

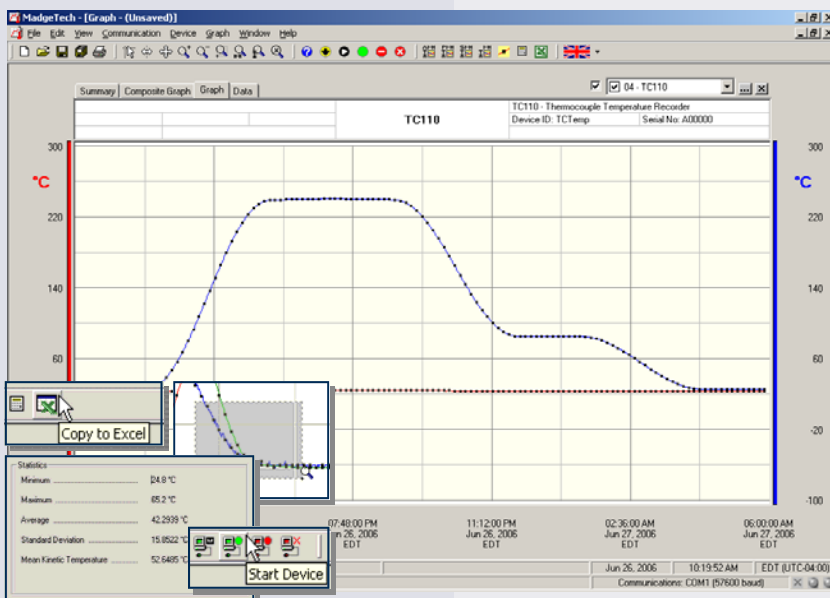
### Features

- 10 year battery life
- Wide temperature range
- Accepts thermocouple types J, K, T, E, R, S, B, N
- High speed download
- N.I.S.T. traceable
- Real-time operation
- Low cost
- Programmable start time
- Miniature size

### Applications

- Process verification and validation
- Dry ice shipments and storage
- Oven profiling
- HVAC
- Medical/Pharmaceutical
- Museum monitoring
- Environmental studies
- Replace costly strip chart recorders
- Implement HACCP programs

The TC110 is a miniature, battery powered, stand alone, thermocouple based temperature recorder. The TC110 features a real-time clock module that extends the battery life to >10 years and allows for high speed downloads. This is an all-in-one compact, portable, easy to use device that will measure and record up to 16,383 measurements per channel. The storage medium is non-volatile solid state memory, providing maximum data security even if the battery becomes discharged. The device can be started and stopped directly from your computer and its small size allows it to fit almost anywhere. The TC110 makes data retrieval quick and easy. Simply plug it into an empty COM or USB port and our user-friendly software does the rest.



**MadgeTech Data Recorder Software** displays temperature data in an easy to use graph.

The Windows®-based software package allows the user to effortlessly collect, display and analyze data. A variety of powerful tools allow you to examine, export, and print professional looking data with just a click of the mouse.

Click [MadgeTech Software](#) for more information or to download the software.

## TC110 SPECIFICATIONS\*

<b>Internal Channel</b>			
<b>Temperature Range:</b>	-40 to +80°C		
<b>Temperature Resolution:</b>	0.1°C		
<b>Calibrated Accuracy:</b>	±0.5°C (0 to +50°C)		
<b>Remote Channel</b>			
<b>Thermocouple Types:</b>	J, K, T, E, R, S, B, N		
<b>Thermocouple connection:</b>	Female subminiature (SMP), fixed screw terminal, or pluggable screw terminal		
<b>Cold Junction Compensation:</b>	Automatic, based on internal channel		
<b>Maximum Thermocouple Resistance:</b> 1000Ω, <100Ω recommended			
<b>**Thermocouple Type:</b>	<b>Range (°C)</b>	<b>Resolution</b>	<b>Accuracy</b>
J	-210 to +760	0.1°C	±0.5°C
K	-260 to +1370	0.1°C	±0.5°C
T	-260 to +400	0.1°C	±0.5°C
E	-260 to +980	0.1°C	±0.5°C
R	-50 to +1760	0.5°C	±2.0° C
S	-50 to +1760	0.5°C	±2.0° C
B	+60 to +1820	0.5°C	±2.0° C
N	-260 to +1300	0.1°C	±0.5°C

\*\*Accuracy specifications based on 3-meter 24 AWG thermocouple.

<b>Start Modes:</b>	Software programmable immediate start or delay start up to six months in advance
<b>Real Time Recording:</b>	May be used with PC to monitor and record data in real time
<b>Memory:</b>	16,383 readings per channel for a total of 32,766 readings; software configurable memory wrap
<b>Reading Rate:</b>	1 reading every 2 seconds to 1 every 12 hours
<b>Calibration:</b>	Digital calibration through software
<b>Calibration Date:</b>	Automatically recorded within device
<b>Battery Type:</b>	3.6V lithium battery included, <b>user replaceable</b>
<b>Battery Life</b>	10 years (15 minute reading rate at 25°C)
<b>Data Format:</b>	Date and time stamped °C, °F, K, °R
<b>Time Accuracy:</b>	±1 minute/month (at 20 to 30°C)
<b>Computer Interface:</b>	PC serial or USB (interface cable required); 57,600 baud
<b>Software:</b>	XP SP3/Vista/Windows 7
<b>Operating Environment:</b>	-40 to +80°C, 0 to 95%RH non-condensing
<b>Dimensions:</b>	1.7" x 2.3" x 0.8" (44mm x 59mm x 21mm)
<b>Weight:</b>	1.3 oz (35 g)

**BATTERY WARNING:** FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT RECHARGE, DISASSEMBLE, HEAT ABOVE 212°F, INCINERATE OR EXPOSE CONTENTS TO WATER

## SOFTWARE FEATURES

<b>Multiple Graphs:</b>	Simultaneously analyze data from several units or deployments; easily switch to a single data series	<b>Statistics:</b>	Calculate averages, min, max, standard deviation, and mean kinetic temperature with the touch of a button
<b>Graphical Cursor:</b>	One click displays readings by time, value, parameter or sample number	<b>Export Data:</b>	Export data in a variety of common formats, or switch to Excel® with a single click
<b>Data Table:</b>	Instantly access tabular view for detailed dates, times, values, and annotations	<b>Calibration:</b>	Automatically calculate and store calibration parameters
<b>Scaling Options:</b>	Autoscale function fits data to the screen, or allows user to manually enter their own values	<b>Logger Configuration:</b>	Easy set up and launch of data loggers with immediate or delayed start, preferred sample rate, and device ID
<b>Formatting Options:</b>	Change colors, line styles, plotting options, show or hide channels quickly	<b>Communications:</b>	Automatically sets up communications port, or lets user select configuration

\*SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE. SPECIFIC WARRANTY AND REMEDY LIMITATIONS APPLY. CALL 1-603-456-2011 OR GO TO WWW.MADGETECH.COM FOR DETAILS.

## ORDERING INFORMATION

Model	Description	Price (U.S.)
TC110-MP	Thermocouple Recorder, standard mini plug	\$249.00
TC110-ST	Thermocouple Recorder, fixed screw terminal	\$249.00
TC110-TB	Thermocouple Recorder, pluggable terminal	\$249.00
IFC110	Software, manual and RS232 interface cable	\$99.00
IFC200	Software, manual and USB interface cable	\$119.00
NIST	N.I.S.T. Calibration Certificate	Call for Pricing
LTC-7PN	Replacement battery for TC110	\$10.00

### ASK ABOUT OUR OTHER DATA RECORDERS

Temperature	Pulse/Event/State
Humidity	Low Level Current
Pressure	Low Level Voltage
pH	RF Transmitters
Level	Intrinsically Safe
Shock	Spectral Vibration
LCD Display	

For Quantity Discounts call 603-456-2011 or email [sales@madgetech.com](mailto:sales@madgetech.com)



DOC-1009009-00 REV G 2010.08.27