

# Signatrol.com

## Data Logging Solutions

### SL120i & SL121i Series Instruction Sheet

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#### Introduction

The SL120i series data loggers are designed to provide an accurate record of 4-20 mA signals and come complete with a connecting lead and crocodile clips to connect the 4-20 mA signal.

Up to 16,000 records can be stored in the logger which uses the powerful TempIT-Lite software package, running on a PC, to download the configuration and to retrieve the data. High and Low alarms can be set with a programmable time period for which the alarm limit must exceed before it is recognised as an alarm. Any alarm condition detected is clearly shown on the chart and, in the case of the SL121i, is announced by flashing an on-board LED and audio 'bleeper'.

The PC operating software, TempIT-Lite is free from our web site alternatively, the SL120 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 450 characters of manifest information are held within the logger for easy identification and data retrieval.

#### Hardware Requirements

IBM PC or compatible computer running Win Me, Win2000 or WinXP  
SL120R-232 or SL120R-USB IR Reader.

#### Software requirements

TempIT-Lite or TempIT-Pro operating software

#### Connecting the hardware

The SL120i and SL121i are supplied with a flying lead terminated in two crocodile clips. These loggers have a "passive" input and should be connected into existing, powered current loops. At a convenient point, break the current loop and connect the crocodile clips. The red lead is positive and black lead is negative.

#### Installing the software

Insert the Tempit software disk into the CD drive, which will auto run and guide you through the installation procedure. If downloaded from the Signatrol 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, call 01684 299 399 for more details.

The software contains a comprehensive 'HELP' function to help guide you through the functions.

#### Communicating with the SL120i / SL121i

The SL120/121 has an infrared communications link that is designed to communicate with a SL120R Reader. The reader has a short range Infra Red serial communications interface that communicates directly to the SL120i / SL121i.

Plug the reader into the relevant comms port ( RS232 or USB depending upon the version). Place the SL120/121 face down on the reader in the area outlined on the label. Power up the PC and run the operating software. Launch the TempIT software.

#### Operating Procedure.

The standard tag operation is a two stage procedure comprising of the issue, whereby all the relevant operating parameters are downloaded to the Tag 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 tag button is then clicked which sends the configuration data to the Tag. More details can be found in the Help within Tempit under the quick start guide.

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

#### General Setup

In this section you can enter a nine digit numerical code to identify the data logger. You can also set up the sample rate from the drop down menu. It is also possible to limit the number of readings the data logger takes before stopping logging. Information windows are also provided giving you a summary of how long the logger will log for before it's memory is full.

#### Alarms / LED Blink

Two time/process alarms are provided, one high and one low. The alarm setpoint is entered prior to issue together with time for which the process must be in alarm before the tag recognises it as an alarm. The alarms are 'armed' the first time the process goes into the non-alarm state. For example, if the logger has been configured for 0 to 100°C equates to 4-20mA and the ambient temperature is 20 °C when the Tag is issued and the high alarm is set for 8 °C, the alarm will not be primed until the first time the measured temperature falls below 8 °C. If the delayed start function is selected (SL121 only) this feature is disabled and the alarm becomes immediately active as soon as the future Date/time is reached. If the SL121i data logger is being used, it is also possible

to set how often the LEDs flashes and how often the alarm sounder operates when an alarm condition has been encountered.

#### Delayed Start

The delayed start allows you specify when the data logger starts taking readings.

#### Manifest

There are two manifest areas; owner and user. The owner manifest is entered once only the first time it is issued and remains within the tag for its entire life and is normally used to record details of the owner. The user manifest can take up to 450 characters of manifest data which can be entered and stored within the logger and can be changed for every log period. 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.

#### Engineering

The engineering section is used to configure the way the data logger presents the data. You have the opportunity to enter the engineering low value, usually 4 and the engineering high value, usually 20. You can then enter the corresponding measurement units °C, %RH, %, Bar, ltr/hr etc. There is also a descriptor that is used to identify the trace.

#### Data Download

Data are stored within the logger 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.

#### Security Tie

The SL120/121 is equipped with a small ring-mounting hole. This is designed to accept a standard security tie, which is used to ensure that the logger is not tampered with. The security ties are for single use and must be cut off to remove. Each tie has a unique serial number, which should be noted and/or programmed into the Tag manifest. In this way, the user can be sure that the Tag has not been moved from its intended location without the operator knowing. Spare security ties are available from Signatrol Ltd.

#### 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.

#### Problems?

No communications with reader: Check red light in the reader is on, if not check connections and check that the correct comm. Port has been selected in the software.

No communication with Tag: Ensure Tag is face down on the reader in centre lining up with graphic

More details can be found in the Help within TempIT

#### SL120i Specifications @ 25°C

Power Internal Battery:	Typical Battery Life 5 Years
Ambient Temperature Range:	-40°C to +70°C
Measuring Range:	0 to 22mA DC
Accuracy:	±16uA
Resolution:	6uA (12 bit)
Input Impedance:	< 120 Ohms @ 20mA
Number of Readings:	2048 (Stop when full)
Sample Rate:	2 seconds to 24 Hours
Ingress Protection:	IP50
Software Alarms:	No
Green Active Indication:	No
Red Alarm Indication:	No
Audible Alarm Indication:	No
Manifest Text:	450 Characters
Delayed Start:	No
Case Material:	ABS
Calibration Interval:	12 months recommended
Warranty:	1 Year
Dimensions (LxWxH):	60mm x 35mm x 20mm

#### SL121i Specifications

Power Internal Battery:	Typical Battery Life 5 Years
Ambient Temperature Range:	-40°C to +70°C
Measuring Range:	0 to 22mA DC
Accuracy:	±16uA
Resolution:	6uA (12 bit)
Input Impedance:	< 120 Ohms @ 20mA
Number of Readings:	16384 (Stop when full)
Sample Rate:	2 seconds to 24 Hours
Ingress Protection:	IP50
Software Alarms:	Yes
Green Active Indication:	Yes
Red Alarm Indication:	Yes
Audible Alarm Indication:	Yes
Manifest Text:	450 Characters
Delayed Start:	Yes
Case Material:	ABS
Calibration Interval:	12 months recommended
Warranty:	1 Year
Dimensions (LxWxH):	60mm x 35mm x 20mm

Specification 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



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](http://www.signatrol.com).