

## Tinytag Plus 2 Dual Channel Temperature/Relative Humidity (-25 to +85°C/0 to 100% RH)

TGP-4500

The Tinytag Plus 2 range of data loggers have a high reading resolution and accuracy and are housed in robust, waterproof (IP68 rated) cases that are designed for use in a wide range of outdoor and industrial applications.

The TGP-4500 is a self contained temperature and relative humidity data logger. This unit features a coated RH sensor that has good resistance to moisture and condensation, ensuring measurement reliability.

### Popular Applications

- Environmental monitoring
- Glass house and poly tunnel agriculture
- Food processing and storage
- Pharmaceutical manufacture
- Logistics monitoring
- Conservation Projects



### Features

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





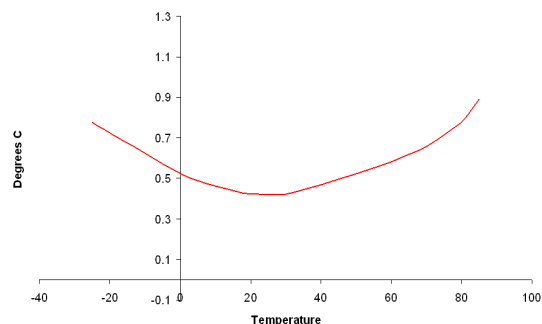
## Features

|                               |  |
|-------------------------------|--|
| <b>Total Reading Capacity</b> | 32,000 readings  |
| <b>Memory type</b>            | Non Volatile   |
| <b>Trigger Start</b>          | Magnetic Switch  |
| <b>Delayed Start</b>          | Relative / Absolute<br>(up to 45 days)                         |
| <b>Stop Options</b>           | When full<br>After n Readings<br>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<br>(Internally mounted) |
| <b>Response Time</b>      | 25 mins to 90% FSD in moving air           |
| <b>Reading Resolution</b> | 0.01°C or better                           |
| <b>Accuracy</b>           |  |



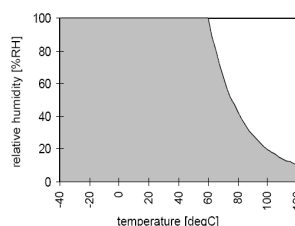
### Relative Humidity

|                           |  |
|---------------------------|--|
| <b>Reading Range</b>      | 0% to 100% RH  |
| <b>Sensor Type</b>        | Capacitive   |
| <b>Accuracy</b>           | ±3.0% RH at 25°C / 77°F                                      |
| <b>Reading Resolution</b> | Better than 0.3% RH  |
| <b>Sensor Location</b>    | Externally mounted   |
| <b>Response Time</b>      | 40 seconds to 90% FSD (current data loggers, from SN 613165) |

### RH Sensor Working Range

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

Although the sensor will not fail beyond these limits, the accuracy will deteriorate.



## Physical Specification

|                           |                                  |
|---------------------------|----------------------------------|
| <b>IP Rating</b>          | IP68 water-proof (see notes)     |
| <b>Operational Range*</b> | -40°C to +85°C (-40°F to +185°F) |
| <b>Case Dimensions</b>    |                                  |
| <b>Height</b>             | 34mm / 1.34"                     |
| <b>Width</b>              | 57mm / 2.25"                     |
| <b>Depth</b>              | 80mm / 3.15"                     |
| <b>Weight</b>             | 110g / 3.9oz                     |

\*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;<br>Tekcell SBAA02P |
|---------------------|--|

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 |
|-----------------------------|----------|

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 IP68 rating is valid only when the unit's connector cap is fitted and is valid to a depth of 15m (50ft). The IP68 rating does not apply to the unit's RH sensor.

The coated sensor used on this unit (current product, SN 613165 and above) provides good protection from moisture and condensation, but in some cases - where the sensor becomes saturated - readings may 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, salts 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 but not with pure isopropanol or abrasive detergents, as these may damage the coating on the sensor and effect its 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.

The position of the unit's trigger start switch is indicated by the ••• label 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, indicating that the unit is waiting to log. When a magnet is held next to the label, the green LED will light until the magnet is removed to show that 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 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 ENAC 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 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 require 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