

# Compact High Precision Data Loggers OM-SP Series



OM-SP4000 Process Logger



£353  
Basic Unit



- ✓ Models with Temperature, Temperature and Humidity, AC Current and Universal Process Input
- ✓ Compact Size, Fits in the Palm of Your Hand
- ✓ Bullet Proof Memory Protects your Data
- ✓ Outstanding 12-bit Sensitivity
- ✓ Easy-to-Use Windows Software

The OM-SP is part of OMEGA's NOMAD™ family of low cost portable data loggers. Models are available for Temperature, Temperature and Humidity, AC current and Universal Process input. All models share a rugged compact form factor small enough to fit in the

palm of your hand. Their precision 12 bit analogue to digital converter ensures accurate readings no matter what input type. All models are compatible with an optional easy-to-use Windows software package that allows the user to configure the data logger, download, display and save the stored data.

## OM-SP1700 Series Thermocouple Data Logger

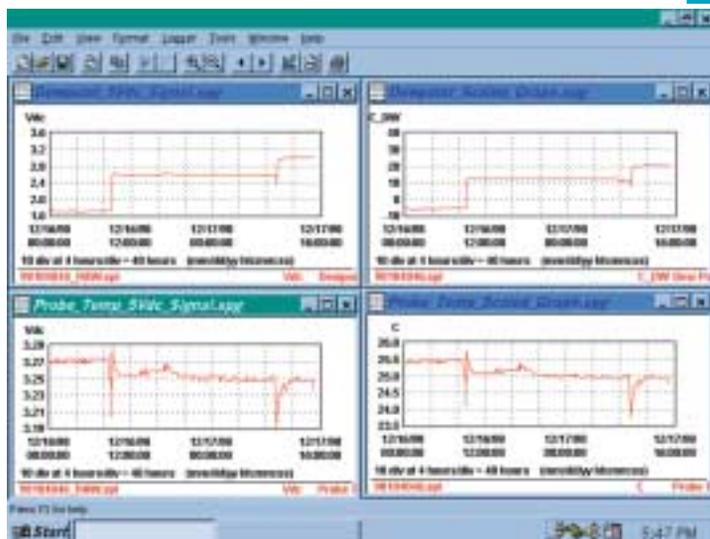
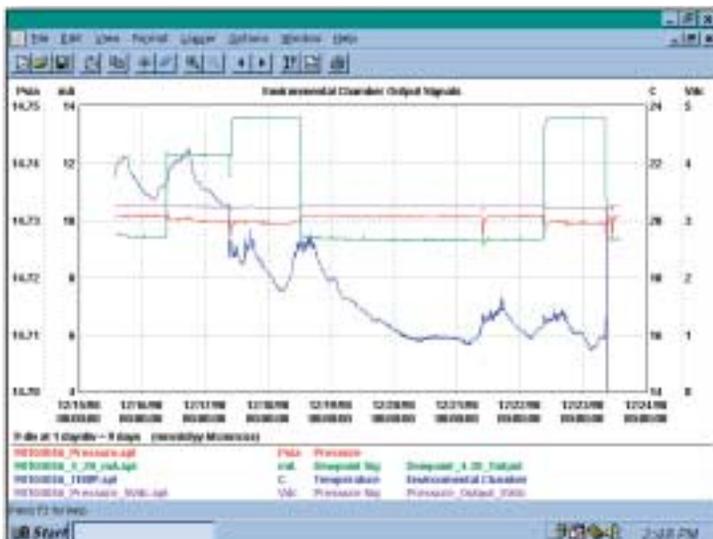
The OM-SP1700 series are designed to accept inputs from commonly available thermocouple temperature sensors. The loggers can be used to record temperatures up to 1760°C. Models are available with one, two or four thermocouple inputs. All units also provide ambient temperature readings. The loggers feature automatic cold junction temperature compensation and linearisation for accurate and reliable readings. The OM-SP1700 is fully compatible with

a broad range of readily-available thermocouple probes in J, K, T, E, R and S types. Each logger is calibrated during manufacture. The software features a simple re-calibration facility. Within minutes, you can calibrate to either 32°C or 212°C or manually to any known temperature within the range of the probe.

## OM-SP2000 Temperature and Humidity Data Logger

The OM-SP2000 can measure and store both temperature and humidity with its on-board temperature and humidity sensors. It features an industrial-proven CMOS IC thin-film polymer RH sensor that delivers unsurpassed accuracy. Designed for worry-free recording, it overcomes the drift, temperature error, hysteresis and slow response times characteristic of other units, while offering outstanding resistance to airborne contaminants





Windows based software provides a variety of graphing options.

and condensation, so you can count on long-term maintenance free monitoring. The Windows based logger software can display temperature graphs in °F or °C, and humidity graphs in %RH or dewpoint units.

### OM-SP4000 Universal Process Data Logger

The OM-SP4000 series loggers are ideal for measuring process signals such as dc voltages and currents. Models are available with one to four voltage or current inputs. The models with current inputs include an excitation switch that allows the logger to control an external current loop power supply (the four channel model provides the excitation switch on channels 1 & 3). With this software-configurable switch the logger can automatically shut off power to loop-powered transducers between readings and conserve external battery power for extended worry-free monitoring.

### Logger Software

The accessory Windows software package makes it easy to download, analyse and display information from any OM-SP series. The software is a full-featured program that includes data logger setup functions such as delayed start, adjustable sample rates, sensor calibration and real-time displays. The program also includes essential graphing and analysis functions such as zooming, automatic and manual scaling, tabular views, and exporting.

### Specifications

#### GENERAL (COMMON TO ALL)

- A/D Conversion:** 12 bit
- Log Rate:** selectable from 10 s to 1/day (in multiples of 10 seconds)
- Memory:** non-volatile, 21,500 samples
- Memory Retention:** >20 years without power
- Power Source:** 3.6 V internal lithium battery
- Battery Life:** 10-year life

at 1 min. sampling (factory replaceable)

**Clock Accuracy:** ±1 min./mo. over full operating range

**PC Interface:** serial port, half-duplex, 19,200 baud

**Enclosure:** injection-moulded ABS plastic

**Size:** 71 x 53 x 18 mm

**Weight:** 62g

**Mounting:** magnetic strip on back

**Environmental:** -40 to 70°C operating temp range and 0 to 95% relative humidity

### OM-SP1700 SERIES THERMOCOUPLE LOGGER

**Input Type:** thermocouple, type J, K, T, E, R and S

**Number of Inputs:** 1, 2 or 4 depending on model

**Accuracy:** see thermocouple accuracy chart below

### Thermocouple Accuracy Chart (°C)

Thermocouple Type	Temperature Ranges	Temperature Range Point		
		Top of Range	Mid Range	Bottom of Range
J	-50 to 900°C (-58 to 1652°F)	0.90	0.95	1.15
K	-100 to 1370°C (-148 to 2498°F)	1.6	1.3	1.8
T	-100 to 350°C (-148 to 662°F)	0.9	1.4	1.9
E	-50 to 740°C (-58 to 1364°F)	0.72	0.66	1.0
R	-50 to 1760°C (-58 to 3200°F)	4.4	4.2	13.75
S	-50 to 1700°C (-58 to 3092°F)	4.7	4.8	12.5



OM-SP3300 AC Current Logger shown with accessory current probes



**Resolution:** see thermocouple resolution chart below

**Input Impedance:**  
>500 K Ohms

**Cold Junction Compensation:**  
automatic using internal thermistor

**Input Connector:**  
screw-type plug-in terminal block  
accepts bare leads

**OM-SP2000 TEMPERATURE AND RELATIVE HUMIDITY LOGGER**

**TEMPERATURE SENSOR (Integral)**

**Sensor:** precision calibrated NTC thermistor; 100 K Ohms @25°C

**Accuracy:** ±0.25°C @25°C, better than 0.5°C over -30 to 50°C

**Resolution:** 0.05°C @25°C, better than 0.2°C over -30 to 50°C

**Humidity Sensor (Integral)**

**Sensor:** capacitive thermoset polymer-base monolithic integrated circuit. Temp compensated over range

**Range:** 0 to 100%RH

**Accuracy:** ±2% over 10 to 90% RH @25°C

**Resolution:** 0.05% RH

**Response time:** <1 min. in slow moving air

**Repeatability:** 0.5% over 0 to 75% RH

**Stability/Drift:** ±1%RH typical at 50% in five years

**Hysteresis:** ±0.8% of span (maximum)

**OM-SP4000 PROCESS INPUT LOGGER**

**Accuracy:** 0.15% FS

**Resolution:** 0.025% F.S.

**Input Connector:** screw-type plug-in terminal block accepts bare leads

**VOLTAGE INPUTS**

**Ranges:** 0 to 1 and 0 to 10 Vdc software switchable

**Input Impedance:** >1 MΩ

**Overload Protection:** 30 V (reverse polarity protected)

**CURRENT LOOP INPUTS**

**Range:** 0 to 22 mA

**Input Impedance:** 50Ω

**Overload Protection:** 60 mA max (reverse polarity protected)

**Thermocouple Resolution Chart (°C)**

Thermocouple Type	Resolution °C @ Mid Range
J	0.27
K	0.37
T	0.31
E	0.19
R	1.2
S	1.4





OM-SP2000 Temperature/Humidity Logger

To Order (Specify Model Number)		
Model No.	Price	Description
OM-SP1700-200	£439	Dual-channel logger, one thermocouple input plus ambient temperature
OM-SP1700-300	530	Three-channel logger, two thermocouple inputs plus ambient temperature
OM-SP1700-500	615	Five-channel logger, four thermocouple inputs plus ambient temperature
OM-SP2000	353	Temperature, humidity and dewpoint logger
OM-SP4000-1CW	373	Single-channel process logger with 4 to 20 mA input and excitation switch
OM-SP4000-101	373	Single-channel process logger with voltage input
OM-SP4000-4CW	455	4-channel process logger with 4 to 20 mA inputs and excitation switch on channels 1 & 3
OM-SP4000	530	Five-channel process logger with 2 voltage inputs, two 4 to 20 mA inputs, plus ambient temperature reading and excitation switch

All loggers include a complete user's manual

Ordering example: OM-SP1700-200 is a single input thermocouple logger and OMEGACARE<sup>SM</sup> 1-year extended warranty on OM-SP1700-200 (adds 1 year to standard 1-year warranty), OM-SP-SFW-IC logger software and cable, £439 + 49 + 78 = £566

## Accessories

Model No.	Price	Description
OM-SP-SFW-IC	£78	Windows based logger software and interface cable
OM-SP-ENC1	66	IP66 (NEMA 4X) weather proof enclosure for one logger(works with all models)
OM-SP-ENC	33	Logger jacket (breathable moisture dust protector for OM-SP2000)
OM-SP-ENC-SC	4.10	Strain relief connector for OM-SP-ENC1