

# UNIVERSAL DATA LOGGER

## SL7000 SERIES

16 Bit Resolution  
Universal Input Data Logger

1, 2, 3, 4, 5, 6, 7, 8 and 9 Channels

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

LCD Display Option

User Replaceable Battery

Typical 3 Years battery Life

### INTRODUCTION

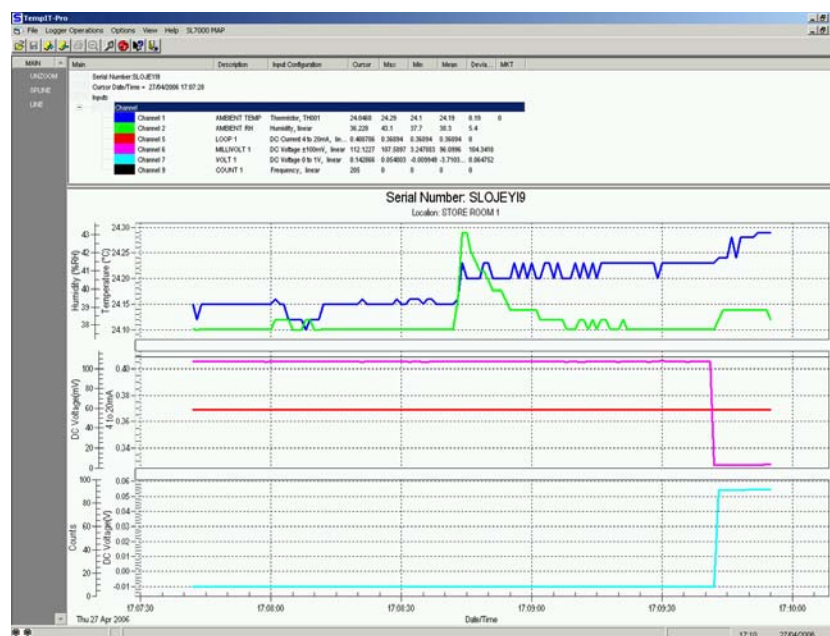
The SL7000 is a data logger that has a very flexible combination of inputs from a single temperature input up to 4 universal inputs (RTD, Thermocouple, mA, V, mV, Thermistor, Slidewire) combined with an internal temperature and RH as well as a optional external temperature and RH sensor. All units feature a digital input which can be used as an event trigger or as a counter input enabling counts of up to 65535 per period to be recorded.

Powered by its own, user replaceable, internal battery that has a typical life in excess of 3 years, up to 128,000 readings can be recorded at intervals from 1 second to 24 hours.

The SL7000 features unprecedented accuracy, combining our extensive knowledge of instrumentation precision with data logging technology. High end resolution of 16 Bit for all universal inputs and a modular build ensures that the unit is competitively priced whatever the application.

An on-board LCD display (Optional) shows selected channel information and integral LED displays provide immediate scanning and alarm status information.

The logger can be set to start immediate, start on an event (either a trigger event or the exercising of an external digital input) or start with the application of an external magnet (Provided). This feature enables loggers to be set up in advance of the mission by a supervisor and to be launched at the start of the journey / log period by an operator.



The SL7000 series data loggers are connected to the computer via a USB cable (provided). It is possible to network up to 64 devices.

Data are downloaded to a PC computer using the free TempIT-Lite software via its USB interface. TempIT-Lite enables all parameters to be set up and the logger issued, it also provides for data download, data storage and graphing.

TempIT-Lite can be upgraded to TempIT-Pro quickly and easily over the telephone to provide additional features such as multi-logger trace overlays, data table display, data export, emailing of graphs, automatic MKT calculation etc.

**Signatrol.com**  
Data Logging Solutions

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## SL7000 TECHNICAL SPECIFICATIONS

Description	Detail
Input Variations	Internal Temperature and counter Internal Temperature + RH and counter Internal Temperature, 2 Channel Universal and counter Internal Temperature + RH, 2 Channel Universal and counter Internal Temperature, 4 Channel Universal and counter Internal Temperature, RH, 4 Channel Universal and counter +Additional External Temp and RH option on all versions
Universal Input (maximum 4) Any Combination	Pt 100: 2 or 3 Wire °C or °F (BS EN 60751/JIS1604) Ni100, Ni120: 2 or 3 Wire °C or °F Cu100: 2 or 3 Wire °C or °F Thermocouples Types J, K, T, R, S, B, N °C or °F Thermistor (Various Types) °C or °F (0 to 20) mA Scaled in engineering units ±100mVdc Scaled in engineering units (0 to 1)Vdc Scaled in engineering units (0 to 10) Vdc Scaled in engineering units Slidewire Scaled in engineering units (100 ohm to 10Kohm)
Measurement Resolution	All Universal Inputs - 16 Bit <sup>1</sup> Internal & External Temperature - 12 Bit Internal & External Relative Humidity - 8 Bit
Counter Input	Used to start logging or as a counter. Maximum Count = 65535 per sample period. A current flowing into the counter pin >1 mA <10 mA or a Potential Free Contact (PFC) = logic '1'. Counts can be actual counts or scaled in engineering units. Maximum frequency = 32768Hz.
Start Options	Programmable Delay Period (10 minutes to 1 year) Start on external magnet swipe Start when counter input goes high Start on event trigger
Channel Indicators	8 Green LED's to indicate logging status changing to Red indicate alarm condition.
Communication Indicator	1 Yellow LED to indicate comms activity
Sample Rate	1 Second to 24 hours for all channels
Display	Optional 3.5 Digit LCD with channel indication and low battery warning. Continuous display with value updated every 4 to 255 seconds (programmable). Units displayable are °C, °F, mA, V, %
Communication Interface	USB Isolated (mini-USB 1B Male connector) - Cable Supplied
Universal Input Connector	14 Way 2 part plug/socket
External Temperature & RH Connector	6 Pin mini-Din
Sample Methods	Point - The sampled measurement is stored directly to memory. Averaging - The average value per period is stored Maximum - The maximum value per period is stored Minimum - The maximum value per period is stored
Cold Junction Compensation	Uses internal temperature sensor

Note 1 Sample Rate > 5 Minutes = 16bit, <5Minutes > 1 Minute = 15 Bit  
< 1 Minute> 8 seconds = 14 Bit, <=8 Seconds = 13 Bit

## SL7000 Accuracy @ 25 °C

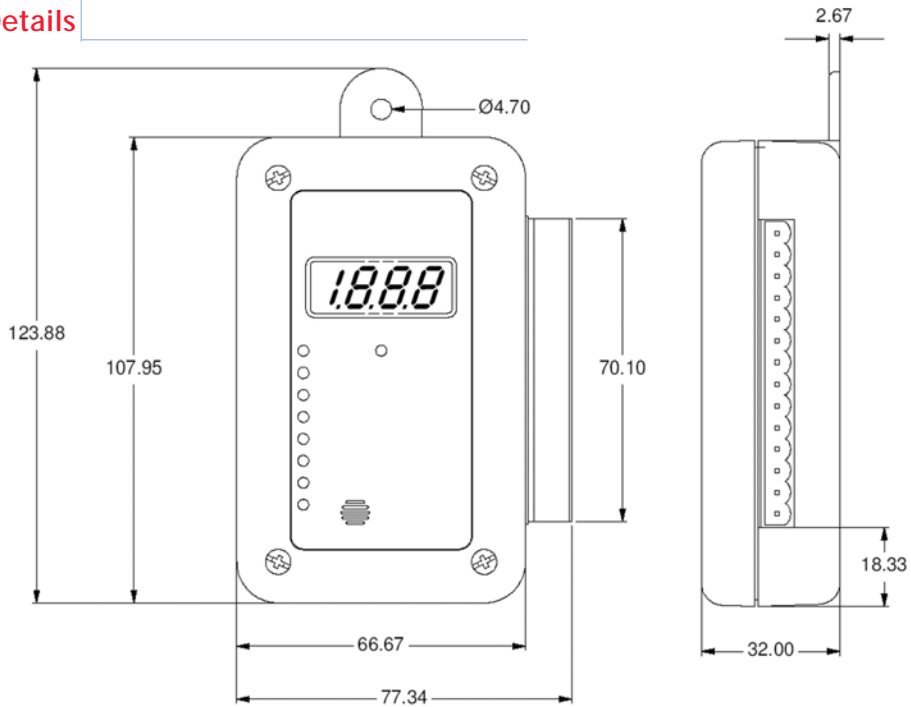
Description	Detail
Internal Temp	± 0.5 °C (-30 °C to +70 °C)
External* Temp	± 0.4 °C @ +25 °C, ±1.75 °C (-30 °C to +70 °C)
Internal/External RH	± 2.0%RH over 10%-90% ± 4.0% RH over the range 0-10% and 90-100%RH
Pt100 2 or 3 Wire °C or °F	± 0.1 °C ± 0.1% rdg
Ni100/Ni120*/Cu100*	± 0.2 °C ± 0.1% rdg
Slidewire	± 0.02% FSD
0/20mA	± 0.01% FSD
±100mVdc	± 0.01% FSD
0/1Vdc	± 0.01% FSD
0/10Vdc	± 0.01% FSD
Thermistor (Various Types, °C or °F)	Type dependent contact sales office for details
Thermocouples J, K, T and N (°C or °F)	± 0.1% FSD ± 0.5 °C
Thermocouples R, S and B (°C or °F)	± 0.2% FSD ± 0.5 °C

## SL7000 General Specification

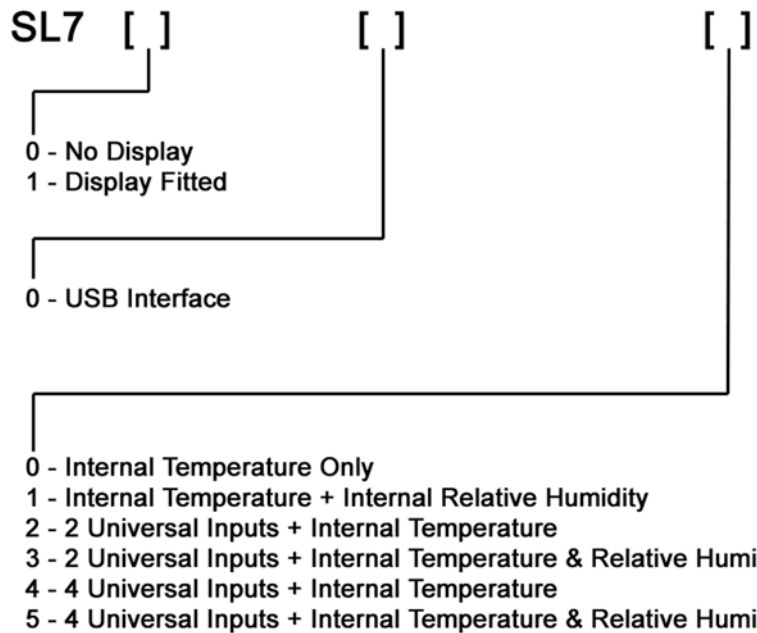
Memory Size	0 or 2 Universal Inputs - 62,000 Readings 4 Universal Inputs - 128,000 Readings
Memory Utilisation	Wrap Around (First in, First Out) or Stop when Full (Default).
Battery	Lithium AA (3.6V DC) 2.7 Ah User replacable
Battery Life	Typ 3 Years (2700mAh)
Ambient Operating Range	-30 °C to +80 °C
Manifest Text (User)	256 Characters
Manifest Text (Owner)	256 Characters
Alarm Setpoints	Independent High and Low, Latching per channel
Alarm Trigger Time	Each Setpoint has an associated time. This time dictates the period the alarm must be continuously present before the alarm is raised. The options are 0 to 255 sample periods.
Event Trigger	A programmable level per channel that will cause all channels to start recording when the input first crosses the threshold in the specified direction. An event can also be the exercising of an external digit signal or the activation of a magnetic swipe.
Low Battery Warning	Low Battery displayed when battery life has less than one month to go.

## SL7000 Mechanical Details

Dimensions in mm



## SL7000 Order Codes



## Accessories

SL-ACC7000-01	External Temp/RH Probe
SL-ACC7000-02	Replacement Miniature USB connecting lead
SL-ACC7000-03	Replacement Lithium Thionyl Chloride Battery
SL-ACC7000-04	External power supply (cannot be used with ACC7000-01)
SL-ACC7000-05	Spare 14 way input connector
TempIT-Lite	Operating Software (FOC) - requires version 4 or above
TempIT-Pro	Upgrade to professional version
TempIT-HS	High Security Version

TempIT is freely available from [www.signalrol.com](http://www.signalrol.com)