

MINIATURE SELF POWERED DATA LOGGERS

SL500 SERIES 8 BIT & SL700 SERIES 12 BIT

SMALL SIZE -

8 BIT SL500 RANGE -

12 BIT SL700 RANGE -

128KB MEMORY OPTION SL700 -

1.5MB OPTION SL700 -

REALTIME GRAPHING -

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INTRODUCTION

The SL500 8 Bit & SL700 12 Bit data loggers satisfy a wide range of applications;- Temperature, Relative Humidity, AC current, Pressure, Process Signals and Pulses can all be measured and recorded. Extended memory options are available on selected SL700 series 12 Bit devices up to 1.5MB. They are powered by an internal battery with a typical life of up to 10 years and programmed by Windows based SL500-SOFTWARE & SL700-SOFTWARE. The data stored in the logger can be downloaded and either saved to disk or analysed immediately on screen. Information is displayed in tabular or graphical format with full reporting facilities or alternatively the data can be incorporated into other spreadsheet packages.



INTERNAL TEMPERATURE SENSOR

Type: Negative Temperature Coefficient Thermistor.

R₂₅ Value: 10,000 ohms.

Tolerance +/-0.2°C, over the range of 0 to 70°C.

(sensor only):

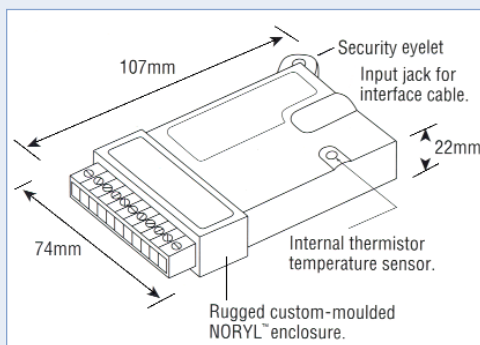
Range: -40 to 70°C.

Resolution: 0.03°C at 25°C.
Better than 0.07°C between -25°C and 70°C.
Better than 0.13°C between -40°C and -25°C.

LOGGER SPECIFICATIONS @ 20°C

The SL500 and SL700 series Data loggers share many common features. For further specifications on individual models, refer to the data on the following pages.

Mechanical Details



	SL500 series 8 Bit (0.4%)	SL700 series 12 Bit (0.25%)
Memory Size	32768 readings	21500 readings
optional		128KB or 1.5MB* ¹
Sampling rates	user selectable 8 seconds to 5 days (DOS) 8 seconds to 5 days (Windows)	user selectable from 25 per second (using Fastread* ²) 8 seconds to 8 hours
Sampling Methods	continuous(First-in,First-out) stop when full (Fill-then-stop)	
Clock	Accuracy ±2 seconds per day plus one sampling interval	
Battery	On board, typical life 10 years	
Operating limits	-45°C to +70°C 0 to 95% RH non condensing	
Input Connector	Removable, 11 way terminal strip	
PC Requirements	A PC with a 386 processor or higher, 2MB of hard drive space, 3 1/2" floppy drive, 2MB RAM, Windows 3.1 running in enhanced mode.	
Software	SL500-SOFTWARE & SL700-SOFTWARE for Windows. See accessories data sheet	
External Connector	Removable screw-type terminal strip with Common (-) connection.	
APPROVALS		
EMC Emissions	EN 55011	
Susceptibility	IEC 801-2,3,4	
Notes	*1 - 1.5MB extended memory only available on SL700 series *2 - Fast Read requires optional battery pack	
Accessories	See separate Software & Accessories data sheet.	

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TEMPERATURE LOGGERS

SL501 and SL701 are designed for temperature monitoring. With an integral temperature sensor for a measuring range 0-70°C ±0.2°C and optional remote sensors for either temperature or simple switch closure sensing.

	SL501 (8 bit 1 part in 256)	SL701 (12 bit 1 part in 4096) (SL701 - 128K)
Input optional	Integral Temperature Sensor Remote Temperature Sensors	Integral Temperature Sensor Remote Temperature Sensors
Sensor type	NTC Thermistor	NTC Thermistor
Two channels	One integral. One remote	One integral. One remote
Sensors	See Accessories data sheet	See Accessories data sheet

RELATIVE HUMIDITY AND TEMPERATURE LOGGER

SL502 and SL702 are self contained Temperature and Relative Humidity data loggers with optional additional remote sensors for either Temperature and Relative Humidity or just Temperature.

	SL502 (8 bit)	SL702 (12 bit) (SL702 - 128K)
Accuracy	±4%. 10 to 90% RH (-20 to +40°C)	±3%. 10 to 90% RH (-20 to +40°C)
Resolution	Better than 0.4%	Better than 0.04%
Range RH	1 to 100% non-condensing	1 to 100% non-condensing
Input optional	Integral temperature and RH sensors Remote Temperature/RH sensor (see Accessories data sheet).	
Sensor types	Temperature NTC Thermistor (10K ohms @25°C); RH, thin film polymer, capacitive sensor.	
Four Channels	Integral RH and Temperature. Remote RH and Temperature assembly	

AC CURRENT VOLTAGE AND TEMPERATURE LOGGER

The SL503 and SL703 are used with Clamp On CT's to measure single or three phase AC currents. SL703 - 128K extended memory accepts 3 AC current, 3 DC volts and one integral temperature channel.

	SL503 (8 bit)	SL703 (12 bit) (SL703 - 128K)
No. of Channels	Three AC current. One integral temperature	Three AC current. One integral temperature SL703 - 128K - 3 AC Current. 3 DC Volts. One Integral temp.
Accuracy	Current ±3% FS above 10% of range	Current ±2.5% FS above 10% of range Voltage ±0.5% full scale (±40 Volts overvoltage)
Transducers	The use of isolators or a single power supply is recommended to avoid ground loops.	
Input	Integral temperature sensor. AC current transformers (use over insulated cables only)	
Sensor A65FL	Clamp on CT AC current-5,25,100 and 250 Amps switchable ranges. 50 Hz (see Accessories data sheet)	
Sensor A75FL	Clamp on CT AC current-10,50, 250 and 500 Amps switchable ranges. 50Hz (see Accessories data sheet)	

PRESSURE TEMPERATURE AND RELATIVE HUMIDITY LOGGER

SL504 and SL704 loggers provide easy monitoring and troubleshooting of pneumatic control systems and can monitor Pressure and Temperature with integral sensors or using optional remote sensors for RH and Temperature.

	SL504 (8 bit) *1 *2	SL704 (12 bit) *2 (SL704 - 128K)
Input optional	Integral temperature sensor Inter-changeable external pressure sensor	Integral temperature sensor, Integral Pressure sensor
Channels optional	Three internal - Temperature / Pressure / RH Remote Temperature/RH sensor, onboard RH	Two (both used on (LPD) Low Pressure Differential) Remote Temperature/RH sensor
Ranges	Pressure Modules	Integral Sensor
Differential	Not available on ACR/SR series	SL704-LPD (±0.5, 1, 2, 5 or 10" WC)
10" WG	SL500 series	SL704-010G ±10" WC Resolution 0.006"
0 to 5psi G only	SL/PM005G (30kPa) Res. 0.03psi	SL704-5G (30kPa) Resolution 0.003psi
0 to 30psi G or A	SL/PM030G or A(200kPa) Res. 0.15psi	SL704-30 (G or A) (200kPa) Resolution 0.015psi
0 to 100psi G or A	SL/PM100G or A(700kPa) Res. 0.5psi	SL704-100 (G or A) (700kPa) Resolution 0.05psi
0 to 150psi G	SL/PM150G (1000kPa) Res. 0.5psi	Not Available
Accuracy	±0.5% Full scale	
Sensor type	Silicon Piezoresistive strain gauge.(Temperature and RH as SL702) (see Accessories data sheet)	

*1 Order Pressure Modules separately *2 State Pressure Range, G - Gauge or A - Absolute

THERMOCOUPLE INPUT TEMPERATURE LOGGERS

SL705 and SL706 provides for up to two or seven J,K,S, or T thermocouple inputs, plus one integral cold junction sensor.

	SL705 (12 bit) - Two T/C inputs, one internal thermistor
	SL706 (12 bit) - Seven T/C inputs, one internal thermistor
	SL705 - (128K) SL706 - (128K extended memory)
Accuracy	±0.5% FS plus resolution
Input type and Resolution	J, T/C = 0.3°C. -50 to +750°C K, T/C = 0.5°C. -100 to +1260°C S, T/C = 1°C. 0 to +1450°C T, T/C = 0.4°C. -200 to +400°C

PROCESS SIGNAL INPUT LOGGER

SL507 or SL707 data loggers are designed to accept commercially available transducers, used to monitor a wide variety of measurement parameters. TrendReader software enables all input signals to be displayed in engineering units.

SL507(8 bit)	Mixed inputs 1 each: contact sales office	SL707 (12 bit) 7 mixed as below plus 0-200mV
SL507V2 (8 bit)	All inputs: 7 each 0 to 2.5V	SL707V2 (12 bit) All inputs: 7 each 0 to 2.5V
SL507V5 (8 bit)	All inputs: 7 each 0 to 5V	SL707V5 (12 bit) All inputs: 7 each 0 to 5V
SL507V10 (8 bit)	All inputs: 7 each 0 to 10V	SL707V10 (12 bit) All inputs: 7 each 0 to 10V
SL507A (8 bit)	All inputs: 7 each 0 to 25mA	SL707A (12 bit) All inputs: 7 each 0 to 25mA
		SL707 - 128K extended memory all loggers
Accuracy	±1% Full scale	±0.5% Full scale (overload protected)
Transducers	A single power supply or isolated outputs are recommended to prevent ground loops	

TEMPERATURE LOGGERS

SL508 and SL708 data loggers are designed for easy monitoring and recording of multi point temperature measurements. They offer an integral Thermistor temperature sensor and up to seven optional remote sensors for either temperature or simple switch closure sensing.

	SL508 (8 bit)	SL708 (12 bit), SL708-128K - 128K extended memory
		SL708-1.5Mb - 1.5MB extended memory
Input	Integral temperature sensor	Internal temperature sensor
Optional remote	Seven Thermistor temperature sensors	Seven Thermistor temperature sensors
Sensor type	NTC Thermistor	NTC Thermistor
	See separate Software & Accessories sheet	See separate Software & Accessories sheet

PULSE LOGGERS

SL509 and SL709 data loggers are designed for easy counting and recording of switch closures and voltage pulses. Data can be displayed in custom engineering units.

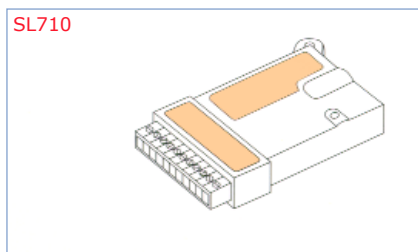
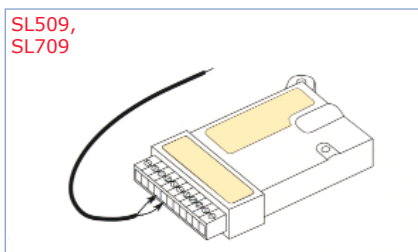
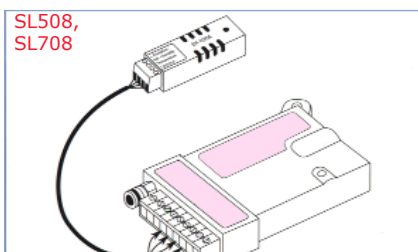
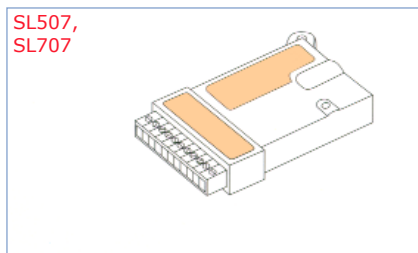
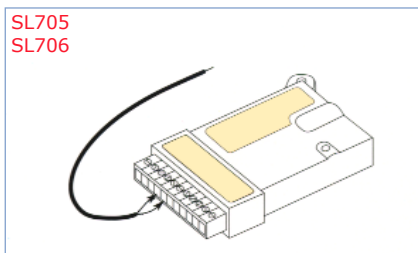
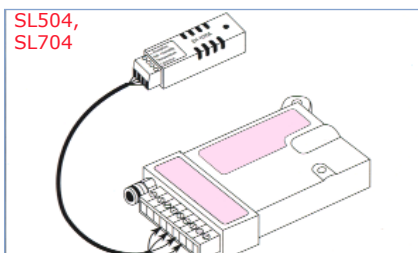
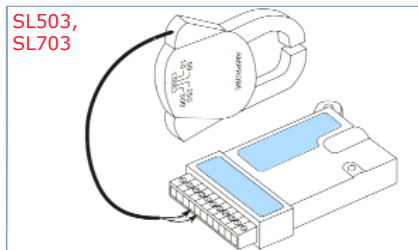
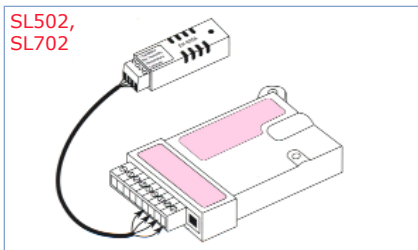
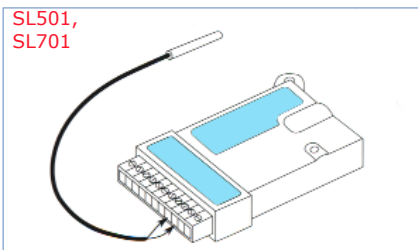
	SL509 (8 bit)	SL709 (12 bit) (SL709 - 128K)
Input	One Internal temperature sensor Two remote logic signals	Two remote logic signals
Pulse width	4 milliseconds minimum	2 milliseconds
Range	32; 64; 128 pulses/sec	32; 64; 128 pulses/sec
Switch contact	Uncommitted switch or relay contacts	Uncommitted switch or relay contacts
Logic input	Active logic signals	Active logic signals
Type	Low = 0 to 0.5 Volts DC High = 4.5 to 24 Volts DC	Low = 0 to 0.5 Volts DC High = 4.5 to 24 Volts DC
Impedance	750 K ohms	750 K ohms
Frequency		512 Hz maximum
Function	averaging every 8 seconds	cumulative counting at every time period

RTD TEMPERATURE LOGGER

SL710-128K data logger accepts up to three channels of 2, 3 or 4 wire, Pt-100 or Pt1000 resistance temperature detectors for use over the measuring span of - 230°c to +300°c.

		SL710-128K (12 bit)
Input		Three remote sensors One Integral Thermistor Temperature sensor
Sensor type		Pt-100 or Pt-1000 at 0.00385 ohms fundamentals 2, 3 or 4 wire.
Accuracy		typically ±0.3°C ±0.06% full scale ±0.5°C
Memory		87,000 12 bit readings

SL500 & SL700 MINIATURE DATA LOGGERS



ACCESSORIES (see separate data sheet)

SOFTWARE

SL500-SOFTWARE and SL700-SOFTWARE is an easy to use programme running under Windows™, for setting up and downloading SmartReader data loggers and for analysing the data collected.

TEMPERATURE SENSORS

Thermistors sensors can be supplied as "beads" or as complete assemblies. Thermocouple Pt-100 or Pt-1000 temperature sensors can be selected from a standard range as shown in the Status Instruments Ltd Product Guide and custom sensor assemblies available on request.

RELATIVE HUMIDITY SENSORS

These are of a capacitive type and offer good stability and tolerance to many chemicals.

AC CURRENT SENSORS

"CT" clamp on type current probes for measuring AC currents with adapters to measure up to 3000 Amps.

PRESSURE SENSORS

Silicon piezoresistive strain gauge sensors are integral to the 12 Bit SL704 series and are available in Gauge or Absolute types. Low pressure differential LPD options cover the ranges $\pm 0.5"$, $\pm 1"$, $\pm 2"$, $\pm 5"$, $\pm 10"$ with an accuracy of $\pm 0.5"$ WC and a resolution of $\pm 0.01"$ WC.

TRANSDUCERS

In general any transducer with a suitable output can be used with the Signatrol SL500 and SL700 series. Care should be taken to prevent ground loops, Status Instruments Ltd provides a full range of 4-20mA transmitters and Isolators. Details are available on request.

ORDER CODE - SOFTWARE

SL500-SOFTWARE	SL500-SOFTWARE FOR WINDOWS SL500 SERIES
SL700-SOFTWARE	SL700-SOFTWARE FOR WINDOWS SL700 SERIES

ORDER CODE - DATA LOGGERS

SL501	SL701	Temperature
SL502	SL702	RH and Temperature
SL503*2	SL703*2	AC Current and DC Voltage
SL504	SL704	Pressure RH and Temperature Pressure Sensor Range TBA
	SL705*2	2 Thermocouple Inputs
	SL706*2	7 Thermocouple Inputs
SL507	SL707	7 Process Signal Mixed Inputs
SL507A	SL707A	7 0-25mA inputs
SL507V2	SL707V2	7 0-2.5 Volt inputs
SL507V10	SL707V10	7 0-10Volt inputs
SL508*2	SL708*2	7 thermister inputs
	SL709	Pulse Inputs
	SL710	128K memory Pt-100 Temperature Loggers
	128K OPTION	128K memory SL700s
	1.5M OPTION	1.5M memory SL700 series

*1 Fastread requires optional battery pack (see Accessories data sheet)

*2 optional sensors ordered separately (see Accessories data sheet)