



Re-Educator Software User Guide

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data collection & retrieval » temperature » humidity » shock » vibration » count » voltage » current

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Introduction

The Tinytag Plus Re-Ed range of voltage, current and count input data loggers have been designed to record the output from off-the-shelf sensors, and to display the recorded data in the correct engineering units for the application in question.

The Re-Educator software is the tool used to reconfigure these data loggers so that recorded data displays the appropriate engineering units when viewed in the Tinytag Explorer software.

Additionally, it can also be used to lock launch settings, to change the reading range in some types of voltage data logger and to set divisors in count input data loggers to increase the number of pulses they can count per logging interval.

This guide provides installation and configuration information for the software, basic information on each feature, and some examples of how to program Tinytag Plus Re-Ed data loggers.



Please note, the Re-Educator software is not used to start data loggers recording, or to view recorded data - to do that a copy of the Tinytag Explorer software is required. For further information on Tinytag Explorer, please see:

www.tinytag.info/software/tinytag-explorer

Required Items

To use the Re-Educator software you will need the following:

- A PC running Windows XP, 2000 or Vista
- A copy of the Tinytag Explorer software
- A serial or USB communication cable
- A Tinytag Plus Re-Ed data logger

Re-Educator is compatible with the following Tinytag Plus Re-Ed data loggers:

TGPR-0700, TGPR-0704, TGPR-0705, TGPR-0800, TGPR-0804, TGPR-0805, TGPR-1000, TGPR-1001, TGPR-1002, TGPR-1200, TGPR-1201

Installation

The Re-Educator software can be found in the **extras** folder on the Tinytag Explorer CD or downloaded, free of charge, from:

www.tinytag.info/downloads

To install the software, run the file setup.exe and follow the on-screen prompts.

Configuring Communications

By default the Re-Educator software will connect to loggers on Com Port 1. If you are using a serial cable, plugged into Com Port 1, you can ignore the following.

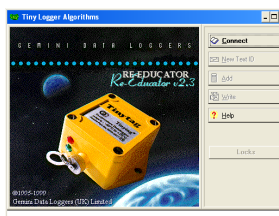
If you are using a USB cable, and need to connect on a higher Com Port, you need to create a text file called glm.ini in your Windows, or WINNT, folder containing the following text:

```
[options]
port=1
communications type=0
logger type=Tinytag / talk 2 / view
```

Changing the number of the "port=" line will change the port the software will connect on.

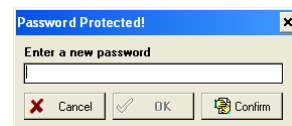
This will only work for Com Ports 2 to 4

Getting Started

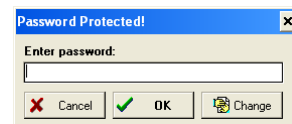


With the data logger connected to the computer, and the correct communication port selected, start Re-Educator and click on the **Connect** button.

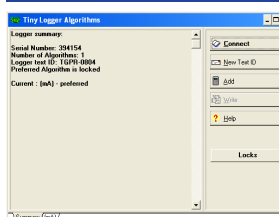
You will then be prompted to enter a password, do so and click on the **Confirm** button. You will then be asked to confirm the password twice before you are taken to the summary page.



The password set in Re-Educator is stored on the computer in use, not in the data logger, and is present to prevent unauthorised users changing logger settings. This can be changed at any time by entering the existing password and then clicking **Change**.



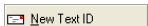
Summary Page



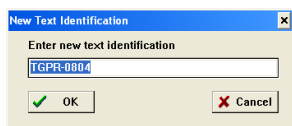
When your password is confirmed, you will then be presented with a summary page that lists the data logger's settings.


On the right are a selection of options for changing these settings, and in the bottom left there are a series of tabs that allow you to switch between the unit's different algorithms (an algorithm determines how raw data from the sensor is presented in the Tinytag Explorer software).

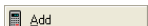
Summary Page Options

 **New Text ID**

This feature allows the user to change the name of the data logger, so that when the data from it is displayed in the Tinytag Explorer software the Type field in the Information View presents something more meaningful than the data loggers part number (for example, if the data logger is being used to record pressure this field can be changed to read "Pressure Logger").



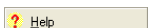
 **This text identification must be no more than 16 characters long (including spaces).**

 **Add**

This allows a user to add a new algorithm to a data logger. When new algorithms are added to a logger, a new %% tab will appear in the bottom left of the screen. Clicking on this tab will allow the user to configure the algorithm.

 **Write**

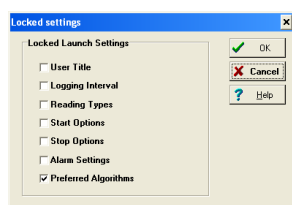
Clicking this button will save any changes made to algorithms, text IDs, locks and divisors (count loggers only) to the data logger.

 **Help**

This will open a help file that will give you more information on each feature in greater depth.

 **Locks**


There are a number of different settings you can lock in a data logger to ensure it is used correctly. The description for a logging run, its interval, reading types, start, stop and alarm options can all be locked so that users cannot inadvertently record the wrong data by accidentally changing a launch setting in Tinytag Explorer.



To use locks:

- Start the data logger in Tinytag Explorer with the settings you wish to use
- Stop the logger in Tinytag Explorer
- Connect to the logger using Re-Educator
- Click on **Locks**
- Check the boxes of the properties you wish to lock and click OK
- Click on **Write**
- Making sure the **Write new text ID/Locks** box is checked, (the **Write new Algorithms** box may also be checked) click **OK** and wait until Re-Educator tells you that you can disconnect your logger.

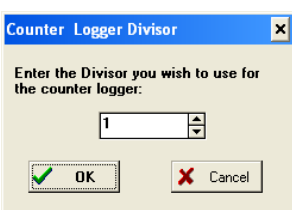
When used in Tinytag Explorer, the fields that have been locked will no longer be editable.

 **For the logger to work correctly with the Tinytag Explorer software the preferred algorithms lock must always remain checked.**

 **Divisors (TGPR-1200 & TGPR-1201 Count Loggers Only)**

As supplied, count data loggers can count up to 255 pulses per logging interval.

To allow more pulses to be counted per logging interval, you can set "divisors" in the data logger. A divisor of 2 will double the count capacity of the data logger (255 x 2 = 510) and a divisor of 10 will allow 2550 pulses per interval (255 x 10 = 2550). The maximum number of divisors that can be set is 256, allowing a total count per logging interval of 65,280.



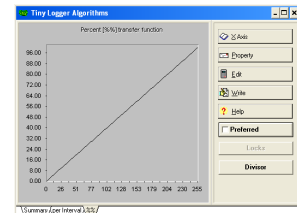
To set a divisor:

- Connect to the logger using Re-Educator
- Click on **Divisor**
- Enter the required divisor value and click OK

The logger will now count the value of the divisor x 255 counts per logging interval, but the readings will have to be scaled in the algorithm page for the unit to display results correctly (see the section that follows and example 4 on page 3 for further details).

Algorithm Page Options

To edit an algorithm - to change how a unit presents it's data in Tinytag Explorer - you first need to select an algorithm tab from the bottom left of the Re-Educator window.



Some factory programmed algorithms are locked and cannot be edited, if this is the case you will need to add a new algorithm by clicking on the **Add** button on the summary page.

When on an algorithm page you will see a number of options listed on the right-hand side of the window.

 **X Axis**

By default, Re-Educator represents a logger's reading range in terms of its raw 0-255 reading values. This isn't always the most convenient scaling to work in, especially when configuring a logger to work with a non-linear sensor, so the X-axis button allows the user to change this presentation to 0-100% (other values may be available depending on the type of logger in use).



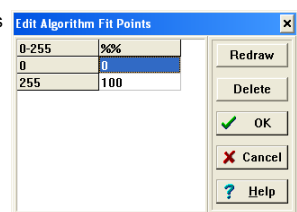
Changing the x-axis presentation does not alter information in the logger; it is purely a tool to simplify working with algorithms.

 **Property**

Clicking on **Property** starts a two-step process that allows you to edit the description of the property the unit is being configured to record (e.g. pressure or flow rate), and the engineering units the results will be displayed in (e.g. Pa or Litres).

 **Edit**

The **Edit** function allows you to adjust a logger's algorithm to scale data correctly for the sensor being used. You can adjust the curve of the algorithm for both linear and non-linear sensors using "fit points".



For a sensor with a linear output you will generally only need to select two fit points, but for a non-linear sensor the more fit points you can enter the more accurate your results will be.

A maximum of 36 fit points can be used, and the number set divides up the logger's reading range equally.

The **Redraw** option on the **Algorithm Fit Points** page can be used to update the curve of the algorithm in the software's main window at any point (this is useful for highlighting obvious errors before an algorithm is written to a logger).



You can delete unwanted algorithms from a logger on the Edit page. Simply click Edit, select any number of fit points and then click Delete.

 **Write**

Clicking this button will save any changes made to algorithms, text IDs, locks and divisors (count loggers only) to the data logger.

Preferred **Preferred**

The preferred algorithm is the one that will be used by the Tinytag Explorer software to present recorded data.



You must check this box on the algorithm you wish to use.

 **Locks**

See Summary Page Options.

 **Divisors**

See Summary Page Options.

Examples

Below are some examples that show how different data loggers can be configured to work with different sensors.

Example 1: Millivolt Logger with a 0-250A Current Clamp

Voltage data loggers are quite often used with current clamps.

In the following example, a TGPR-1000, 1001 or 1002 millivolt input data logger is being reconfigured to work with a 0-250A current clamp.

- Connect to the logger in Re-Educator.
- Click on the **Add** button and you will see a new %% tab will appear in the bottom left of your screen, click on it.
- Click the **Property** button and enter the property description "Current", click **OK** and then enter the units "Amps (A)" before clicking **OK** once again.

- Click **Edit** and enter 2 fit points.
- On the table that appears set:

0 to 0
255 to 250

0-255	per Interval
0	0
255	250

and click **OK**.

- Check the **Preferred** box.
- Click on **Write**.
- Making sure the **Write new Algorithms** box is checked, (the **Write new text ID/Locks** box should remain un-checked, unless you have altered either of these settings) click **OK** and wait until Re-Educator tells you that you can disconnect your logger.

The data logger has now been reconfigured and is ready to use. A test run, using the Tinytag Explorer software, is recommended to ensure the unit is reading correctly.

Example 2: Current Logger with a 0-25psi Pressure Sensor

A common application using a current data logger to record the output from a 4-20mA sensor.

In the following example, a TGPR-0800, 0804 or 0805 0-20mA current logger is being reconfigured to work with a 0-25 psi pressure sensor that has a 4-20mA output.

Because the 0-4mA part of the data logger's range is not used, it is necessary to set all readings in this part of the data logger to zero.

- Connect to the logger in Re-Educator.
- Click on the **Add** button and you will see a new %% tab will appear in the bottom left of your screen, click on it.
- Click the **Property** button and enter the property description "Pressure", click **OK** and then enter the units "psi" before clicking **OK** once again.
- Click **Edit** and enter 6 fit points.
- On the table that appears set:

0 to 0
51 to 0
102 to 6.25
153 to 12.5
204 to 18.75
255 to 25

0-255	per Interval
0	0
51	0
102	6.25
153	12.5
204	18.75
255	25

and click **OK**.



For other sensors, divide the 20mA equivalent figure by 4 to get the 102 value, double this for the 153 value and triple it for the 204 value.

- Check the **Preferred** box.
- Click on **Write**.
- Making sure the **Write new Algorithms** box is checked, (the **Write new text ID/Locks** box should remain un-checked, unless you have altered either of these settings) click **OK** and wait until Re-Educator tells you that you can disconnect your logger.

The data logger has now been reconfigured and is ready to use. A test run, using the Tinytag Explorer software, is recommended to ensure the unit is reading correctly.

Example 3: Count Logger with a Flow Meter

Another common application is for a count input data logger to be used to record the output from a flow meter.

In the example that follows, a TGPR-1200 or 1201 count input logger is being reconfigured to work with a flow meter that outputs a pulse every time 10 litres of liquid passes the sensor.

Example 3: Count Logger with a Flow Meter (continued...)

- Connect to the logger in Re-Educator.
- Click on the **Add** button and you will see a new %% tab will appear in the bottom left of your screen, click on it.
- Click the **Property** button and enter the property description "Flow Rate", click **OK** and then enter the units "Litres" before clicking **OK** once again.

- Click **Edit** and enter 2 fit points.
- On the table that appears set:

0 to 0
255 to 2550

and click **OK**.

0-255	per Interval
0	0
255	2550



For other sensors, the 255 value should always be the amount passing the sensor (in this case 10) multiplied by 255.

- Check the **Preferred** box.
- Click on **Write**.
- Making sure the **Write new Algorithms** box is checked, (the **Write new text ID/Locks** box should remain un-checked, unless you have altered either of these settings) click **OK** and wait until Re-Educator tells you that you can disconnect your logger.

The data logger has now been reconfigured and is ready to use. A test run, using the Tinytag Explorer software, is recommended to ensure the unit is reading correctly.

Example 4: Count Logger with a Divisor

As supplied, count data loggers can count up to 255 pulses per logging interval. Divisors can be set to allow the unit to record more pulses per logging interval.

In the example below, a TGPR-1200 or 1201 is configured to count 2,550 counts per logging interval.

- Connect to the logger in Re-Educator.
- Click on **Divisor**
- Enter 10 and click **OK**
- Click on the **per Interval** tab in the bottom left of the screen.
- Click **Edit** and enter 2 fit points.
- On the table that appears set:

0 to 0
255 to 2550

and click **OK**.



The 255 per interval value should always be the number entered as the Divisor multiplied by 255.

- Click on **Write**.
- Making sure the **Write new Algorithms** box is checked, (the **Write new text ID/Locks** box should remain un-checked, unless you have altered either of these settings) click **OK** and wait until Re-Educator tells you that you can disconnect your logger.

The data logger has now been reconfigured and is ready to use. A test run, using the Tinytag Explorer software, is recommended to ensure the unit is reading correctly.

Further Information

For further information on Re-Educator please see software's **Help** file.

If you have any questions that are not covered here or in the **Help** file, contact your distributor or:

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