

SINGLE CHANNEL TEMPERATURE DATA LOGGER

Miniature

SL53T BUTTON DATA LOGGERS LOGGERS

Sample Rates from 2 seconds to 24 hours

Monitor from 0 °C to +125 °C

signatrol

Self Contained Temperature Data Logger

Splashproof

TempIT Compatible

INTRODUCTION

The SL53T is a self contained single channel temperature data loggers with the ability to record up to 8,000 data points. The SL53T will measure from 0 °C to +125 °C with a typical accuracy of ± 0.5 °C. They are very small (about the same size as a watch battery) which enables them to be inserted into small items and packages. The main advantage over the SL52T is the ability to measure temperatures up to +125 °C.

The SL50R Button Reader™ interfaces to the RS232 or USB port of a PC and is totally compatible with the TempIT-lite operating software which enables the logger to be set up and the data read and displayed in graphical format. Data can be stored and retrieved at a later time. The software can be up-graded to TempIT-Pro which provides various additional features such as data table view, export data to spreadsheet, email graphs, and automated MKT, FO, AO and PU Calculations etc.



SPECIFICATIONS

Description	SL53T
Sensor - Internal Temperature Sensor	0 °C to +125 °C
Sensor Accuracy	± 0.5 °C from 20 °C to +70 °C See Graph Overleaf For Temperatures Outside This Range
Battery Life	See Graph
Sample Rates (User Selectable)	2 seconds to 24 hours* ¹ & ²
Memory Size	8192 - Low Resolution Mode 4096 - High Resolution Mode
Battery	3.0V Lithium: Non Replaceable
Resolution	8 Bit - Low Res Mode (0.5 °C) 11 Bit - High Res Mode (0.07 °C)
Response Time	Typically 90 seconds in circulating air
Size	17mm Diameter x 6mm Height
Case Material	305 Stainless Steel
Weight	4 grams
Sealing	IP55 - Water Resistant <small>See protective enclosures for waterproof applications.</small>
Communication	RS232 Serial or USB
Clock Accuracy	± 2 Minutes per Month
Sampling Methods	Continuous (First in First Out) or Stop When Full* ²
Alarms	High and Low
Start Delay	Up to 12 months, 1 Minute Resolution
Start on Alarm	Yes
Owner Manifest Data	Up to 32 Characters
User Manifest Data	Up to 64 Characters

*Notes:

1. Sample rate affects battery life as does high temperature exposure - see charts overleaf
2. "Stop when full" is the only option for sample rates less than 1 minute
3. Resolution is programmable as 8 or 11 bit. More data is stored in 8 bit mode and battery life is enhanced
4. Application pending
5. With ambient temperature less than 50 °C

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Computer Requirements

Operating System: Windows 2000, WinXP or Vista32.

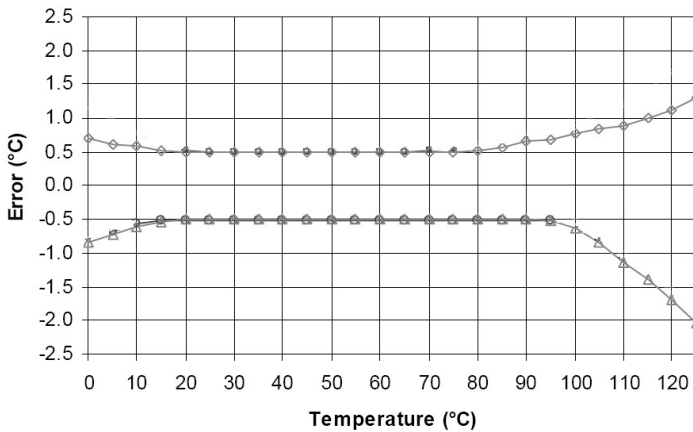
IBM PC or compatible computer 500 MHz (1GHz recommended) with 256MB Ram (512MB Recommended)

Software Requirements

TempIT-Lite (free from Signatrol website: www.signatrol.com) or TempIT-Pro

Error Curve

The SL53T actual error depends upon the ambient temperature according to the following graph:

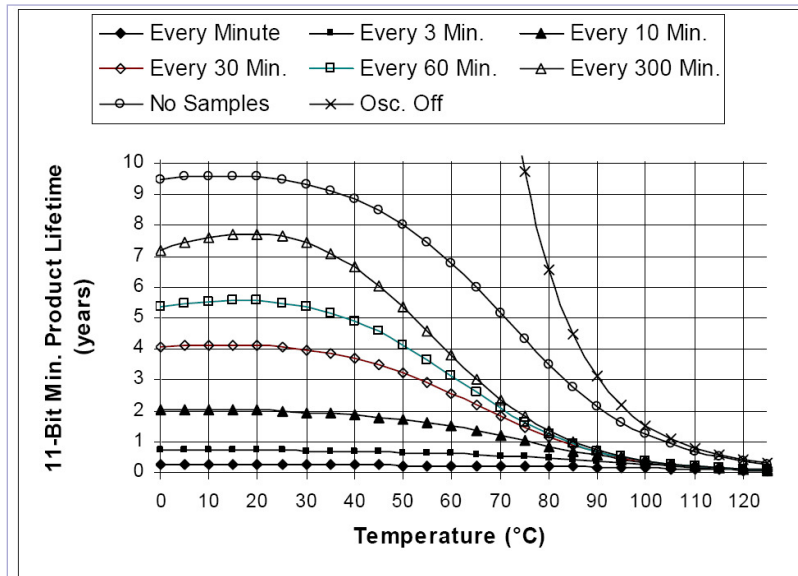


APPLICATIONS

Food processing verification, pharmaceutical storage, laboratories, transportation of temperature sensitive goods, equipment run time, HVAC system testing and balancing, etc.

Battery Life

Battery life is considerably shortened by fast logging and at temperatures in excess of 45 °C. The following graphs show the effect of temperature on the product life of the SL53T.



SL53T Battery life, in years.

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SL53T Data Logging button 0°C to +125°C

STARTER KITS

SL53 - KIT - [] - []

Interface:
USB - USB Interface
232 - RS232 Interface

Number of Data Loggers:
2, 3, 4 or 5

SOFTWARE

TempIT-Lite Operating Software (Free from website)
TempIT-PRO Standard Operating Software

ACCESSORIES

SL50-INTERFACE-USB USB Interface cable
SL50-WALL Wall Mounting Bracket - Pack of 5
SL50-CLIP Plastic Snap-in Fob - Pack of 5

INTRODUCTION

Signatrol offer a range of water-tight secondary enclosures that have been developed to protect the SL50 series of data logging buttons. These are especially recommended when the button is likely or expected to be subjected to pressure variations.

Use of the enclosure slows the response time as detailed in the tables below. To download the logged temperature data, the logger needs to be taken out of the enclosure. The maximum operating temperature is defined by the type of button used.



SL50-ACC01



Construction	316 Stainless Steel
Protection	Up to 10 Bar / 100m Submersion
'O' Ring	Silicone BS115
Response Time - With SL51T inside - in water.	
63% Step Change	73 Seconds
10 to 90% Step Change	142 Seconds
Response Time - With SL51T inside - in air.	
63% Step Change	373 Seconds
10 to 90% Step Change	717 Seconds

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SL50-ACC01 Stainless Steel Enclosure

SL50-ACC03



Construction	Polyphenylene Sulphide*
Protection	Up to 1 Bar / 10m Submersion
'O' Ring	Silicone S500-70 FDA Approved
Response Time - With SL51T inside - in water.	
63% Step Change	118 Seconds
10 to 90% Step Change	237 Seconds
Response Time - With SL51T inside - in air.	
63% Step Change	407 Seconds
10 to 90% Step Change	827 Seconds

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SL50-ACC03 Plastic Enclosure

* The injection molding compounds (Ryton® PPS) used in the SL50-ACC03 are subject to the general safety provisions of the U.S. Food, Drug and Cosmetic Act. It is the responsibility of the purchaser/user the enclosure to determine the safety and suitability of the injection molding compounds for their specific application.

SL50-ACC05



Construction	316 Stainless Steel
Protection	Up to 0.5 Bar / 5m Submersion
'O' Ring	Silicone BS115
Response Time - With SL51T inside - in water. 63% Step Change 10 to 90% Step Change	40 Seconds 111 Seconds
Response Time - With SL51T inside - in air. 63% Step Change 10 to 90% Step Change	232 Seconds 478 Seconds

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SL50-ACC05

Fast Response Stainless Steel Enclosure

SL50-ACC06



Construction	Silicone Rubber*
Protection	Up to 0.5 Bar / 5m Submersion
'O' Ring	Silicone S500-70 FDA Approved
Response Time - With SL51T inside - in water. 63% Step Change 10 to 90% Step Change	90 Seconds 243 Seconds
Response Time - With SL51T inside - in air. 63% Step Change 10 to 90% Step Change	270 Seconds 575 Seconds

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SL50-ACC06-PK5

Pack of 5 Silicone Enclosures

SL50-ACC06-PK10

Pack of 10 Silicone Enclosures

* Silicone material trade name - Thermoflex compound No 2850R. Minimum operating Temperature -50°C (-58°F). Maximum operating temperature +316°C (+600°F). Please note Maximum operating temperature with SL51T or SL52T data loggers is +85°C (+185°F). When used with the SL53T data loggers, the maximum operating temperature is +125°C (+257°F)