

# Signatrol.com

## Data Logging Solutions

### SL7000 Series Quick Start Guide

Signatrol Ltd  
105 Church Street  
Tewkesbury  
Gloucestershire  
GL20 5AB  
Telephone: 01684 299 399  
Fax: 01684 299 375  
Email: support@signatrol.com

**WARNING: Ensure that the software has been installed BEFORE Connecting the logger or the Pro-Dongle ( If supplied ) to the PC.**

#### 1. Introduction

Congratulations you have just purchased a SL7000 series data logger which is one of the most advanced and accurate data loggers available on the market today.

Like most loggers, there are two distinct stages in the operation; Issue whereby all the configuration and logging parameters are defined and the log is started, and the data download where the data relating to the test are downloaded, stored and made available for display and analysis.

The software is very intuitive and is supported by on screen help. The purpose of this quick guide is to provide sufficient information to get you started, for a full description of all the features and how to get the most out of them, consult the full user guide contained on the CD supplied with the logger.

#### 2. Understanding the Order Code

Because the SL7000 in a variety of hardware builds, it is important to check the variant code, printed on the rear label, to see how the logger has been constructed.

The configuration supplied is contained within the order code as shown on the rear label as follows:

1st Digit 7 Denotes Series  
2nd Digit 0 Denotes no LCD Display, 1 denotes LCD Display fitted  
3rd Digit 0 Denotes USB connection to PC  
4th Digit 0 Denotes internal temperature Only  
1 Denotes internal temperature and RH  
2 Denotes 2 Universal Input channels + Internal Temp  
3 Denotes 2 Universal Input channels + Internal Temp + RH  
4 Denotes 4 Universal Input channels + Internal Temp  
5 Denotes 4 Universal Input channels + Internal Temp + RH

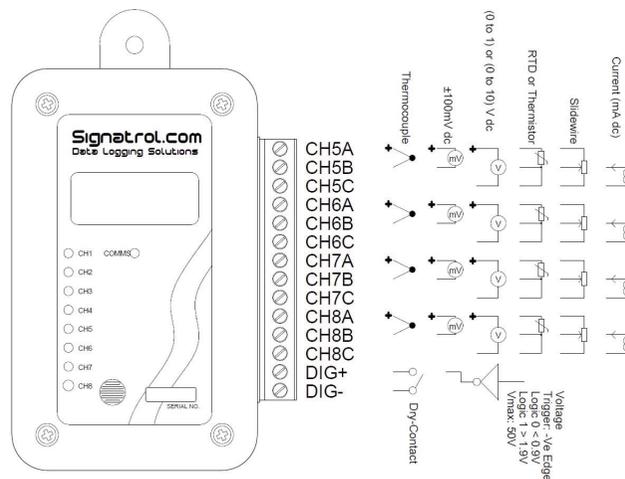
The external Temp+ RH probe SL-ACC7000-01 can be fitted to any version and is automatically recognised by the software.

eg. SL7103 Is a SL7000 series data logger with LCD display, USB interface and two universal inputs together with an internal temperature and an internal humidity sensor.

You can only set up and log the channels that are supplied as detailed within the variant code.

#### 3. Connecting the inputs

The SL7000 can accommodate a wide range of sensors which are connected as shown below.



Having selected the correct sensor type the appropriate connections can be made. The type of sensor used must be selected via the software prior to issue.

Note: The inputs are isolated from the communications port but not from each other. Care should be taken to avoid ground loop problems. All thermocouple probes for instance, should be of the isolated junction type.

#### 4. Installing the Software & Drivers

To install the software, ensure that no applications are currently running and insert the CD provided and select the 'Install Software' option from the menu. When the install is completed we recommend that the machine is re-started.

A new Icon will have been placed on the desk top.



Note. The drivers should now have been installed automatically. After installing the software, connect the logger and the Dongle (where used) to the appropriate USB ports. Windows will now attempt to identify the devices. If Windows cannot find the appropriate drivers it will prompt you to supply the location. The default location is c:\program files\TempIT4\DRIVERS.

**Note: If the device is connected before the driver has been installed it will install as an 'unknown device'. This must then be removed in order to perform a correct installation.**

#### 5. Communicating with the logger to the PC for the first time.

In order to communicate with the logger, it must first be connected to a free USB port on the computer using the lead provided. Plug the USB lead supplied into the spare USB port and then into the SL7000 data logger. The Windows will automatically recognise the SL7000 is and display a message accordingly.

Double click on the desktop icon to launch the TempIT software.

The first time TempIT is started you will be asked to enter a password. This password will be used should you decide to use the security functions. Enter and make a note of a six digit password.

Once a password has been entered, the software configuration screen is displayed. select the SL7000 by clicking on the button displaying the SL7000 icon.



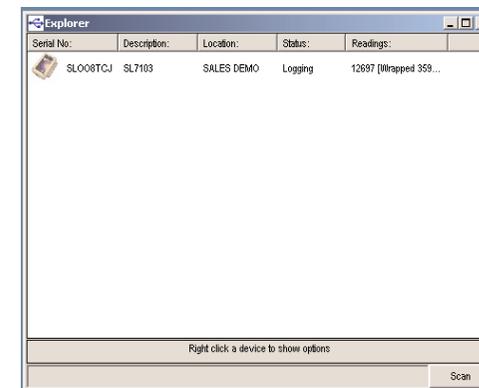
Click on OK.

#### 6. Finding the Device

The TempIT (Version 4 and later) software will support multiple devices and so you can use a USB hub with more than one SL7000 connected. The first thing to do is to click on the **Scan Network** icon:



The following screen will appear



This shows the devices, their variant code, the Location, the status and number of readings.

## 7. Configuring the logger

Click on the Scan Network Icon and **RIGHT CLICK** on the device icon, and select 'Configure'

A number of programming pages are presented as follows:

The first screen, titled "General" sets parameters that are common to all channels. A brief summary of the parameters is listed below. Please consult the full manual supplied on CD for further information.

Serial Number: Set at Factory and cannot be modified.

Location: Enter here some meaningful description of up to 12 characters to enable easy identification.

Data Type: Select one of the following Point, Average, Minimum, Maximum. This defines the value that will be stored to memory. Point means that every reading will be stored, Average means the average reading will be stored etc.

Read Rate: This is the rate at which the inputs are measured. It also defines the Realtime display update rate. ( Default 4 seconds)

Log Interval: This defines the time between stored values and is always a multiple of the Read Rate. (Default 60 seconds)

Display Update: This defines the rate at which the LCD updates and scans when displaying multiple inputs. It also defines the flash rate of the LEDs The default is 4 seconds but setting this to a longer interval will improve battery life. Note: although the LCD is updated at this rate it will only have a new value after every new read i.e. if the read rate is set to 1 Minute, the LCD reading will only have a new value every minute even if the update rate is set to 4 seconds.

First Reading Due: This is the current date and time as set on the PC or the date and time of the first reading when delayed start is active. This box shows 'Trigger Start' if either magnetic or digital start is selected.

Logger Full Expected: This box shows the date/time the logger is expected to be full when the 'Stop when Full' option on the right hand side of the page. It is meaningless when the '@Wrap when full' option is selected.

Battery Date: Allows you to enter the date the last time the battery was changed.

Delayed Start: Select this when you want to start the logger at some fixed point in the future.

Magnetic Start: Select this option when you want the logger to wait for an external magnet to start it logging.

Digital Start: Select this option when you want the logger to wait for the exercising of an external digital signal ( Connected to the Dig in + and - Pins of the logger)

Stop When Full: Select this option if you want the logger to stop logging when the memory is full.

Wrap when full: Select this option if you want the logger to continuously log, overwriting the oldest data when the memory becomes full. Sometimes called FIFO.

Default/Custom: There are two other buttons labelled Default and Custom. These set the effective memory size in readings per channel. Default sets the

memory size to the maximum available and custom allows a smaller maximum memory size to be set.

### Input Setup

Enabling Channels: Left hand tick boxes are used to select which channels are enabled for logging.

Visual On: These buttons select which channels are displayed on the LCD

Descriptor: Enter up to 12 characters to describe the input.

Input: Temperature and humidity inputs are fixed type. For universal inputs select the input type.

Linearisation: Many universal inputs have an associated linearisation that can be applied. The type of linearisation depends upon the type of sensor and is selected from the drop-down menu.

Input Scaling: This is only active for the process inputs ( Current and Voltage) and enables the inputs to be scaled in engineering units. The units can be entered and will appear on printouts etc, this option only appears if the Icon box is set to 'None'. The Icon box enables an appropriate icon to be displayed on the LCD display, if selected other than 'None' this is also used for the 'units' field on graphs etc.

Trigger setup: When enabled, a value can be entered, in engineering units, in the High or Low box (Or both). This parameter is used to start the logger when the input first passes this transition point. i.e. if enabled and Low was set to -30 then when issued the logger will wait until a value of less than -30 was recorded on that channel before starting logging.

Alarm Setup: When enabled, a high and/or low alarm can be set per channel together with a time function. The time is the number of consecutive reads where an alarm condition is identified before the alarm is recognised. When an alarm is recognised, the LED on that channel changes from flashing green to flashing red. All alarms are latching.

Special Condition: There is a special condition if the logger is issued (Not using delayed or trigger start) and an alarm is immediately present. In this condition, the alarm is not recognised until the channel first passes into a non-alarmed state. This effectively arms the alarm which will then trigger the next time it goes into alarm.

### Frequency Inputs

All units have a digital input facility that can be used to measure frequency. The digital can be either a Potential free contact, TTL, C MOS or Open Collector transistor.

The logger stores the number of counts per log interval and this is stored on channel 9. Channel 9 cannot be displayed either on the LCD or on the LED indicators.

The unit can measure frequencies up to 32 K Hz. For frequencies less than 50 Hz to prevent contact bounce giving spurious readings, it is recommended that the internal filter is activated. This is achieved by repositioning an internal link, see full manual for details.

### Manifest Text

Here the Owners Name is displayed. This is entered the first time the logger is issued and cannot later be changed.

It also provides for the entry of up to 256 characters of manifest text which form part of the record and are used to record useful information relating to the

test run, shipment, application etc.

### Input Trim

This requires a password entry. The password is entered the first time the logger is issued and cannot later be changed.

The Input Trim enables custom calibrations to be entered in terms of offset and span corrections. This is not normally necessary and is normally only used in special applications. Consult the full manual for further details.

## 8. Issuing the Logger

When the configuration is complete click issue to 'issue' the logger.

### 9. Downloading Data

After a successful issue the logger will store data according to the parameters entered. At the end of the test the data are then downloaded to the computer for display and analysis.

To download data:

Click on the Scan network Icon, right click on the device and then select 'Download'. The Data are then downloaded and immediately displayed on the screen in a graphical format. The data download can take up to 2 minutes for a full logger with the full memory.

The buttons down the side of the graph are self explanatory and are used to manipulate the graph to the desired format. The cursor on the graph can be moved with the mouse and displays time/date and value in the text to the top of the graph.

'Export Data' and 'Show Table' are features that are only available in TempIT-Pro

Note: TempIT-Lite only allows up to two channels to be displayed on the graph at any one time with only two axes. For unlimited multiple traces and up to six different axes the upgrade to TempIT-Pro is required. Consult your supplier.

## 10. Displaying a previously stored file

Close down all the screens until you are left with the blank home page. Click on 'File' and 'Open Graph file' (Or alternatively the open file icon )

A list of previously stored files will be presented. Double click on the file you wish to open.

### 11. TempIT Pro-Upgrade

To upgrade your software to TempIT-Pro contact your supplier. There are two ways the upgrade can be installed:

- 1 An individual licence per machine (Lowers cost option for 1 machine) whereby each machine has its own licence.
- 2 A Pro Dongle which enables any PC with the dongle connected to operate as Pro. Lite (FOC) is installed on each machine and the dongle can be moved from machine to machine which automatically upgrades the Lite to Pro.

### 12. Real time Mode

This is used to display the channels selected for logging in real time electrical units and can be used as a check that everything has been wired correctly.

WARNING: The displayed value is scanned initially within 1 second of the issue. The value is then updated at the selected read rate i.e. if the read rate was set at 1 hour, it would be 1 hour before the realtime display would update.