Gemini DATA LOGGERS

Tinytag

DATA SHEET

Tinytag Plus Intrinsically Safe Dual Channel Temperature/ Relative Humidity (-40 to +85°C/0 to 100% RH)

TGIS-1580

Issue 5
11th January 2006
E&OE

The TGIS-1580 Intrinsically Safe Tinytag from Gemini is an ATEX certified data logger for use in hazardous areas. The unit is robust and self contained, with a reputation for reliability.

This model is battery powered and measures both temperature and humidity using built-in sensors, providing cost effective environmental monitoring ideal for inaccessible locations.

Features include waterproof casing (rated IP68), two user-programmable alarms and multiple start/stop options. Data recorded by the TGIS-1580 is downloaded to PC via a cable; no expensive base station is required.

Gemini's Tinytag Explorer software provides a powerful, easy to use interface with the loggers, enabling visualisation of recorded data and the ability to set logging parameters.

Typical Applications

- Gas/Petroleum installation condition and process monitoring
- Chemical manufacture and storage
- Weapons lifing and storage
- Condition monitoring during the transportation of hazardous materials
- Chemical sterilisation
- Paint shop temperature and humidity monitoring

Features

- ATEX certified temperature and relative humidity recorder

II 1 G

EEx ia IIC T4 (Ta = -30° to 40°C)
EEx ia IIC T3 (Ta = -30° to 75°C)

Certificate: Sira 03ATEX2325X

- 32,000 reading capacity
- Low cost cable download
- 2 user-programmable alarms
- Delayed and trigger-start options
- 3 stop options
- Antistatic, robust, waterproof case
- User-replaceable battery






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Features

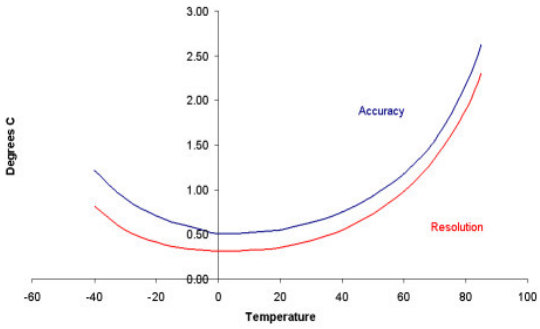
Total Reading Capacity	32,000 readings
Memory type	Non Volatile
Trigger Start	Magnetic Switch
Delayed Start	Relative / Absolute (up to 45 days)
Stop Options	When full After n Readings Never (overwrite oldest data)
Reading Types	Actual, Min, Max
Logging Interval	1 sec to 10 days
Offload	While stopped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

Reading Specification

Temperature

Reading Range	-40°C to +85°C (-40°F to +185°F)
Sensor Type	10K NTC Thermistor (Internally mounted)
Response Time	25 min to 90% FSD in air

Resolution and Accuracy

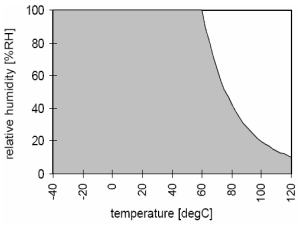


Relative Humidity

Reading Range	0% to 100% RH
Sensor Type	Capacitive
Accuracy	±3.0% at 25°C / 77°F
Reading Resolution	Typically 0.5%RH
Sensor Location	External
Response Time	10 seconds to 90%

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

IP Rating	IP68 Waterproof (see notes)
Operational Range*	-40°C to +85°C (-40°F to +185°F)
Case Dimensions	
Height	34mm / 1.34"
Width	57mm / 2.25"
Depth	80mm / 3.15"
Weight	100g / 3.5oz

*The Operational Range indicates the physical limits to which the unit can be exposed in a non IS rated area.
The unit's IS certification is valid only between –30°C and +75°C (for further information please see the Approvals section of this data sheet).

Notes

Battery Type	SAFT LS14250 or LST14250 3.6v ½AA Lithium Cell*
Replacement Interval	Every 2 years

*To comply with the unit's IS certification one of these two types of battery must be used in this logger.

Batteries should be replaced in a non-hazardous area.

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 data loggers should be allowed to warm to room temperature before they are opened to avoid condensation forming inside the unit.

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

The logger is housed in a static-dissipative case and is not capable of causing ignition due to electrostatic discharge. Surface resistivity is less than 1 x 10^9 ohms/square.

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 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.

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Calibration

This unit is configured to meet Gemini's quoted 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

TINYTAG Intrinsically Safe data loggers are certified for use in hazardous areas to the following standard:

II 1 G

EEx ia IIC T4 (Ta = -30° to 40°C)
EEx ia IIC T3 (Ta = -30° to 75°C)

Certificate: Sira 03ATEX2325X

The loggers may be used in zones 0, 1 & 2 with flammable gases and vapours with apparatus groups IIA, IIB & IIC and with temperature classes T1, T2, T3 (up to 75°C ambient) and T4 (up to 40°C ambient).

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 product is manufactured by Gemini Data Loggers (UK) Ltd to BS EN ISO9001:2000 (Certificate No. 6134) and is approved to EN61326:1997 with any standard leads supplied.

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Required and Related Products

To use this data logger you will also require:

SWCD-0040: Tinytag Explorer software
or
SW-1500: Easyview Light software
or
SW-0500: Easyview Pro software

and a

CAB-0007: Tinytag PC Serial Download Cable

Further related products:

CAB-USB: USB to Serial Converter
ACS-6000: Trigger Start Magnet
SER-9530: Tinytag Plus/IS Service Kit

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