

Description	IRTC101A
Internal Channel Temperature Sensor	Semiconductor
Internal Channel Temperature Resolution	0.1 °C (0.018 °F)
Internal Channel Accuracy	±0.25 °C (±0.45 °F)
Remote Channel Temperature Sensor	Type K, ±2.0 °C
Remote Channel Temperature Range	Type K, 25 °C to 80 °C
Remote Channel Temperature Resolution	0.1 °C
Remote Channel Temperature Accuracy	±2.0 °C
Field of View	60 ° (1:1)
Minimum Spot Size	8mm (0.3 in)
Spectral Response	6.5 to 14 microns
Cold Jct. Compensation	Automatic
Channels	1 internal & 1 remote
Memory	500,000 readings 250,000 readings in multiple start/stop mode
Wrap Around	Yes
Reading Rate	1 reading every second up to 1 reading every 24 hours
LED Indicator	Red and Green
Required Interface Package	IFC200
Baud Rate	115,200
Typical Battery Life	10 years at a 15 minute reading rate
Operating Environment	-40 °C to +80 °C (-40 °F to +176 °F), 0 %RH to 95 %RH non-condensing
Material	ABS plastic
Dimensions	1.4 in x 2.2 in x 0.6 in (36 mm x 56 mm x 16 mm)
Weight	0.9 oz (24 g)
Approvals	CE Pending

### 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 subject to change.  
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**IRTC101A**  
Infrared Thermocouple Data Logger

## Product Notes

The IRTC101A is a thermocouple based data logger equipped with a Type K, infrared thermocouple. The thermocouple measures surface temperature of objects in the range of 25 °C to 80 °C. The device has a field of view of 60 ° with a minimum spot size of 8 mm. For best results, install the thermocouple so that it is as close to the surface area as possible. This will provide a more accurate temperature reading.

### LEDs

- Green LED blinks: 10 seconds to indicate logging and 15 seconds to indicate delay start mode
- Red LED blinks: 10 seconds to indicate low battery and/or memory and 1 second to indicate an alarm condition

### Thermocouple Type

To change the thermocouple type:

- In the **Connected Devices** panel, click the device desired.
- On the **Device** Tab, in the Information Group, click **Properties**. Or, right-click the device and select **Properties** in the context menu.
- On the **General** Tab, change the Thermocouple type in the drop down menu.
- Apply these changes, there will be a prompt to reset the device, select **yes**.

### 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.

### Multiple Start/Stop Mode Activation

To start device: 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.

### Alarm

Programmable high/low limits; alarm is activated when temperature reaches or exceeds set limits.

## Installation Guide

### Installing the Interface cable

- IFC200: Insert the device into a USB port. The drivers will install automatically.

### Installing the software

The Software can be downloaded from the MadgeTech website at the following link: [www.madgetech.com/software-download](http://www.madgetech.com/software-download). Follow the instructions provided in the Installation Wizard to install the MadgeTech Software

## Device Operation

### Connecting and Starting the data logger

- Once the software is installed and running, plug the interface cable into the data logger.
- Connect the USB end of the interface cable into an open USB port on the computer.
- The device will appear in the Connected Devices list, highlight the desired data logger.
- For most applications, select **“Custom Start”** from the menu bar and choose the desired start method, reading rate and other parameters appropriate for the data logging application and click **“Start”**. (**“Quick Start”** applies the most recent custom start options, **“Batch Start”** is used for managing multiple loggers at once, **“Real Time Start”** stores the dataset as it records while connected to the logger.)
- The status of the device will change to **“Running”**, **“Waiting to Start”** or **“Waiting to Manual Start”**, depending upon your start method.
- Disconnect the data logger from the interface cable and place it in the environment to measure.

*Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.*

### Downloading data from a data logger

- Connect the logger to the interface cable.
- Highlight the data logger in the Connected Devices list. Click **“Stop”** on the menu bar.
- Once the data logger is stopped, with the logger highlighted, click **“Download”**. You will be prompted to name your report.
- Downloading will offload and save all the recorded data to the PC.

## Device Maintenance

### Battery Replacement

Materials: **Small Phillips Head Screwdriver and a Replacement Battery (LTC-7PN)**

- Puncture the center of the back label with the screw driver and unscrew the enclosure.
- Remove the battery by pulling it perpendicular to the circuit board.
- Insert the new battery into the terminals and then screw the enclosure back together.

*Note: Be sure not to over tighten the screws or strip the threads.*

### Recalibration

The IRTC101A standard calibration is one point at 25 °C for the internal temperature sensor and 0 mV for the thermocouple.

*Prices and specifications subject to change. See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com). To send the devices back, visit [www.madgetech.com](http://www.madgetech.com), select Services then RMA Process.*