

Applies to: USB cable and inductive pad interface loggers

Introduction

This document is a guide to fault finding and trouble-shooting common issues encountered when using USB cable and inductive pad interfaced data loggers. Subjects covered include communication problems, reading/accuracy issues and software error messages.

Communication Problems

Data logger communication problems usually fall into three categories:

- Problems with the computer/software installation
- Problems with the cable/pad being used to connect to the logger
- Problems with the logger itself

The most common problem is USB cable/pad drivers not installing correctly or out of date software.



Software and Driver Problems

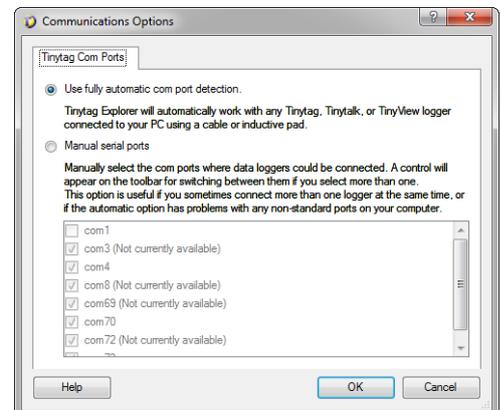
If a data logger is not connecting to a computer, the first thing to check is whether the Tinytag Explorer software can see the USB cable or pad being used to communicate with the data logger.

Auto-Detection Not Selected

Go to **Options** and **Communication Options** in Tinytag Explorer. There should be a **Use fully automatic com port detection** option, if this is not checked select this option, click **OK** and then try to connect to the logger again.

If this option isn't present the software is an older version and should be upgraded - free of charge - to the current version as described in the Useful Information section at the end of this document.

Following a software upgrade, go to Communication Options and select the auto-detect option, as this is not enabled automatically when upgrading.



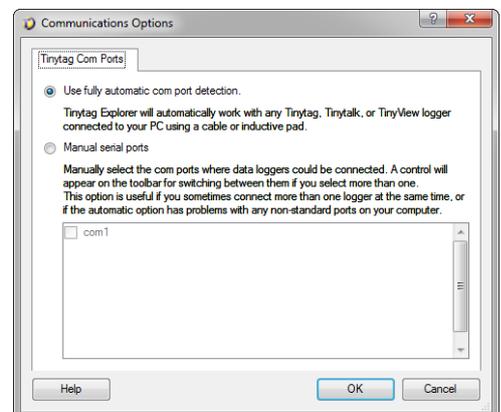
USB Drivers Not Installed

If the auto-detection option is selected and the logger won't communicate, check to see if there are any com ports listed in the greyed-out **Manual serial ports** section.

If there are no ports listed, or only com1 (which is usually reserved for a serial port, even if there isn't one fitted to the computer), then it is likely that the USB drivers for the cable or pad have not installed.

For instructions on how to install USB drivers manually, please see:

<http://www.gemindataloggers.com/support/listing/usb-drivers>



Communication Problems

USB Manual Driver Installation Fails

If the manual driver installation fails, with a device failing to install drivers correctly or the option to upgrade the drivers not listing in the Device Manager, unplugging the USB cable and reinserting it can sometimes get Windows to complete the installation.

Also, if the installation seems to run through okay, but the cable does not list as expected, resetting the computer will often complete the installation.

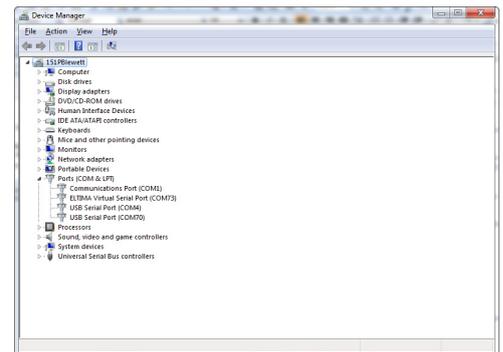
USB Device Listing

If a number of ports are shown, to determine whether the cable or pad being used is one of them, unplug the device and then close and re-open the Communications Options dialogue. If the cable has installed correctly, one of the options should disappear from the list and reappear when the cable or pad is plugged back in and, again, close and open Communications Options.

If a cable or pad appears to be installed and the auto-detection option isn't allowing communications with the logger, select the Manual serial port option and the cable or pad directly and try again.

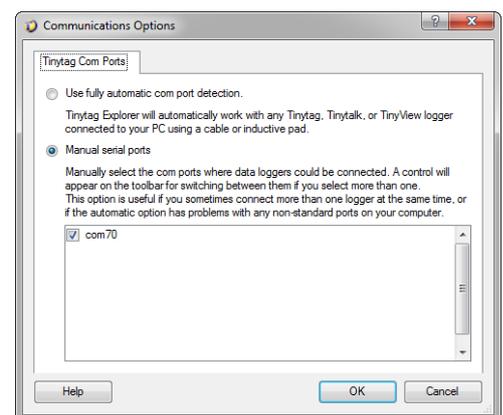
High Com Port Number/Lots of Com Ports

If a USB cable or pad installs correctly, it will show in the **Ports (COM and LPT)** section of the computer's Device Manager as a USB Serial Port, followed by the com port number it has been assigned.



If the cable or pad is listed in the Device Manager, or Tinytag Explorer, with a high port number (above Com 25), the auto-detect option will not work, so the port should be selected directly from the **Manual serial ports** section.

Similarly, if there are a lot of non-Tinytag devices that are listing in the Device Manager, and the USB cable or pad has installed with a number above these other devices, a manual connection should also be tried.



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Communication Problems

Cable/Pad Problems

If the USB cable or pad appears to be installed correctly and the logger still won't connect, then the fault is most likely to be in the logger or the cable/pad.

If multiple loggers are being used with one cable, and some connect when others do not, then the problem is unlikely to be with the computer or the download cable. See the **Logger Problems** section below if this is the case.

Single Logger

If only one logger and one cable are being used, and everything appears to have installed correctly and the logger battery is good (see below), try installing the software and cable on another computer.

If the logger connects on the new computer then the problem will be with the original computer; if the logger still won't connect then the problem could be with either the logger or the cable/pad so both should be returned to your supplier for investigation.

Multiple Loggers

If more than one data logger is being used, and none of them are connecting, then the fault is more likely to be with the USB cable or pad. If another cable/pad is available try this, and if not try installing the software and cable/pad on another computer.

If this also fails, contact your supplier for a replacement cable or pad.

Logger Problems

Logger Battery

If a data logger will not connect, after running through the above, the first thing to check is that the logger has a good battery.

A Tinytag View 2 data logger will show a low battery warning on the left of its display (when recording) when its battery needs replacing (our other models of data logger do not have a visible low battery warning).

Data logger batteries usually last between one and three years depending on the model in question and how they are used. Checking the battery voltage with a meter is unreliable because the lithium batteries fitted in the loggers will give a good reading even when they are almost flat. If the battery in the logger hasn't been replaced in the last two years, changing it should be the next step.

Service kits are available for most data loggers that contain all of the parts required to service a logger (battery, seals and desiccant packs etc.). They are also supplied with step-by-step instructions telling a user how to service the logger correctly.

For more information see: <http://www.gemindataloggers.com/accessories/service-kits>

Reading & Accuracy Problems

If a data logger appears to be reading incorrectly, here are a few suggestions to try to confirm what the issue is.

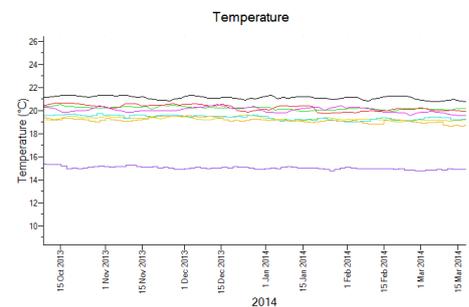
Loggers Reading Incorrectly

If a temperature or relative humidity data logger is suspected of reading incorrectly, then a quick way to check this is to set it recording alongside some other data loggers (more than one is preferable, to get a better sense of which may be reading correctly) or a calibrated reference meter.

If testing against other data loggers they should all be started on a short logging interval, typically one minute, and then left to record in a stable environment away from any heat sources or draughts (we recommend placing the data loggers in a shoe box or plastic sandwich box etc. to allow readings from all of the loggers under test to equilibrate).

Leave the loggers to record overnight and then compare the readings from the loggers using Tinytag Explorer's overlay feature (see the software's Help file for further information **Help >> Contents**).

If the suspect logger is reading the same as the other units under test it is probable that everything is okay. If the logger is reading significantly different from the other units then a potential problem may have been identified and the logger should be returned to your supplier for investigation (pay close attention to the scale of the axis when doing this; a visually large gap on the screen may actually be a small gap in reading terms).



Probe Data Loggers

If the data logger has an external probe, swap the probe with a logger that is known to be reading correctly to determine whether the fault is with the logger or the probe and then return the faulty item for investigation.

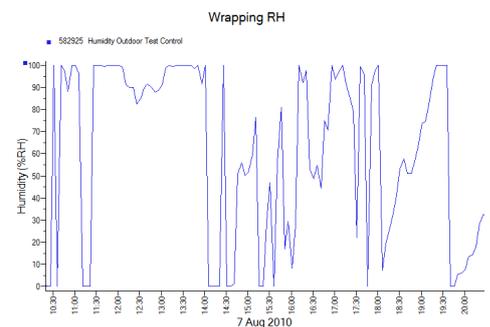
If the data logger has been supplied with a calibration certificate, both the data logger and the probe will need to be returned as data loggers and probes are calibrated as a matched pair.

RH Data Loggers Readings Falling to 0%RH

Relative humidity data loggers have a sensor that detects small changes in air moisture. Whilst data loggers can be used in condensing atmospheres, if the sensor comes into contact with a liquid this will effectively short it out and lead to 100%RH readings. In some cases, when the sensor becomes saturated, the readings may fall to 0%RH and start to rise again.

If this should happen remove the logger from the application and leave to dry overnight in a warm room. Provided there is no residue left on the sensor the logger should return to normal readings once again.

Care should be taken to protect the logger from direct precipitation and condensation where possible.



Blank Tinytag View 2 Displays

Tinytag View 2 data logger displays only show readings when the logger is recording.

If the display on the logger is blank the most common cause for this is that the logger has stopped recording because of the way it has been configured (usually because the logger is set to stop when it fills its memory, which is the factory default setting for this type of logger).

Restarting the data logger, after offloading the data that it has already recorded, will get the logger's display working again.

Time and Date Issues

If a data logger is downloaded and found to be displaying the wrong time or date it is likely that the computer used to start the logger was set incorrectly.

Tinytag data loggers take the time and date they show on a graph from the computer they are started on, so if this is set incorrectly the time and date shown when the logger is downloaded will be incorrect.

Restarting a logger on a computer set with the correct time and date will correct any errors.

Daylight Saving Changes

Data is displayed according to the current DST settings on the computer being used. If data is recorded before a daylight savings change and then viewed afterwards, with different DST settings, then the times shown on the graph will shift forwards or backwards from how they were originally displayed before the DST change.

More information on time and date issues can be found on our website here:

<http://www.gemindataloggers.com/support/listing/times-dates-explorer>

Software Error Messages

This section details some of the most common error messages and warnings seen in the Tinytag Explorer software.

General



The software cannot connect to a data logger. Follow the instructions in the **Communication Problems** section of this document to determine the cause of the issue.

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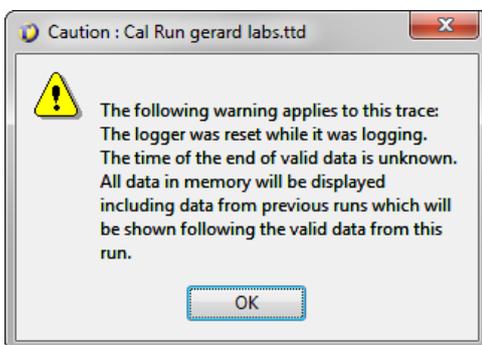
Software Error Messages

General



This message is most commonly seen because the user failed to start the data logger before putting it in their application and occasionally because the logger was inadvertently stopped as soon as it was started.

This message will also be shown when a data logger is set for a delay or trigger start and the logger is downloaded before the start date is reached or the logger is triggered.



The logger was reset whilst it was recording and Tinytag Explorer cannot determine where the end of the valid data is. The software has therefore offloaded everything in the data logger's memory - the good data it recorded up to the point when it was reset, and everything else that was in its memory after that - and applied the original start time and date to it (this often results in dates on that graph that are after the actual offload date). The user will have to use their judgement to determine the usefulness of any data displayed.

This fault usually occurs if a battery is inadvertently removed from a logger whilst it is recording and occasionally if the logger is dropped onto a hard surface, causing the battery to be jarred in its holder.

Low Battery Warnings



The battery in the logger is beginning to run flat and needs to be replaced. At this point the software will still allow the user to restart the logger, which can be done if a short logging run is required, but ideally the battery should be replaced straight away. This message usually occurs when the logger has less than two weeks of battery life left.



The battery in the logger is critically low and needs to be replaced. The software will not allow the logger to be restarted until the battery has been replaced.

NOTE: If a low battery warning is seen after replacing a battery, it is likely that the logger has not reset correctly. Remove the new battery from the logger and leave it for at least five minutes before refitting it. If the low battery warning persists after doing this, please contact your supplier for further information.

Useful Information

LED Flash Patterns

Most current Tinytag data loggers, with the exception of the View 2 models, use LEDs to show the data logger's status.

The flash patterns for these LEDs are as follows:

Green flash every 4 seconds	Logger recording
Green flash every 8 seconds	Logger waiting to record (set for a delay or trigger start)
Red flash every 4 seconds	Alarm limit exceeded

Tinytag Explorer Upgrade Instructions

It is always preferable to be running the most up to date version of Tinytag Explorer. To upgrade to this – free of charge – go to:

<http://www.geminaloggers.com/software/downloads>

Further Information

Further information can be found in Tinytag Explorer's Help file (go to **Help** and **Contents** in the software) and on our website here:

www.tinytag.info/support

If you should have any further questions, please contact your supplier or Gemini Technical Support:

e: help@tinytag.info t: +44 (0)1243 813009