Signatrol.com
Data Logging Solutions

SL54TH
Instruction Sheet

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Introduction
The SL54TH button data loggers are designed to provide an accurate record of temperature and relative humidity exposure and are ideal for the monitoring of sensitive goods in transit and in process applications.

The PC operating software, TempIT-Lite is free from our web site alternatively; the button can be used with the TempIT-Pro package to provide greater functionality. Both versions provide a powerful yet easy to use graphing package as well as a platform to set up and issue the logger. Up to 64 characters of manifest information are held within the logger for easy identification and data retrieval.

Hardware Requirements
Minimum: Win2000 Pro, 256MB RAM, >1GHz, 50MB Hard disk space and 1024x768 pixels.
Additional RAM or processor speed may be required if addtional applications are open at the same time as TempIT. Always ensure all the latest service packs are installed.

Software requirements
TempIT-Pro or TempIT-Lite Version 4.0.38 or above.

Installing the software
Download the TempIT-Lite software from the Signatrol website or Insert the Tempit software disk into the CD drive, which will auto run and guide you through the installation procedure.

The software will install as TempIT-lite. This can be upgraded to the TempIT-Pro software platform by inserting the appropriate enabling code, which can be obtained from the Signatrol service department on 01684 299 399 or

support@signatrol.com. If you purchased the TempIT-Pro software you will have been provided with a six digit activation key. If you have the six digit acti-vation key, you can register the software at www.signatrol.com/tempit
The software contains a comprehensive 'HELP' function to help guide you through the functions.

Communicating with the SL54TH
The SL54TH connects via the holder and cable to the RS 232 port of a PC. Alternatively you can connect it to a USB port using the USB reader.

Plug the reader into the relevant com port (RS232 or USB depending upon the type). Place the button into the holder and power up the PC, launch the TempIT software. Ensure the correct device type and port are selected in the Device screen (Options>Configuration>Device)

Operating Procedure.
The standard button operation is a two stage procedure comprising of the issue, whereby all the relevant operating parameters are downloaded to the button and recording is initiated. The second stage is where the data are downloaded from the logger to the PC via the reader and are displayed on the TempIT software.

Issue
The relevant parameters are entered into the operating software such as sample rate, alarm parameters etc. The issue logger button is then clicked which sends the configuration data to the button. More details can be found in the Help within TempIT under the quick start guide.
WARNING: Issuing the logger erases all data currently stored in the button, ensure it is saved prior to issue.

Alarms
Four temperature alarms are provided, one high and one low for both temperature and relative humidity. The alarm setpoint is entered prior to issue. The alarms are 'armed' when the first reading is taken unless delayed start is selected. If the delayed start function is selected the alarm becomes immediately active as soon as the future start Date / time is reached. The temperature channel supports an additional function, "Start logging on alarm". In this mode the temperature alarms are armed instantly appon issue, but readings will not be stored unit an alarm condition has occured.

Manifest
There are two manifest areas; owner and user. The owner manifest is only entered once, when the logger is issued for the first time. The owner manifest remains within the logger for its entire life and cannot be modified. The owner manifest is normally used to record details of the owner and / or the date purchased.
The user manifest can take up to 64 characters of manifest data which can be entered and stored within the logger and can be changed for every journey. Manifest data can be free typed at issue and may be used to record such things as the shipment number, the licence number of the truck, the security tie serial number, the drivers name etc.

Data Download
Data are stored within the button and can be downloaded by clicking the Download Icon. More details can be found in the Help within TempIT under the quick start guide. Once data are downloaded it is immediately presented on the screen as a graph (In the case of Tempit-Pro. a data-table can also displayed). You will have the option to view temperature, relative humidty and dew point although if TempIT-Lite is being used, only two of the three types of reading can be show at once. Upgrading to the Pro version will remove this restriction. When a single channel is viewed, alarms appear highlighted in red and blue. The Data are not saved at this point and if required data can be

saved and printed using the appropriate icon. It is recommended that data are always saved. Mid-journey data can be save and at the end of the journey any new data will be appended to the mid-journey data.
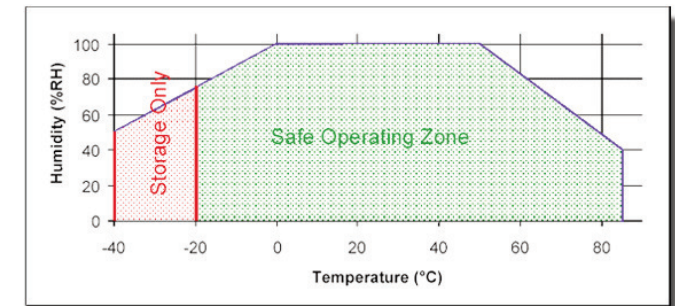
Battery Life
The buttons are designed to record approx 1,000,000 samples at ambient temperature. In the case of the SL54TH this means an operational life of approx 5 years with a 10 minute sample rate and an operating temperature of +20°C. This reduces to 125 days with a sample rate of 10 seconds at +20°C. We would recommend you disable the sampling or set the sample rate to a high value when the data logger is not in use

Operating Limits
The following graph shows the operating and storage conditions for the SL54TH data logger.

Increasing the sample time and reducing the temperature exposure will increase life significantly.

To preserve battery life:
1. Select the longest scan interval consistent with the application
2. Select 8 bit rather than 11 bit mode, if 8 bit is sufficient.
3. Do not leave the button logging in 'Wrap when full' mode when not in use
4. Do not leave the button at elevated temperatures when not in use

Previously Stored Data
Previously stored data can be displayed by selecting file and double clicking on the appropriate file. More details can be found in the Help within TempIT.

Troubleshooting
No communications with reader:
Check the correct port and device type have been selected in the software.
Ensure that no other software is loaded that is taking control of the port
No communication with button:
Ensure logger is placed in the holder

More details can be found in the Help within Tempit

Specification	SL54TH / SL54TH-A
Power	Internal Battery
Battery Life	Dependant up on Sample Rate and ambient temperatures. Typically 5 years at 10 minute sample rate.
Ambient Temperature	-40°C to +85°C - Storage -20°C to +85°C - Operating
Temperature Accuracy	±0.5°C from -10°C to +70°C See datasheet outside this range
Relative Humidity Accuracy	±5% - SL54TH ±2% - SL54TH-A
Temperature Resolution	0.5°C - Low resolution mode 0.07°C - Hi resolution mode
Relative Humidity Resolution	0.64%RH low resolution mode 0.04%RH high resolution mode
Total Number of Readings	8192 low resolution mode 4096 high resolution mode
Delayed Start	Yes, Up to 1 Year, 1 minute resolution
Sample Rate	2 second to 24 hours By default TempIT will suppress sample rates below 30 seconds. To enable faster samples rates go to options>configuration and disable "Suppress fast sample rates".
Software Alarms	Yes
Case Material	305 Stainless Steel
Warranty	1 Year
Dimensions	17mm Diameter x 6mm High

This Apparatus conforms with:-The protection requirements of Council Directive 89/336/EEC on the approximation of the laws of Member States relating to electromagnetic compatibility {Article 10 (1)}, as amended by Council Directives 92/31/EEC, 93/68/EEC and changes.

STANDARD:-   BS EN 61326;1998 IEC 61326:1997 Electrical Equipment for measurement, control and laboratory use EMC requirements.

IMMUNITY
ANNEX A (Industrial Locations)EMISSIONS   CLASS B

Disclaimer: Whilst we at Signatrol Ltd take pride in the performance and accuracy of our products, any product can and will fail. It is therefore recommended that all products are regularly checked for performance and calibration and that any application which involves the health and/or safety of persons, animals or other living organisms should have a secondary system and the Customer should not rely on the data from the product alone.

The Company shall not be liable for any consequential loss or damage, costs, expenses or other claims for consequential compensation or any other claims for indirect or economic loss whatsoever which arise out of or in connection with any Order for the supply of the Goods and/or the provision of the Services.

The Company's liability for damage to tangible property resulting from breach of contract and/or any negligent act or omission of the Company or its employees, agents or sub-contractors shall be limited to £5,000,000 in respect of any one incident or £5,000,000 in respect of any series of incidents arising from a common cause.

Full details of the extent of the Company's liability are contained in the Terms and Conditions of Sale available on request or from our web site.

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