

# OM-SP Series

## Compact High Precision Data Loggers

**\$565**  
Basic Unit



OM-SP4000, \$680, process logger shown larger than actual size



- ✓ **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 analog to digital converter insures 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.

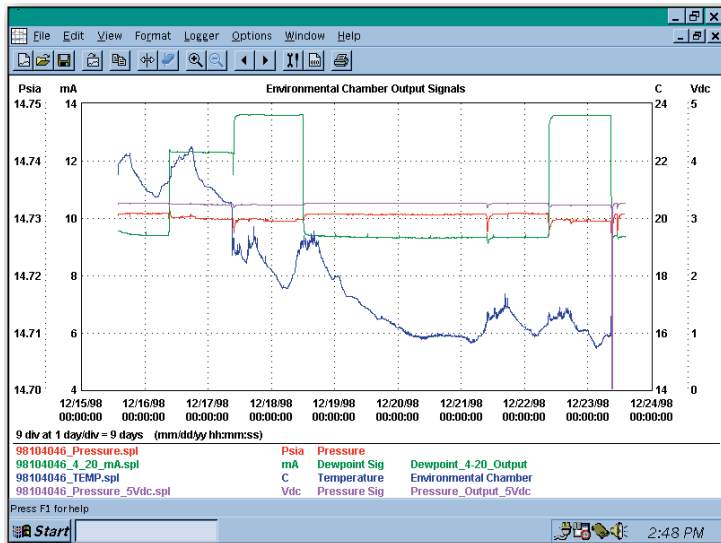
### OM-SP1700 Series Thermocouple Data Logger

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 3200°F (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 linearization 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 with standards traceable to the National Institute of Standards (N.I.S.T). 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



Windows based software provides a variety of graphing options.

other units, while offering outstanding resistance to airborne contaminants 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, analyze 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.

The software is compatible with Windows 95, 98 or NT version 4.0.

### 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-molded ABS plastic

**Size:** 2.8 x 2.1 x 0.7" (71 x 53 x 18 mm)

**Weight:** 62g (2.2 oz)

**Mounting:** Magnetic strip on back

**Environmental:** -40 to 70°C (-40 to 158°F) 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

**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 (-22 to 122°F)

**Resolution:** 0.05°C @25°C, better than 0.2°C over -30 to 50°C (-22 to 122°F)

**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 M

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



OM-SP2000, \$455, logger shown smaller than actual size

**CURRENT LOOP INPUTS**

**Range:** 0 to 22 mA

**Input Impedance:** 50

**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

**ALL MODELS AVAILABLE FOR FAST DELIVERY!**

**To Order (Specify Model Number)**

Model No.	Price	Description
OM-SP1700-200	565	Dual-channel logger, one thermocouple input plus ambient temperature
OM-SP1700-300	680	Three-channel logger, two thermocouple inputs plus ambient temperature
OM-SP1700-500	790	Five-channel logger, four thermocouple inputs plus ambient temperature
OM-SP2000	455	Temperature, humidity and dewpoint logger
OM-SP4000-1CW	480	Single-channel process logger with 4 to 20 mA input and excitation switch
OM-SP4000-101	480	Single-channel process logger with voltage input
OM-SP4000-4CW	585	4-channel process logger with 4 to 20 mA inputs and excitation switch on channels 1 & 3
OM-SP4000	680	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, \$535 + 60 + 75 = \$670.

**Accessories**

Model No.	Price	Description
OM-SP-SFW-IC	105	Windows based logger software and interface cable
OM-SP-ENC1	85	NEMA 4X (IP66) weather proof enclosure for one logger(works with all models)
OM-SP-ENC	45	Logger jacket (breathable moisture dust protector for OM-SP2000)
OM-SP-ENC-SC	5	Strain relief connector for OM-SP-ENC1



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