

# TC101A THERMOCOUPLE-BASED TEMPERATURE DATA LOGGER



## Features

- 10 Year Battery Life
- 1 Second Reading Rate
- Multiple Start/Stop Function
- Ultra High Speed Download
- 1,000,000 Reading Storage Capacity
- Memory Wrap
- Battery Life Indicator
- Optional Password Protection
- Programmable High and Low Alarms
- N.I.S.T. Traceable
- Field Upgradeable

## Benefits

- Simple Setup and Installation
- Minimal Long-Term Maintenance
- Long-Term Field Deployment

## Applications

- Process Validation
- Dry Ice Shipments and Storage
- Oven Profiling
- HVAC
- Implement HACCP Programs
- General Purpose Temperature Recording

The TC101A is one of MadgeTech's newest data loggers. It is part of a new series of low cost, state-of-the-art data logging devices. MadgeTech has taken the lead in offering the most advanced, low cost, battery powered data loggers in the world today.

The TC101A offers a 10 year battery life, 1 second reading rate, a multiple start/stop function, ultra-high speed download capability, 1,000,000 reading storage capacity, optional memory wrap, battery life indicator, optional password protection, programmable high-low alarms and more. The TC101A is priced at \$149 each and can be delivered from stock now. Our research has shown that the TC101A is second to no other data logger when it comes to price and performance.

Using the MadgeTech Software, starting, stopping and downloading from the TC101A is simple and easy. Graphical, tabular and summary data is provided for analysis and data can be viewed in °C, °F, K or °R. The data can also be automatically exported to Excel® for further calculations.

As the leader in low power data logger technology, MadgeTech continuously improves its products and develops solutions to meet ever-changing challenges. The TC101A was designed with our customers in mind. MadgeTech offers free firmware upgrades for the life of the product so that data loggers already deployed in the field can grow with new technological developments. Units do not need to be returned to the factory for upgrades. The user can do this automatically from any PC.

## MADGETECH DATA LOGGER SOFTWARE

Key

- A Graph View
- B Tabular Data View
- C Statistics
- D Digital Calibration
- E Copy to Excel

The screenshot displays the MadgeTech software interface with several windows open. A main graph window (A) shows a temperature curve. A tabular data view window (B) shows a table of data points. A statistics window (C) shows summary statistics. A digital calibration window (D) shows device settings. A 'Report Properties' dialog box (E) is also visible.

Date	Time	Time Zone	Delta	40009
6/26/2012	2:13:37 PM	-04:00	-00:00:00	Thermocouple Temperature
6/26/2012	2:14:47 PM	-04:00	-00:00:00	
6/26/2012	2:15:57 PM	-04:00	-00:00:00	
6/26/2012	2:16:37 PM	-04:00	-00:00:00	
6/26/2012	2:17:37 PM	-04:00	-00:00:00	
6/26/2012	2:18:37 PM	-04:00	-00:00:00	
6/26/2012	2:19:37 PM	-04:00	-00:00:00	
6/26/2012	2:20:37 PM	-04:00	-00:00:00	
6/26/2012	2:21:37 PM	-04:00	-00:00:00	
6/26/2012	2:22:37 PM	-04:00	-00:00:00	
6/26/2012	2:23:37 PM	-04:00	-00:00:00	
6/26/2012	2:24:37 PM	-04:00	-00:01:00	
6/26/2012	2:25:37 PM	-04:00	-00:01:00	
6/26/2012	2:26:37 PM	-04:00	-00:01:00	
6/26/2012	2:27:37 PM	-04:00	-00:01:00	
6/26/2012	2:28:37 PM	-04:00	-00:01:00	
6/26/2012	2:29:37 PM	-04:00	-00:01:00	
6/26/2012	2:30:37 PM	-04:00	-00:01:00	
6/26/2012	2:31:37 PM	-04:00	-00:01:00	
6/26/2012	2:32:37 PM	-04:00	-00:01:00	
6/26/2012	2:33:37 PM	-04:00	-00:01:00	

- ### Software Features:
- Multiple graph overlay
  - Statistics
  - Digital calibration
  - Zoom in/ zoom out
  - Lethality equations (F<sub>0</sub>, PU)
  - Mean Kinetic Temperature
  - Full time zone support
  - Data annotation
  - Min./Max./Average lines
  - Data table view
  - Automatic report generation
  - Summary view
  - Multilingual

# TC101A SPECIFICATIONS\*

## Internal Channel

Temperature Range: -40°C to +80°C (-40°F to +176°F)

Temperature Resolution: 0.1°C (0.18°F)

Calibrated Accuracy: ±0.50°C

## Remote Channel

Thermocouple Connection: Female subminiature (SMP) (MP model)  
Pluggable screw terminal (TB model)  
Fixed screw terminal (ST model)

Cold Junction Compensation: Automatic based on internal channel

Max. Thermocouple Resistance: 100Ω

Thermocouple Type:	Range (°C)	Resolution	Accuracy
J	-210 to +760	0.1°C	±0.5°C
K	-270 to +1370	0.1°C	±0.5°C
T	-270 to +400	0.1°C	±0.5°C
E	-270 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	+50 to +1820	0.5°C	±2.0°C
N	-270 to +1300	0.1°C	±0.5°C

\* Thermocouple accuracy is specified with a 24 AWG

Reading Rate: 1 reading every second to 1 every 24 hours

Memory: 1,000,000 readings; software configurable memory wrap. 500,000 readings in multiple start/stop mode or trigger settings mode

Wrap Around: Yes

Start Modes:

- Immediate start
- Delay start up to 18 months
- Multiple pushbutton start/stop

Stop Modes:

- Manual through software
- Timed (specific date and time)

Multiple Start/Stop Mode: Start and stop the device multiple times without having to download data or communicate with a PC

Multiple Start/Stop Mode To start the device:

Activation: *Press and hold the pushbutton for 5 seconds, the green LED will flash during this time. The device has started logging.*

To stop the device:

*Press and hold the pushbutton for 5 seconds, the red LED will flash during this time. The device has stopped logging.*

Real Time Recording: The device may be used with PC to monitor and record data in real-time

Alarm: Alarm: Programmable high and low limits; alarm is activated when temperature reaches or exceeds sets limits.

Alarm Delay: A cumulative alarm delay may be set in which the device will activate the alarm (via LED) only when the device has recorded a user specified time duration of data.

Trigger Settings: High and Low limits may be set for the thermocouple channel. Once data meets or exceed sets limits, the device will record to memory. Bi-level start and stop triggers can also be programmed. Users can specify the number of readings to take after the device triggers.

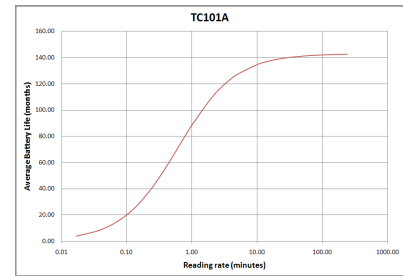
LED Functionality: Green LED blinks: 10 second rate to indicate logging, 15 second rate to indicate delay start mode

Red LED blinks: 10 second rate to indicate low battery and/or full memory, 1 second rate to indicate an alarm condition

Password Protection: An optional password may be programmed into the device to restrict access to configuration options. Data may be read out without the password.

Battery Type: 3.6V lithium battery included; user replaceable

Battery Life: 10 years typical at a 15 minute reading rate



Graph display of the device recording in a 25°C environment.

Data Format: Date and time stamped °C, °F, K, °R; μV, mV, V

Time Accuracy: ±1 minute/month (at 20°C, stand alone data logging)

Computer Interface: USB (interface cable required); 115,200 baud

Software: XP SP3/Vista/Windows 7

Operating Environment: -40°C to +80°C (-40°F to +176°F), 0 to 95% RH non-condensing

Dimensions: 1.4" x 2.2" x 0.6" (36mm x 56mm x 16mm)

Weight: 0.9 oz (24 g)

Approvals: CE

**BATTERY WARNING: WARNING: FIRE, EXPLOSION, AND SEVERE BURN HAZARD. DO NOT SHORT CIRCUIT, CHARGE, FORCE OVER DISCHARGE, DISASSEMBLE, CRUSH, PENETRATE OR INCINERATE. BATTERY MAY LEAK OR EXPLODE IF HEATED ABOVE 80°C (176°F).**

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

## ORDERING INFORMATION

MODEL	DESCRIPTION	PRICE (U.S.)
TC101A-MP	Thermocouple Data Logger, standard mini plugs	\$149.00
TC101A-ST	Thermocouple Data Logger, fixed screw terminals	\$149.00
TC101A-TB	Thermocouple Data Logger, pluggable screw terminals	\$149.00
IFC200	Software, Manual and USB interface cable	\$119.00
*NIST	N.I.S.T. Calibration Certificate	\$60.00
LTC-7PN	Replacement battery for TC101A	\$10.00

\*To order the product with the N.I.S.T. certificate add *-CERT* to the end of the part number and add \$60.00.

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

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Spectral Vibration