

## Tinytag Ultra 2 Dual Channel Temperature/Relative Humidity (-25 to +85 °C/0 to 95% RH)

### TGU-4500

#### Issue 5

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E&OE

The 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-4500 is a self contained temperature and humidity recorder.

#### Popular Applications

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



#### Features

- Temperature and relative humidity recorder
- 32,000 reading capacity
- High accuracy
- High reading resolution
- Fast data offload
- Splash-proof case
- Low battery monitor
- User-replaceable battery





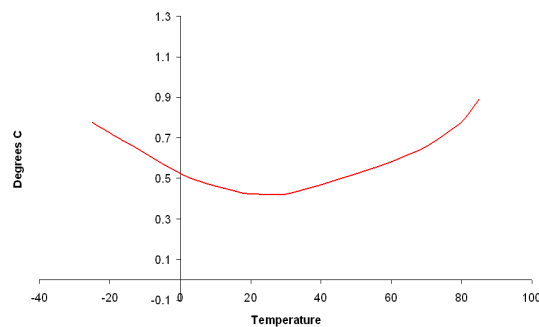
### Features

<b>Total Reading Capacity</b>	32,000 readings
<b>Memory type</b>	Non Volatile
<b>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; latching

### Reading Specification

#### Temperature

<b>Reading Range</b>	-25°C to +85°C (-13°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
<b>Accuracy</b>	

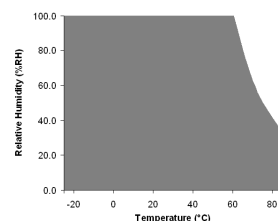


#### Relative Humidity

<b>Reading Range</b>	0% to 95% RH
<b>Sensor Type</b>	Capacitive
<b>Accuracy</b>	±3.0% at 25 °C / 77 °F
<b>Reading Resolution</b>	Better than 0.3% RH
<b>Sensor Location</b>	Externally mounted
<b>Response Time</b>	10 seconds to 90%

#### RH Sensor Working Range

The working range for the RH sensor is shown in terms of relative humidity / temperature limits.



### Physical Specification

<b>IP Rating</b>	IP53 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>	SAFT LS14250 or LST14250; Tekcell SBAA02P
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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.

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 IP53 rating is valid only when the unit's connector cap is fitted and the unit is orientated with its hanging tab uppermost.

If moisture forms on the unit's RH sensor readings will become unpredictable. Once the sensor has dried out, and provided no residue is left behind, the unit should return to normal reading within 30 minutes.

Any dust or residue that is allowed to build up on the RH sensor will affect the unit's reading accuracy.

The sensor may be cleaned with de-ionised water or pure isopropanol, but not with abrasive detergents, as scratches or residue will affect the accuracy.

The RH sensor will resist small amounts of the following chemicals: formaldehyde, ammonia, carbon monoxide, sulphur dioxide, ethylene oxide, hydrogen chloride, hydrogen fluoride, hydrogen peroxide, nitrogen dioxide, methyl chloride, chlorine, freon, methanol, ethanol, isopropanol and ozone. It also offers resistance to ultraviolet rays.

Salt solutions may cause permanent damage as crystals forming within the porous layers affect moisture levels there.

### Calibration

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

We recommend that the relative humidity channel should be checked once every six months, and the temperature channel 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.

This data logger is approved to EN61326:1998 with any standard leads supplied.

Gemini Data Loggers (UK) Ltd. operates a Quality Management System which conforms to BS EN ISO 9001:2000. The scope of the system covers the manufacture, design and supply of data loggers and their associated software, accessories and services.



### Required and Related Products

To use this data logger you will also require:

SWCD-0040: Tinytag Explorer software (version 4.2 or above recommended).

and a

CAB-0007: Tinytag PC Serial Download Cable or a  
CAB-0007-USB: Tinytag USB Download Cable

#### Further related products:

SER-9520: Tinytag Ultra Service Kit