

## Tinytag Ultra 2 Temperature Logger with Integral Sensor and for Thermistor Probe (-40 to +85 °C/-40 to +125 °C)

### TGU-4510

#### Issue 9

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E&OE

Tinytag Ultra 2 data loggers are ideally suited to monitor interior applications where there is little or no moisture.

Tinytag Ultra 2 data loggers have a high reading accuracy and resolution, large memories, a fast offload speed and a low battery monitor.

The TGU-4510 has an integral sensor and a connection for an external probe (not included) that makes the unit ideal for comparing ambient and process conditions.

#### Popular Applications

- Office and housing monitoring
- Pharmaceutical manufacture
- Dry food storage
- Museum display and repository
- Incubators



#### Features

- Dual channel temperature recorder
- 32,000 reading capacity
- High accuracy
- High reading resolution
- Fast data offload
- Splash-proof case
- Low battery monitor
- User-replaceable battery





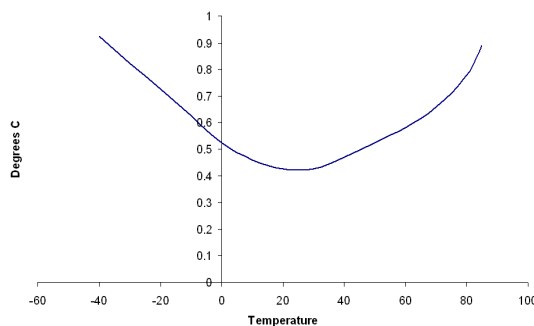
### Features

<b>Total Reading Capacity</b>	32,000 readings
<b>Memory type</b>	Non Volatile
<b>Trigger Start</b>	Magnetic Switch (from SN 602211)
<b>Delayed Start</b>	Relative / Absolute (up to 45 days)
<b>Stop Options</b>	When full After n Readings Never (overwrite oldest data)
<b>Reading Types</b>	Actual, Min, Max
<b>Logging Interval</b>	1 sec to 10 days
<b>Offload</b>	While stopped or when logging in minutes mode
<b>Alarms</b>	2 fully programmable; latchable

### Reading Specification

#### Internal Temperature

<b>Reading Range</b>	-40 °C to +85 °C (-40 °F to +185 °F)
<b>Sensor Type</b>	10K NTC Thermistor (Internally mounted)
<b>Response Time</b>	20 mins to 90% FSD in moving air
<b>Reading Resolution</b>	0.01 °C or better



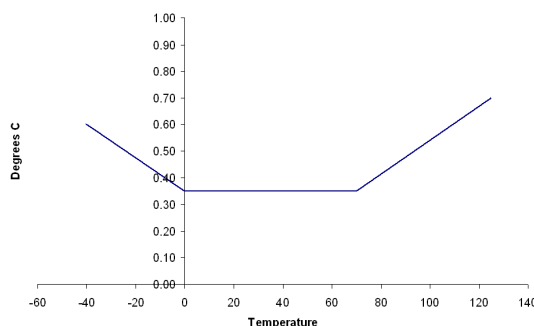
#### Accuracy

#### External Temperature

<b>Reading Range</b>	-40 °C to +125 °C (-40 °F to +257 °F)
<b>Sensor Type</b>	10K NTC Thermistor (External probe)
<b>Reading Resolution</b>	0.02 °C or better
<b>Temperature Stability</b>	±0.01 °C/°C change from 25 °C

#### Accuracy

The graph below is the accuracy of the TGU-4510 when used with a PB-5001, 5002 or 5003 probe.



### Physical Specification

<b>IP Rating</b>	IP54 splash proof (see notes)
<b>Operational Range*</b>	-40 °C to +85 °C (-40 °F to +185 °F)
<b>Case Dimensions</b>	
<b>Height</b>	72mm / 2.83"
<b>Width</b>	60mm / 2.36"
<b>Depth</b>	33mm / 1.30"
<b>Weight</b>	55g / 1.94oz

\*The Operational Range indicates the physical limits to which the unit can be exposed, not the reading range over which it will record.

### Notes

<b>Battery Type</b>	Tekcell SBAA02P; SAFT LS14250 or LST14250
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The logger will operate with other 1/2AA 3.6V Lithium (Li-SOCl<sub>2</sub>) batteries but performance cannot be guaranteed.

<b>Replacement Interval</b>	Annually
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Before replacing the battery the data logger must be stopped.

When replacing the battery, wait at least one minute after removing the old battery before fitting the new one.

Data stored on the logger will be retained after a battery is replaced.

If used at low temperatures the data logger should be allowed to warm to room temperature before it is opened to avoid condensation forming inside the unit.

The IP54 rating is valid only when the unit's connector cap and probe are fitted and the unit is orientated with it's hanging tab uppermost.

#### Trigger Start

The trigger start option allows a unit to be set up as required and then started at a later time with a magnet. The position of the trigger start switch is indicated by the ••• marking on the back of the logger. When the "Wait until trigger event" option is selected in the Tinytag Explorer software the green LED on the unit will flash once every eight seconds to indicate that it is waiting to start. When a magnet is held next to the ••• marking, the green LED will light to indicate the switch is closed. After the magnet has been removed, the green LED will flash every four seconds to indicate that the logger is recording.

### Calibration

This unit is configured to meet Gemini's quoted specification during its manufacture.

We recommend that the calibration of this unit should be checked annually against a calibrated reference meter.

A UKAS traceable certificate of calibration can be supplied for an additional charge either at the point of purchase, or if the unit is returned for a service calibration.



### Approvals

This equipment complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause any harmful interference, and (2) the device must accept any interference received, including interference that may cause undesired operation.

Gemini Data Loggers (UK) Ltd. operates Quality and Environmental Management Systems which conform to ISO 9001 and ISO 14001. The scope of these systems covers the design, manufacture and servicing of data logging and associated equipment, including software.



### Required and Related Products

To use this data logger you will also require a probe:

PB-5001-1M5/3M/5M: Standard Thermistor Probe or  
PB-5002-1M5/3M/5M: Fast Response Thermistor Probe or  
PB-5003-1M5/3M/5M: Surface Thermistor Probe

(Other types of probes are available, please see [www.tinytag.info](http://www.tinytag.info) for further details).

One of the following pieces of software:

SWCD-0040: Tinytag Explorer software or  
SW-0500: Easyview Pro software

and a

CAB-0007-USB: Tinytag Ultra/Plus/View USB Download Cable

#### Further related products:

CAB-0007: Tinytag Ultra/Plus/View Serial Download Cable  
SER-9500: Tinytag Data Logger Service Kit  
ACS-6000: Trigger Start Magnet