

Signatrol.com

Data Logging Solutions

SL51M, SL51T, SL52T, SL53T & SL55T Instruction Sheet

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If you are using the USB interface, please ensure TempIT is installed before connecting the USB device to the computer

Introduction

The SL50 series button data loggers are designed to provide an accurate record of temperature exposure and are ideal for the monitoring of sensitive goods in transit and in process applications.

There are three versions of the button logger, the SL51T for more general purpose applications, the SL52T which has improved accuracy/resolution and has a larger memory and the SL53T which can measure up to +125°C.

The PC operating software, TempIT4-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.

Software requirements

TempIT4-Pro or TempIT4-Lite operating software

Installing the software

Insert the TempIT4 software disk into the CD drive, which will auto run and guide you through the installation procedure. If downloaded from the web site, use explorer to highlight the setup.exe file and double click on the file.

The software will install as TempIT-lite. This can be converted 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. The software contains a comprehensive 'HELP' function to help guide you through the functions.

Communicating with the SL51T, SL52T and SL53T

The SL50 series connect 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 version). Place the button into the holder and power up the PC and run the operating system, launch the TempIT4 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 Tag 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 TempIT4 under the quick start guide.

WARNING: Issuing the tag erases all data currently stored in the button, ensure it is saved prior to issue. Logger can be suspended by setting the sample rate to disabled.

Alarms

Two temperature alarms are provided, one high and one low. The alarm set-point 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.

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 the standard TempIT, a data-table is also displayed). Alarms appear highlighted in red. 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 loggers are designed to record in excess of 1,000,000 samples at ambient temperature. In the case of the SL51T this means an operational life in excess of 10 years.

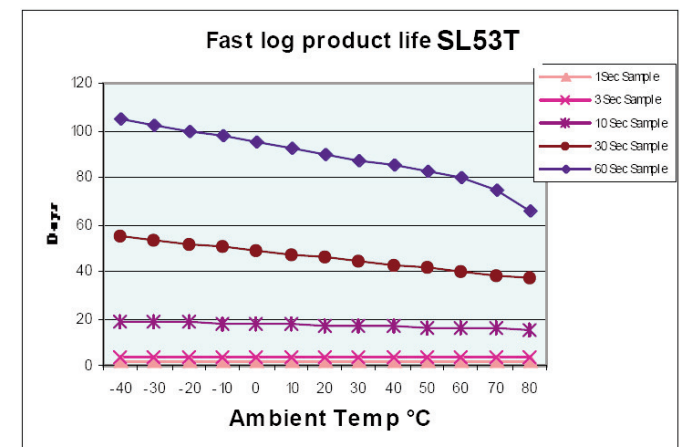
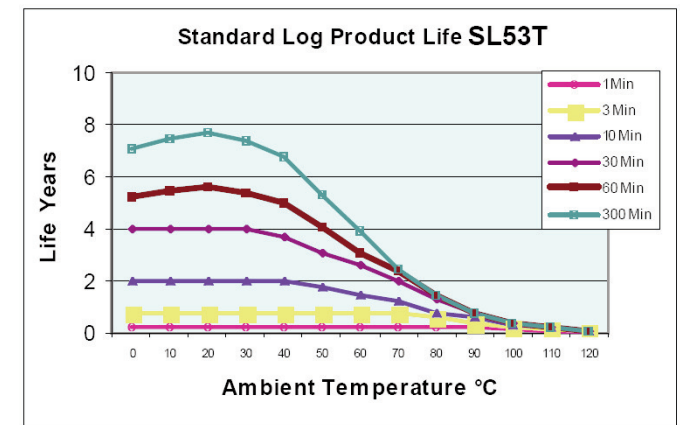
IMPORTANT

Battery life is considerably shortened by fast logging and at temperatures in excess of 45 °C which results in reduce life for the SL53T when operated in this area. The following graphs show their effect on the product life of the SL53T. Because of this effect, the logger can only be used in 'Stop when Full' mode for sample intervals of less than 1 Minute. Graphs shown are for high-resolution mode, longer life is achieved using low-resolution mode (contact sales office for details). For extreme worst case applications (1 second log interval @ 125 °C) battery life is restricted to 25 test cycles in high-resolution mode and 76 test cycles in low-resolution mode.

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. Go not leave the logger in logging in 'Wrap when full' mode when not in use
4. Do not leave the logger 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

SL51T Specifications @ 25°C

Power Internal Battery: 10 years or 1 Million Samples.
Temperature Range: -40°C to +85°C
Accuracy: ±1.0°C from -30 to +70°C
Resolution: 0.5°C
Number of Readings: 2048
Sample Rate: 1 to 255 minutes (1 min steps)
Ingress Protection: Splash Resistant - IP55
Manifest Text: 64 Characters
Delayed Start: Yes
Case Material: 305 Stainless Steel
Calibration Interval: 12 months recommended
Warranty: 1 Year
Dimensions: 17mm Dia x 6mm Height

SL52T Specifications @ 25°C

Power Internal Battery: >5yrs with 10min sample 0.5°C resolution.
>2yrs with 10min sample 0.07°C resolution
>100days with 10sec sample 0.5°C resolution
Temperature Range: -40°C to +85°C
Accuracy: ±0.5°C from -10 to +65°C
Resolution: 0.5 or 0.07°C
Number of Readings: 8192 or 4096 (mode dependant)
Sample Rate: 2* seconds to 24 Hours
Ingress Protection: Splash Resistant - IP55
Manifest Text: 64 Characters
Delayed Start: Yes
Case Material: 305 Stainless Steel
Calibration Interval: 12 months recommended
Warranty: 1 Year
Dimensions: 17mm Dia x 6mm Height

SL53T / SL53T-A Specifications @ 25°C

Power Internal Battery: See Graph
Temperature Range: 0°C to +125°C
Accuracy - SL53T: ±0.5°C from +20 to +75°C
Accuracy - SL53T-A: ±0.2°C from +80°C to +125°C
Resolution: 0.5 or 0.07°C
Number of Readings: 8192 or 4096 (mode dependant)
Sample Rate: 2* seconds to 24 Hours
Ingress Protection: Splash Resistant - IP55
Manifest Text: 64 Characters
Delayed Start: Yes
Case Material: 305 Stainless Steel
Calibration Interval: 12 months recommended
Warranty: 1 Year
Dimensions: 17mm Dia x 6mm Height

SL55T / SL55T-A Specifications @ 25°C

Power Internal Battery: 300 Hours when used above 50°C
Temperature Range: +15°C to +140°C
SL55T Accuracy: ±1.5°C from +110°C to +140°C
±7.0°C from +15°C to +110°C
SL55T-A Accuracy: ±0.5°C from +80°C to +140°C
±1.0°C from +15°C to +80°C
Resolution: 0.5 or 0.07°C
Number of Readings: 8192 or 4096 (mode dependant)
Sample Rate: 2* seconds to 24 Hours
Ingress Protection: Splash Resistant - IP55
Manifest Text: 64 Characters
Delayed Start: Yes
Case Material: 305 Stainless Steel
Calibration Interval: 12 months recommended
Warranty: 1 Year
Dimensions: 17mm Dia x 6mm Height

Specification subject to change without notice.

*As default TempIT will only make available sample rates down to 30 seconds. The User should disable "Suppress fast sample rates" under options>configuration, if sample rates from 2 to 30 seconds are required (model depending).

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 www.signatrol.com.

SL50-ACC01 Enclosure

The SL50-ACC01 is a protective enclosure that should be used to protect the SL50 series data loggers. The SL50-ACC01 is constructed from 316 stainless steel and hold a single button logger. It allows the data logger to be submerged to a depth of 100m or withstand pressure of up to 10 Bar. The enclosure can also be used in harsh environments where contaminants may effect sealing on the standard button.

Operation:

The SL50-ACC01 is a two part enclosure. Unscrew the two halves. You will then have the lid, with a spring fied and the base. The data logger is placed face down in the base - with the etched face down. This ensure good thermal response through the bottom of the enclosure. The lid can then be screwed on with the spring being used to ensure the etched face of the data logger is always in contact with the base of the enclosure.

If you require more information on the SL50 series accessories, please contact your distributor or the sales office directly on +44 (0)1684 299 399

The measuring sensor is bonded to the etched face of the data logger

