

Tinytag Plus LAN Single Input Voltage Data Logger



- Ethernet connectivity (communicates across a LAN)
- Voltage monitoring
- User programmable audible & visual alarm
- Alarm output, to trigger external device
- Power over Ethernet (PoE) with battery back-up
- Waterproof case

The TE-4704 is a voltage data logger that plugs directly into a network point and communicates across a LAN.

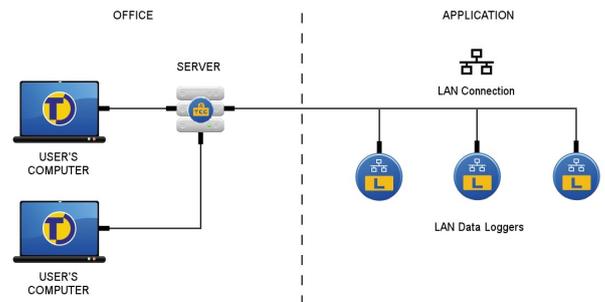
The logger can be managed as a standalone logger, in conjunction with the standard version of Tinytag Explorer, or as part of a network of loggers, using Tinytag Connect software.

The logger records data at user-defined logging intervals and can be programmed to give alarm alerts, both audible and visual, in the event of a problem. The logger also has an alarm output that changes state when alarms are active.

Standalone

When used as a standalone device, the logger connects to a standard version of Tinytag Explorer across a LAN and is downloaded and configured directly.

Tinytag Connect



When used as part of a Tinytag Connect system, the logger transmits data to a Windows service that runs the system, called the Connect Gateway. This data is then viewed, and loggers configured, using the Connect version of Tinytag Explorer.

Multiple users can access the Connect system simultaneously.

If a logger cannot communicate with the system for any reason, data will be recorded locally until communications are restored, ensuring no data is lost.

The Connect system can also send e-mail warnings when alarm limits are exceeded.

Working With the Data

Using Tinytag Explorer, data recorded by the logger can be viewed as a graph or as a table of readings. There are also summary views containing information about the recording and a daily min/max view.

Data from multiple devices recording at the same time can be combined into a single graph.

Graphical data can be exported from the software as an image, for use in report writing or presentations, or as a data table, for further analysis in third-party spreadsheet and data base programs.

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Data Logging

This data logger will turn on and start recording as soon as it is plugged into a Power over Ethernet (PoE) supply (it can also be turned on before that by pressing and holding the logger's Mute button briefly) .

| | |
|----------------------------------|---|
| Logging Interval | 2 minutes to 10 days |
| Default Logging Interval | 10 minutes |
| Logging/Off-line Capacity | 361 days typical, at a 10 minute logging interval |

The logging/off-line capacity for a data logger, for any given logging interval, is stated at the bottom of the configuration page in Tinytag Explorer when the logger is programmed.

Standalone Mode

If being used as a standalone device, the logger should be launched using Tinytag Explorer to ensure its clock is set correctly.

Reading Specification

Temperature

| | |
|--------------------------|-------------------------|
| Reading Range | 0 to 25V DC |
| Logger Accuracy | ±0.2% of reading ±0.02V |
| Logger Resolution | Better than 1mV |
| Maximum Input | 26V |
| Input Impedance | 1MΩ |

Warnings

- This logger should only be connected to the inputs specified above, otherwise damage to the logger may occur.
- Do not connect to voltages greater than 25V relative to earth or isolated supplies larger than 25V.



Physical Specification

IP Rating IP67*

*Applies only if the supplied waterproof shroud for the Ethernet connection is fitted.

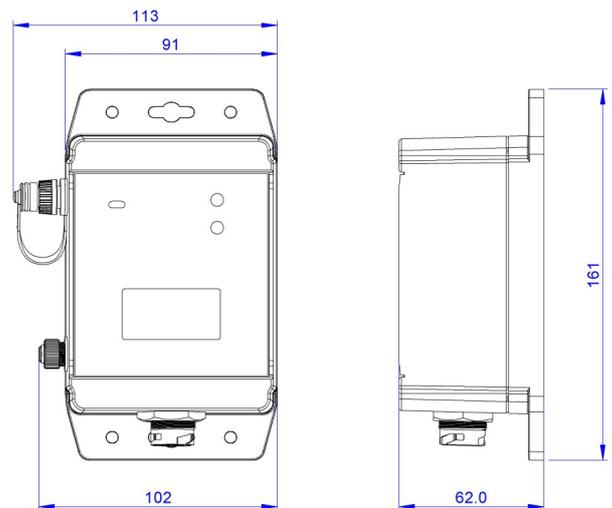
This data logger is for indoor use only. The waterproofing provided by the connector shroud is to protect against ingress in indoor applications when condensation or liquids may be present.

Operational Range** -20°C to +55°C

Case Dimensions

| | |
|----------------------|---------------|
| Length/Height | 161mm / 6.34" |
| Width | 113mm / 4.45" |
| Depth | 62mm / 2.44" |
| Weight | 394g / 13.9oz |

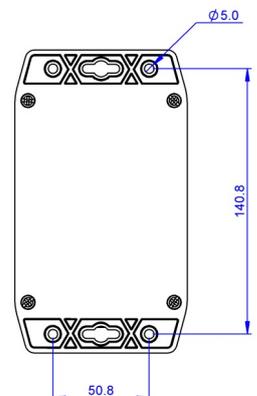
**The Operational Range indicates the physical limits to which the unit can be exposed.



Mounting Instructions

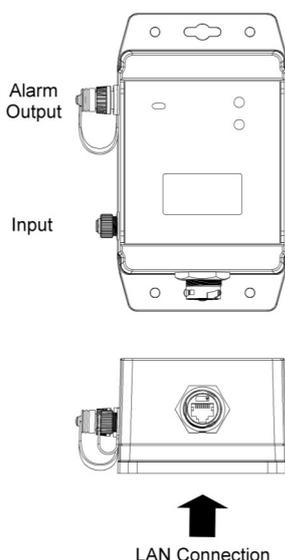
The logger can be wall mounted or placed on its back on a flat surface, such as a shelf.

The logger's back-plate has mounting holes, as shown.



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Connections



This logger can be used with a CAB-3239 Tinytag Voltage/XP Input Lead (supplied) or an ACS-9703 5-Pin Plug.

The connection details for the cable and plug are as follows:

| CAB-3239 | 5-Pin Plug | Function |
|----------|------------|---------------|
| Red | A | Not Connected |
| Green | B | Not Connected |
| White | C | Sense Line |
| Black | D | Common/0V |
| Yellow | E | Signal Input |

The Sense line is a signal line that changes state when a reading is taken.

The line goes from 0v to +3.3V whilst a reading is being taken (the line goes back to 0V when the reading cycle is complete).

The line has an impedance of 100K.

The Sense line does not need to be connected for the data logger to record correctly.

Alarms

LAN data loggers can be programmed with alarm limits to warn when a property has gone out of specification.

| | |
|-------------------------|---|
| Alarms | 2 fully programmable, latching alarms |
| Alarm Delay | 1 second to 10 days |
| Alarm Indicators | Visual (LED) & audible (sounder) |
| Alarm Output | 3-pin, powered output that changes state when alarms are active (see below) |

Tinytag Connect

When used as part of a Tinytag Connect system, an on-screen alarm indication is also shown in the Tinytag Explorer Connect software.

E-mail warnings can be sent from the Tinytag Connect system when alarm limits are breached, and these in turn can be used to send SMS messages using third-party messaging services.

External Alarm Output

The alarm output has a signal line that changes state when alarms are active and it can also supply power to an external device.

Connection Information

An output cable (part number CAB-0041, supplied separately) is used to connect the logger to an external device.

The wiring connections are as follows:

| Colour | Connection |
|--------|------------|
| Brown | Power |
| Green | Ground |
| White | Signal |

Both the Power (brown) and Signal (white) outputs are protected by a 350mA self-resetting fuse.

Signal Specification

This is an open-drain output that is pulled to Ground when an alarm is active (otherwise it is open-circuit). This output will continue to change state, in the event of an alarm, should the PoE supply to the logger fail.

Note that muting the internal alarm sounder, by pressing the mute button on the front of the logger, will also turn off the output. If required, the connection should be held on (latched) by external equipment until it is explicitly acknowledged.

Power Specification

The power output is regulated at 11.5V \pm 0.5V from the PoE supply. The output voltage will therefore turn off if the PoE supply fails.

Warnings

- The alarm cable and connector must not be connected to any voltage more than 50V away from earth potential, including mains voltages
- Maximum current through any connection: 200mA
- Maximum voltage on the Signal output (relative to Ground): 30V

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Power Information

This logger is a PoE (Power over Ethernet) device that is powered from its Ethernet connection (a PoE injector is supplied).

In the event of a failure of the PoE supply, the logger has a battery back-up that will keep it recording (communications will be suspended until power is restored).

Back-up Battery Power

Battery Type 2 x Duracell Industrial ID1500
AA (LR6) 1.5V (supplied)

The logger will operate with other AA cell batteries but performance cannot be guaranteed.

When the logger's back-up batteries start to run flat, the LED on the front of the logger will flash red. If being used as part of a Tinytag Connect system, a low battery warning will be displayed in the Tinytag Explorer Connect software. The low battery warnings will start to show when the logger has approximately two weeks of battery power remaining.

Before replacing batteries the logger must be disconnected from the LAN and turned off.

Alkaline batteries should always be replaced in pairs.

Data stored in the logger will be retained after its batteries are replaced.

LED Flash Patterns

Ethernet Radio Receivers and LAN data loggers have two status LEDs; one to show the status of the logger's Ethernet connection (yellow/blue) and the second to show the status of the unit (green/red).

| Action | LED | Status/Operation |
|---|---|--|
| n/a | No Indicators | Device is powered off |
| n/a | Red flash every 4 seconds | The device is powered on and has a problem. Either: a) Battery is low or b) An alarm indicator is signalled. Check the nature of the problem using Tinytag Explorer. |
| n/a | Green flash every 4 seconds | The device is powered on, and does not have any problems. |
| Press and briefly hold the mute switch. | Green indicator shows for one second. It then briefly flashes green then red. | The device has been switched on. |
| Press and hold the mute switch for 3 seconds. | Red indicator shows for one second. | The device has been switched off. |
| n/a | Yellow indicator on constantly | The device is being powered from its Ethernet connection, but no communications have been established. |
| n/a | Blue (flickering) | Ethernet communications are established and on-going |

Note that the yellow and blue LEDs cannot be on at the same time. If the blue LED is on (or flickering) then PoE power must be available.

Calibration

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

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

A 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.

Warranty

This product carries a manufacturing defects warranty of 12 months from the date of purchase. Units returned under warranty will be repaired or replaced at the manufacturer's discretion. This warranty does not cover mishandling, modification or battery replacement and is subject to our standard Terms and Conditions of Sale, a copy of which can be found at www.tinytag.info.

Approvals

Gemini Data Loggers (UK) Limited hereby declares that this data logger is in compliance with the essential requirements and other relevant provisions of EMC directive 2014/30/EU and RoHS directive 2011/65/EU. A copy of the declaration of conformity is available upon request.

This logger also conforms to the following EMC standards EN 61326-1:2013, FCC/CFR 47:Part 15:2016 & Canadian Standard ICES-003:Issue 6.

This logger also complies with (RJ45) 10/100Mb Base-T for Ethernet connectivity and PoE standard IEEE 802.3af.

Gemini Data Loggers (UK) Ltd. operates a Business Management System which conforms to ISO 9001 and ISO 14001.



Required and Related Products

Required Parts

Two Ethernet cables (not supplied) are required to connect this receiver to a LAN.

This logger is a PoE device and is supplied with a PoE injector as standard. If the logger is being used on a powered network, or a number of loggers are being connected to a powered hub, this product can be supplied without the injector.

When used as a standalone device, a copy of the following software is required:

SWCD-0040 Tinytag Explorer

When used as part of a Tinytag Connect system, a copy of the following software is required:

SWCD-0080 Tinytag Explorer Connect

Connections

You will also require one of the following:

CAB-3239 Tinytag Voltage Input Lead (supplied) or an **ACS-9703** 5-Pin Plug

Further Related Products

ACS-0040 RJ45 waterproof (IP67) Shroud (supplied)
ACS-0041 PoE Injector (supplied)
CAB-0041 Plus LAN alarm output lead