preferences" puis modifiez la sélection de température.

Remplacement de la pile

Le moniteur du niveau de la pile de l'écran "Setup" affiche la tension de la pile et une alarme de pile faible lorsqu'un remplacement est nécessaire.

Lors du remplacement de la pile, l'enregistreur de données ne collectera pas de données mais la mémoire ne sera pas perdue. Pour recommencer l'échantillonnage, téléchargez les données puis effacez la mémoire.

La garantie Dickson

Dickson garantit cette ligne d'instruments sans défauts en matériel ou en main-d'oeuvre sous usage et service normal pour une période de douze mois à compter de la livraison.

Cette garantie ne couvre pas l'étalonnage de routine et le remplacement de la pile.

Veuillez visiter le site www.DicksonData.com pour des spécifications et l'assistance technique.

HT100/120/125

Betrieb des Loggers bei hohen Temperaturen

Erste Schritte

- Installieren Sie die DicksonWare™ Software (Windows® 98- oder aufwärtskompatibel). DicksonWare™ Version 6.0.2.11 oder höher erforderlich.
- Falls sich die DicksonWare Software bereits auf Ihrem PC befindet, so schauen bitte Sie in der Menüleiste unter „Hilfe“ und „Über ..“ nach, um welche Version es sich handelt und vergewissern Sie sich, dass die Software die Voraussetzungen des Loggers erfüllt.
- Öffnen Sie die DicksonWare™ Software mittels des auf Ihrem Desktop befindlichen Icons.
- Verbinden Sie das Kabel (wird zusammen mit der Software ausgeliefert) mit der Registriereinrichtung und einen an Ihrem Rechner befindlichen funktionsfähigen Seriellen COM oder USB Anschluss.
- Klicken Sie auf den Button „Einrichten“. Sie werden dazu aufgefordert, einen USB oder Seriellen COM Anschluss auszuwählen. Wählen Sie daraufhin Ihren Verbindungstyp aus und klicken Sie auf „Weiter“. Ein Fenster zum Einrichten der Software erscheint, woraufhin sämtliche Felder automatisch ausgefüllt werden sollten. Dies ist eine Bestätigung, dass die DicksonWare™ Software den Logger erkannt hat. Der Logger ist jetzt dabei, Daten zu erfassen.

WARNHINWEIS

Feuer, Explosionen und ernsthafte Brandgefahr. Laden Sie die Batterie nicht wieder auf, bauen Sie die Batterie nicht auseinander, erhitzen Sie die Batterie nicht auf mehr als 145°C, verbrennen Sie die Batterie nicht, und lassen Sie die Batterie nicht mit Wasser in Berührung kommen. Setzen Sie das Kabel zum Herunterladen keinen Temperaturen aus, die 80°C übersteigen

Wissenswertes

- Wenn Sie die Konfiguration des Loggers ändern (Erfassungsintervalle sowie Starttermin und –zeit), löscht der Logger automatisch alle gespeicherten Daten.
- Zur Erhöhung der Batterielebensdauer verwenden Sie bitte eine geringere Erfassungsfrequenz und entfernen Sie den Geräteanschluss aus dem USB oder Seriellen Anschluss, wenn Sie keine Daten herunterladen.

Fahrenheit/Celsius

Der Datenlogger erfasst Daten standardmäßig in Fahrenheit. Falls Sie künftig die erfassten Daten oder die grafische Darstellung in Celsius ansehen möchten, so wählen Sie bitte unter „Datei“ die Menüoption „Präferenz“ aus und ändern Sie dann die Temperatúrauswahl.

Austausch der Batterie

Wenn ein Austauschen der Batterie erforderlich wird, zeigt der Überwachungsbildschirm des Aufladestatus der Batterie auf dem Bildschirm „Einrichten“ den Spannungszustand der Batterie und einen Warnhinweis bzgl. des niedrigen Batteriespannungszustands an.

Während des Austauschens der Batterie erfasst der Logger keine Daten, diese gehen jedoch nicht verloren. Zum erneuten Starten der Datenerfassung laden Sie die Daten herunter und löschen danach den Speicher.

Die Dickson Garantie

Dickson garantiert, dass die Produktlinie dieses Instruments hinsichtlich Material und Verarbeitung bei standardmäßigem Gebrauch und Service frei von Mängeln ist.

Diese Garantie deckt keine routinemäßigen Kalibrierungen und Austausch von Batterien.

Genauere Angaben sowie Hinweise zum Technischen Support finden Sie unter www.DicksonData.com.

HT100/120/125

Funzionamento del Logger alle alte temperature

Per iniziare

- Installare DicksonWare™ (compatibile con Windows® 98 o successivo). È richiesta la versione 6.0.2.11 o superiore di DicksonWare™.
- Se DicksonWare è già installato sul PC verificarne la versione selezionando "Help" ed "About" dalla barra di menu bar e assicurarsi che la versione sia compatibile con i requisiti del logger.
- Attivare DicksonWare™ cliccando l'icona che si trova sul desktop.
- Collegare il cavo (fornito con il software) al logger ed a una porta operativa seriale COM o USB del computer.
- Fare clic sul pulsante Setup. Sarà chiesto di selezionare la porta USB o COM seriale, ed una volta fatto cliccare Continue. Apparrà la finestra Setup, in cui tutti i campi sono compilati automaticamente. Questo conferma che DicksonWare™ ha riconosciuto il logger. Il logger sta ora eseguendo le letture.

PERICOLO

Pericolo di incendio, esplosione e ustioni severe. Non ricaricare, smontare, riscaldare al di sopra di 145°C, incenerire, o esporre la batteria all'acqua. Non esporre il cavo di scarica a temperature superiori a 175°F

Informazioni indispensabili

- Quando si modificano le impostazioni del logger (intervallo fra le letture e data ed ora d'inizio) il logger rimuoverà automaticamente tutti i dati memorizzati.
- Allo scopo di ottenere una maggiore durata della batteria durante il funzionamento, usare una frequenza di lettura inferiore e sconnettere l'unità dalla porta seriale o USB quando non si stanno scaricando dati.

Fahrenheit/Celsius

Il data logger è predisposto per la registrazione dei dati in gradi Fahrenheit. Se si vogliono leggere futuri dati registrati sul grafico o sulla tabella in gradi Celsius selezionare "File," "Preferences" e quindi cambiare la selezione delle unità di misura di temperatura.

Sostituzione della batteria

Il monitor di livello batteria sul display "Setup" visualizza la tensione della batteria e l'avviso di batteria scarica quando è necessario sostituirla.

Nella sostituzione della batteria il logger non raccogliere dati ma i dati registrati in memoria non andranno persi. Per iniziare nuovamente le letture, scaricare i dati e poi cancellare la memoria.

La garanzia Dickson

Dickson garantisce che questa linea di strumenti sarà priva di difetti di materiale e manodopera nelle condizioni normali d'uso e di servizio per il periodo di dodici mesi dalla consegna.

Questa garanzia non copre la calibrazione di routine e la sostituzione della batteria.

Per informazioni tecniche ed assistenza tecnica accedere al sito www.DicksonData.com