SL51T, SL52T, SL53T, SL55T & SL56T
Temperature Data Logger Instruction Sheet

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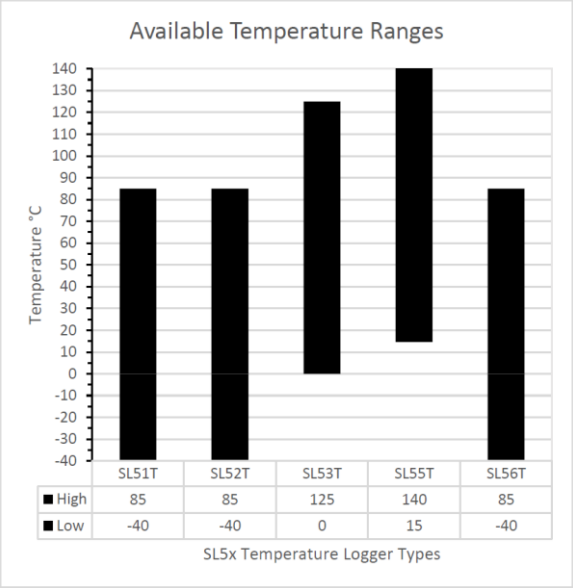
Warning: If using the USB interface, please install the TempIT software BEFORE connecting the USB interface to the computer.

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 five versions of the button temperature logger, the SL51T for more general-purpose applications where lower accuracy and resolution are acceptable. The remaining four types all have increased accuracy and resolution.



Software requirements

TempIT4-Pro or TempIT4-Lite operating software

The PC operating software, TempIT4-Lite is free to download from our website 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

Communicating with the data loggers

The SL50 series connect via the holder and cable to the USB port of the computer.. They should only fit in one way. Launch the TempIT software. Ensure the correct device type and port are selected in the Device screen (Options>Configuration>Device).
See TempIT Quick Start Guide for more detailed information.

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 readings are downloaded from the data logger to the PC via the reader and are displayed in the TempIT Software in the form of a graph.

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 or in the quick start guide.

WARNING: Issuing the tag erases all data currently stored in the button, ensure it is saved prior to issue.

To preserve battery life, the data logger should be issued with a sample rate of 24 Hours when not in use. Also, setting the memory mode to stop when full, instead of wrap when full will ensure the logger stops reading once full.

Alarms

Two temperature alarms are provided, one high and one low. The alarm set-point is entered prior to issuing. The alarms are 'armed' when the first reading is taken unless a 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 can only be 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 driver's name etc.

Data Download

Readings 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 readings are downloaded, they are immediately presented on the screen as a graph.

Alarms appear highlighted in red. The Readings are not saved at this point and if required data can be saved and printed using the appropriate icon from the panel on the left-hand side. It is recommended that data are always saved. Mid-journey data can be saved and at the end of the journey, any new data will be appended to the mid-journey data.

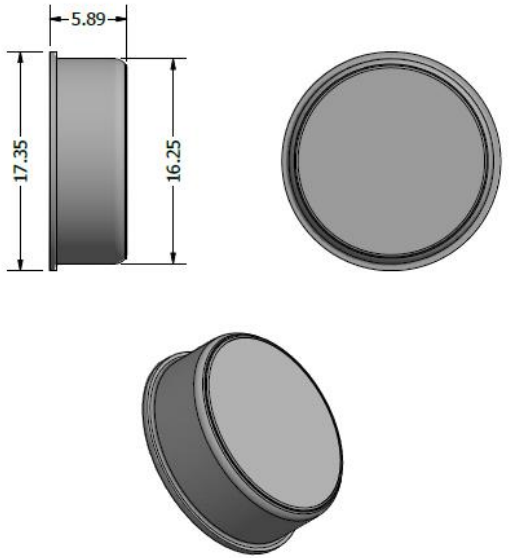
Previously Stored Data

Previously stored data can be accessed via the Open Graph window. Select the appropriate file by checking the checkbox on the left of the table. TempIT-Pro users can select more than 1 graph file and overlay graphs on the same X-axis.

Operational Troubleshooting

No communication with the 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 the logger is placed in the holder
More details can be found in the Help within TempIT

Data logger dimensions (in mm)



SL51T / SL51T-A Specifications
Temperature Range: -40°C to +85°C
Resolution: 0.5°C
Sample Rate: 1 to 255 minutes (1 min steps)
Number of Readings: 2048
Start Types: Immediate & Delayed.

Accuracy		
Device Type	Range	Accuracy
SL51T	-30 to +70°C	±1.0°C
SL51T	-40 to +85°C	±1.3°C
SL51T-A	-40 to +85°C	±0.75°C

Battery Life: 10 years or 1 Million Samples (whichever comes first).

SL52T / SL52T-A Specifications
Temperature Range: -40°C to +85°C
Resolution: 0.5 or 0.07°C
Sample Rate: 2 seconds to 24 Hours. *Note1
Number of Readings: 8192 or 4096 (dependent on resolution selection)
Start Types: Immediate, Delayed & Level.

Accuracy		
Device Type	Range	Accuracy
SL52T	-10 to +65°C	±0.5°C
SL52T	-40 to +85°C	±1.0°C
SL52T-A	See Calibration Certificate for Calibrated Span.	±0.1°C ±0.1% Calibrated Span.

Average ambient temperature during log.	Sample Rate	Resolution	Estimated battery Life
+20°C	10 Mins	0.5°C	5.7 Years
+20°C	10 Mins	0.07°C	1.9 Years
+60°C	10 Mins	0.5°C	2.6 Years
+60°C	10 Mins	0.07°C	1.3 Years
-25°C	10 Mins	0.5°C	4.7 Years
-25°C	10 Mins	0.07°C	2.0 Years
+20°C	3 Mins	0.5°C	3.2 Years
+20°C	3 Mins	0.07°C	8 Months
+20°C	30 Secs	0.5°C	10 Months
+20°C	30 Secs	0.07°C	34 Days

SL53T / SL53T-A Specifications
Temperature Range: 0°C to +125°C
Resolution: 0.5 or 0.07°C
Sample Rate: 1 second to 24 Hours. *Note1
Number of Readings: 8192 or 4096 (dependent on resolution selection)
Start Types: Immediate, Delayed & Level.

Accuracy		
Device Type	Range	Accuracy
SL53T	+20 to +75°C	±0.5°C
SL53T	0 to +20°C & +75 to +115°C	±1.0°C
SL53T	+115 to +125°C	+1.5°C
SL53T-A	See Calibration Certificate for Calibrated Span.	±0.1°C ±0.1% Calibrated Span.

Battery Life			
Average ambient temperature during log.	Sample Rate	Resolution	Estimated battery Life
+100°C	3 Secs	0.5°C	26.9 Days
+100°C	3 Secs	0.07°C	2.5 Days
+120°C	3 Secs	0.5°C	19.8 Days
+120°C	3 Secs	0.07°C	2.5 Days
+100°C	3 Mins	0.5°C	135 Days
+100°C	3 Mins	0.07°C	64 Days
+120°C	3 Mins	0.5°C	34 Days
+120°C	3 Mins	0.07°C	24.1 Days
+20°C	3 Mins	0.5°C	3.5 Years
+20°C	3 Mins	0.07°C	8 Months
+60°C	3 Mins	0.5°C	2.25 Years
+60°C	3 Mins	0.07°C	6 Months

SL55T-A Specifications
Temperature Range: +15°C to +140°C
Resolution: 0.5 or 0.07°C
Sample Rate: 1 second to 24 Hours. *Note1
Number of Readings: 8192 or 4096 (dependent on resolution selection)
Start Types: Immediate, Delayed & Level.

Accuracy		
Device Type	Range	Accuracy
SL55T-A	+15 to +85°C	±1.0°C
SL55T-A	+80 to +110°C	±0.5°C
SL55T-A	+110 to +140°C	+0.2°C

Battery Life: 150 Hours or 150 cycles when used above +85°C

SL56T / SL56T-A Specifications
Temperature Range: -40°C to +85°C
Resolution: 0.5 or 0.07°C
Sample Rate: 5 mins to 24 Hours. *Note1
Number of Readings: 125,400 or 62,720 (dependent on resolution selection)
Start Types: Immediate, Delayed & Level.

Accuracy		
Device Type	Range	Accuracy
SL56T	-10 to +65°C	±0.5°C
SL56T	-40 to +85°C	±1.0°C
SL56T-A	See Calibration Certificate for Calibrated Span.	±0.1°C ±0.1% Calibrated Span.

Common Specification (to all device types)
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 Diameter x 6mm Height
Weight: 3 grams approx.
Response Time (T1): 90 seconds (63%) in circulating air.
Battery: Non-serviceable Panasonic BR1225 or BR1225A (model dependent).

*note1.By default, TempIT will only make available sample rates down to 30 seconds. The User can disable “Suppress fast sample rates” under options>configuration, if sample rates below 30 seconds are required. (Model Dependant).

IMPORTANT
Battery life is considerably shortened by fast logging and at temperatures in excess of 45 °C.

The Signatrol website contains a battery life calculator that can be used to calculate the battery life for all of the SL50 series data loggers.

https://www.signatrol.com/pages/battery-life-calculator

A guide to preserving battery life:

- Select the longest sample rate interval consistent with the application
- Select 8-bit rather than 11-bit mode if 8-bit is sufficient.
- Do not leave the logger in logging in 'Wrap when full' mode when not in use.
- Do not leave the logger at elevated temperatures when not in use
- When using the temperature trigger, make sure the sample rate is set for a long period if the trigger point is unknown as the data logger continues to take readings in this mode even if the readings are not stored away.

The specification is subject to change without notice.

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

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