

Tinytag Radio Temperature/Relative Humidity Logger (-40 to +85°C and 0 to 100%RH)

TGRF-3500

Issue 2

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E&OE



The TGRF-3500 is a radio logger for measuring both temperature and relative humidity.

This unit has been designed for easy installation and will automatically find its place in a Tinytag Radio System.

The unit works with other devices in a system to transmit logged data to a receiver and can store data locally in the event of radio contact being temporarily lost.

The unit is housed in a rugged, waterproof (IP67) case and is suitable for use in many different applications.

Popular Applications

- Chill Chain Monitoring
- Warehouse and Building Monitoring
- Environmental monitoring

Features

- Wireless temperature and humidity monitoring
- Self-configuring, for easy installation
- 200m range, typical (line of sight)
- User-programmable logging interval
- Local cache can store 2 weeks of readings
- User-programmable alarms
- Waterproof case
- Low battery warning
- User-replaceable battery





Variants

Part Number	Region	Radio Frequency	Battery Type ¹	Battery Life ²	Operational Range ³	Weight
TGRF-3500-AK	EU	869.88MHz	2 x Alkaline C (LR14): Duracell Procell MN1400 or Duracell Ultra MX1400	12 months, typical	-18 °C to +55 °C (-0.4 °F to +131 °F)	410g / 14.46oz
TGRF-3500-BK	AUS	917.8MHz				
TGRF-3500-AL	EU	869.88MHz	Lithium C 3.6V: Tekcell SB-C02, SAFT LS26500 or Tadiran SL-2770	24 months, typical	-40 °C to +85 °C (-40 °F to +185 °F)	305g / 10.76oz
TGRF-3500-BL	AUS	917.8MHz				

Features

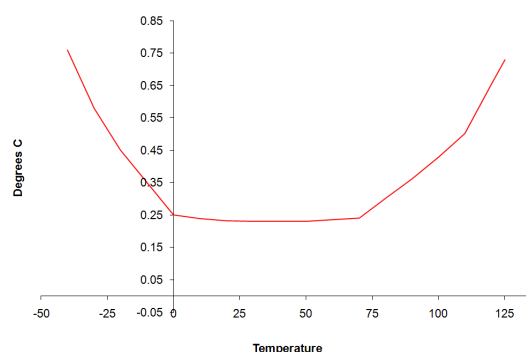
Radio Power	<3mW
Radio Range	200m, Typical (Line of sight).
Radio Licence	No Licence Required
Memory type	Non Volatile
Logging Interval	2 minutes to 10 days
Offline Reading Capacity⁴	Two Weeks, at a Typical 10 Minute Logging Interval (see notes)
Alarms	2 Programmable Alarms per Channel
Low Battery Monitor	Software Warning ⁵ and LED indicator on the unit.

Reading Specification (Temperature)

With the sensor plugged directly into the data logger the unit is limited to the operational range listed in the table above.

Reading Range	-40 to +125 °C
Sensor Type	10K NTC Thermistor (External probe)
Response Time	80s to 90% FSD in moving air
Reading Resolution	Better than 0.2 °C (-40 to +125 °C) Better than 0.05 °C (-4 °C to 85 °C)
Temperature Stability	0.002 °C/°C

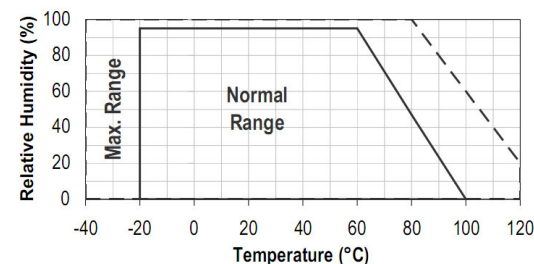
Reading Accuracy



Reading Specification (RH)

Reading Range	0% to 100%RH (see below)
Accuracy	±3.0% RH (over normal operating range, see below)

The normal operating range for the humidity sensor is -20 to +60 °C, 0 to 95% humidity (see below).



Long term exposure to conditions outside this range may result in a temporary drift of up to +3% RH after 60 hours.

Once within the normal range again it will return to the calibrated state.

Reading Resolution	0.04% RH
Sensor Location	External probe
Response Time	16 seconds* to 90% FSD in moving air
Stability	<1%/year typical

*The thermal response of humidity measurement is 2.5 minutes.

Physical Specification

IP Rating	IP67 waterproof (see notes)
Case Dimensions	
Height (inc. Aerial)	140mm / 5.51"
Length (inc. probe)	210mm / 8.27"
Width	80mm / 3.15"



Notes

¹The logger will operate with equivalent battery types, but performance cannot be guaranteed.

²Battery life is dependent on the logging interval set, the number of loggers in a network and the temperature of the logger. The above figure is quoted for a typical 10 minute logging interval in a network containing 25 loggers or less operating at 25 °C.

³The Operational Range indicates the physical limits to which the unit can be exposed.

⁴The Offline Capacity of the logger is an indication of how much data the unit can store when it is unable to communicate with a receiver.

⁵A low battery warning will be displayed in the Tinytag Explorer software when the unit's battery needs replacing.

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

Batteries should be replaced in pairs (where appropriate).

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 IP67 rating does not apply to the unit's RH sensor.

If moisture forms on the unit's RH sensor readings will become unpredictable.

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 compressed air.

Calibration

Loggers meet Gemini's quoted specification at the time of 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

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

The radio system complies with the R&TTE Directive (1999/5/EC), EN 300 220 and EN 301 489-3.



Required & Related Products

This data logger is designed to be used as a part of a Tinytag Wireless Data Logging System.

For further information on this system, and the additional equipment you will require, please see the Tinytag Wireless Data Logging Systems brochure.

Related Products:

CAB-0025-XM: Sensor extension cable (maximum length 10m)