



# Microprocessor Based Portable Datalogger

Model OM-190



**\$2225**  
Basic System

- ✓ 16 Universal Input Channels
- ✓ 16 Math Channels
- ✓ 5 Storage Modes—Adaptive, Point Store, Alarm Point Store, Enhanced Point Store and Manual Point Store
- ✓ Portable, Battery Powered
- ✓ Includes Powerful Windows Data Analysis and Reporting Software

The OM-190 is a general purpose datalogger designed to serve a wide variety of applications such as plant maintenance, environmental and process monitoring. It can be used for troubleshooting motors and valves, monitoring process variables such as temperature, pressure, flow and relative humidity as well as

other applications. The OM-190 accepts up to 4 universal input plug in boards that are available in either 4 channel isolated or 4 channel non-isolated models for a total of up to 16 input channels. A particular input channel's measurement configuration is selected via menu selections. Simply connect the

Thermocouple probe sold separately.



# Model OM-190s

inputs to the barrier strips provided on the input boards after channel configuration has been selected. An auxiliary port is provided on the datalogger to accept data packs for off loading data. An RS-232 port is also provided for serial communications between the OM-190 and a PC. The serial port is capable of 300 to 19.2 Kbaud (38 Kbaud playback only).

## Storage Modes

The Model OM-190 datalogger offers five modes of storing data; Adaptive Store, Point Store, Enhanced Point Store, Store on Alarm and Manual Store.

## Adaptive Store

Adaptive Store is a process designed to collect data in a most efficient, accurate way allocating memory to data storage based on signal dynamics. The result is that both trends and anomalies are accurately recorded. The datalogger samples as fast as possible to provide a true picture of transients, applying more memory to them than to trend data. The sample rate is fixed at 500 ms for recording lengths under 8 days, 1 second for recording lengths of 8 to 15 days and 2 seconds for recording lengths over 15 days. This is the best mode for capturing anomalies and trend data over long periods of time and is the most efficient use of memory. Maximum recording length is 999 days. Sample rate is always 500 ms with recharger plugged in.

## Point Store

The Point Store mode is found in most conventional dataloggers. The storage principal is that every sample taken is stored in memory with its associated time. With the OM-190, you have the ability to select the sample rate and the length of the recording facilitating optimum use of the datalogger's memory. Either variable can be respecified during setup. If the combination of these two variables is not compatible, the last variable programmed is the primary condition and the OM-190 will respecify and display the other to be within the system capability. Available sample intervals are 12, 8, 4, 3, 2 and 1 hours; 30, 15, 10, 5, 2,

and 1 minutes; 30, 10, 5, 2 and 1 seconds; 500, 250, 125 and 62.5 ms. The recording length is programmable between 1 second and 999 days, an ideal mode for long term trend recording at fixed intervals.

## Enhanced Point Store

This is a variation of Point Store and Adaptive Store modes. In this mode, data is stored as described above in the Point Store mode with the additional advantage of being able to store the maximum and minimum values and their associated times as they occur between the sample interval selected and the average of

all samples in the sampling period. This way much more information is available for analysis. The available sample intervals are the same as in Point Store mode, however, the maximum primary rate is 10 seconds. The secondary sample rate is one second for recording of 7 days or less and two seconds for recording longer than 7 days. This mode is the ideal choice for collecting data at required intervals and for detecting anomalies needed for analysis and troubleshooting at the same time. Anomalies are detected and stored because of the faster secondary sample rate.



## Store On Alarm

The Store on Alarm mode also offers two alarm storage techniques called Burst and Continuous. In Burst mode, data will be stored for an alarm condition at the secondary sample rate for a predetermined number of samples before and after the alarm detection. Storage will then resume at the primary sample rate. The predetermined number of samples is calculated by the ratio of primary to secondary storage rate with a maximum number of  $\pm 50$  for 7 or less channels and a maximum of  $\pm 32$  for 16 channels. For

example, if the primary storage rate is every 10 seconds and the secondary storage rate is every one second, then the ratio would be 10 and the number of burst samples would be  $\pm 10$  from the alarm threshold. If the primary rate is 30 seconds and the secondary rate is one second, then the number of burst samples would be  $\pm 30$ .

## Manual Store

The Manual Store mode is very useful for collection of data that may not be time related. In this mode, data points are stored for all active

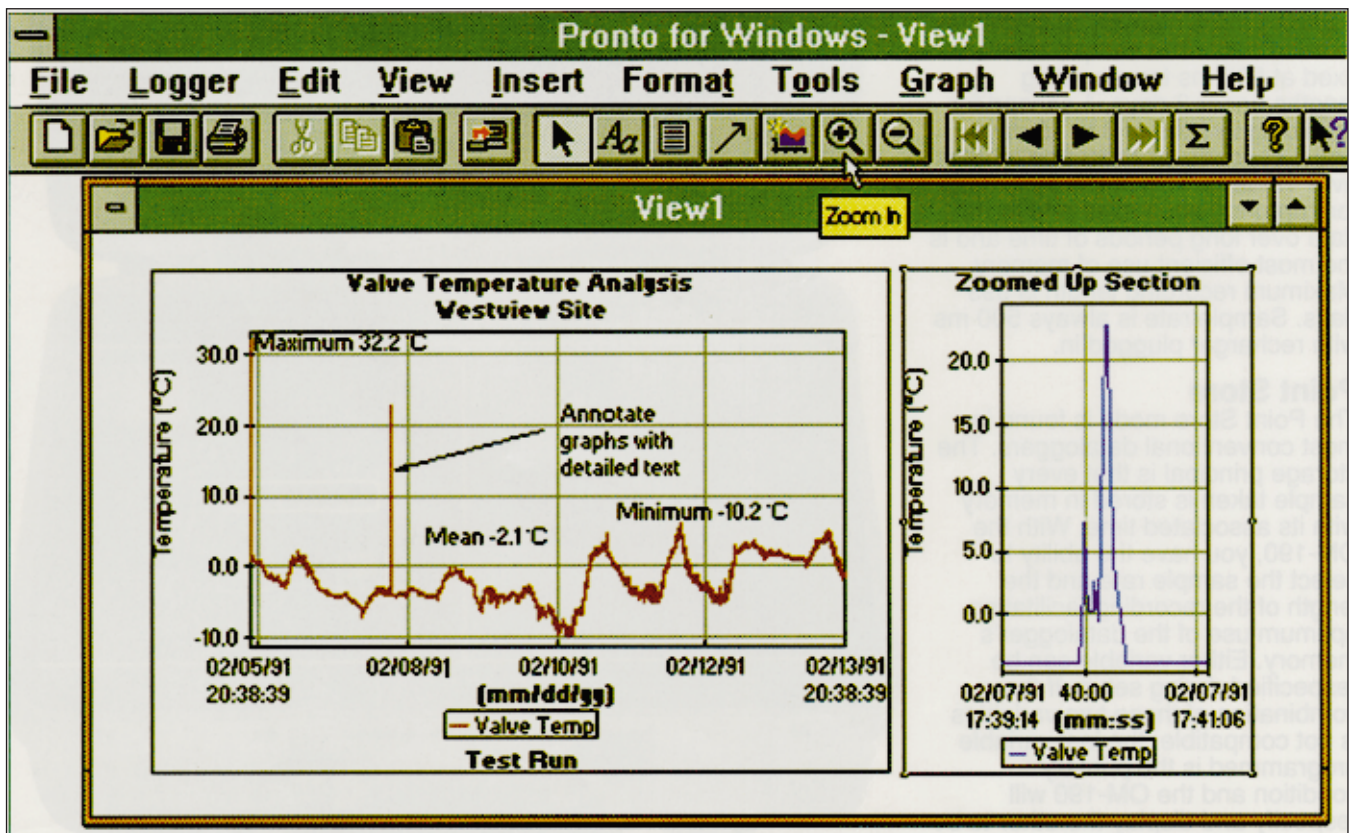
channels at the operators discretion. Storage is initiated by pressing the right hand key on the datalogger for every desired sample to be stored. Each sample is stored with its associated time and date as well as a sample number sequentially assigned by the OM-190. For an OM-190 datalogger with 512K memory, the total number of samples that can be stored for the worst case (32 active channels) would not be less than 7323. For one active channel it would be approximately 83,000.

## SWD-PRONTO-WIN Windows Software

Pronto for Windows is a full featured Windows based program that is included with the OM-190 Series dataloggers. Through the use of straightforward macros and keyboard commands, the operator can graph and analyze data and create hard copy reports. Selection of icons from the toolbar makes all commonly used instructions such as

zooming, statistical analysis, printing, annotation and playback as easy as pointing and clicking the mouse. File management is greatly improved through the use of projects which define how the data will be stored and grouped and views which define how the data will appear on screen and in reports. Easy to follow dialog boxes provide step-by-step choices for all data management tasks. A

multifunctional communication set allows interface to dataloggers by serial port, local area network or modem, all in the same program. A comprehensive context sensitive help system provides detailed instructions anywhere in the program. Interface to other application software such as spreadsheets or word processors is quick and easy using the Windows clipboard or object linking (OLE).



## Specifications

### General

**No. of Inputs:** 4, 8, 12 or 16 universal analog input channels

**No. of Math Channels:** 16

**Analog Conversion:** 16 bits

**Accuracy:**  $\pm 0.025\%$  of full scale

**Resolution:** 100  $\mu\text{V}$

**Linearity:**  $\pm 0.03\%$  of full scale

**Temperature Coefficient:** less than 0.01% change per 1 °C

**Noise Rejection:** 50/60 Hz programmable

**Input Impedance:**  $10^{12}$  Ohm (typical)

**Crosstalk:** -80 dB typical channel to channel

**Clock Accuracy:** 10 ppm typical; maximum error 30 seconds/month

**RAM Storage:** 512 KB (model OM-190); 1024 KB (model OM-190E)

**Recording Modes:** adaptive store, point store, alarm point store, enhanced point store, manual store

**Adaptive Recording Rate:** 0.5, 1 or 2 sec depending on recording length (selectable from 1 sec to 999 days)

**Point Store Rate:** selectable from 62.5 ms up to 12 hours

**Recording Capacity:** 1 to 16 inputs with any record up to 999 days

**Power:** 3.65 to 4.5 Vdc from internal batteries; continuous power is available from ac adapter/charger

**Batteries:** 500 mAh NiCad D Cells 3.8 Vdc typical; provides minimum operation of 25 hours with full charge at 25 °C

**Battery Charge:** minimum 32 hour charge time from full discharge to 100% charge

**Memory Backup:** channel setups and recorded data are protected against loss for a minimum operation of 60 days with full charge at 25 °C

**RS-232 Interface:** serial port capable of 300 to 19.2 KB (38.4 KB for playback only); used to transfer data and for external control

**I/O Ports:** inputs—4 card slots accept universal input modules; auxiliary ports—accepts other communication modules including data packs, LAN cards, alarm card, plot-on demand module and configuration module; RS-232 port—300 to 19.2 KB (38.4 KB for playback only); charger—4 Vdc battery charger input

**Operating Temperature:** 14 to 140°F (-10 to 60°C), 5 to 90% RH non-condensing

**Storage Temperature:** -4 to 158°F (-20 to 70°C)

**Shock and Vibration:** MIL-STD 810 Method 514.2

**Enclosure:** ABS polycarbonate

**Dimensions:** 13.4" L x 8.9" W x 5.6" H (340 x 226 x 142 mm)

**Weight:** 10 lbs (2.2 kg)

**FCC Compliance:** Class A, paragraph 15, subpart J

**Display:** 2 line LCD, 16 characters/line

**OM-190-POD-4001, OM-190-POD-4002 UNIVERSAL**

## ANALOG INPUT MODULES

### Analog Inputs:

**POD-4001:** selectable from 0-100 mV; 0-2 V; 4-20 mA (100 Ohm); thermocouple types J, K, T, N, R, S and C; 100 Ohm Pt RTD,  $\alpha = 0.00385$ ; 2252 Ohm thermistor; relative humidity; 0-600 Vac; 0-1 Aac; 0-5 Aac

**POD-4002:** selectable from 0-100 mV; 0-2 V; 4-20 mA (100 Ohm); thermocouple types J, K, T, N, R, S and C.

### To Order (Specify Model Number)

Model No.	Price	Description
OM-190	\$1745	Logger with 512 K memory
OM-190E	2190	Logger with 1024K memory

*Dataloggers come complete with OM-180-RR-123 recharger, Windows software, serial interface cable with DB9F termination and operator's manual. Input modules and accessories ordered separately.*

**Ordering Example:** OM-190E logger with 1024K memory, four OM-190-POD-4002 4 channel isolated universal analog input modules. \$2190 + 4 (795) = **\$5370**.

### Input Modules

Model No.	Price	Description
OM-190-POD-4001	\$480	4 channel non-isolated universal analog input module
OM-190-POD-4002	795	4 channel isolated universal analog input module

### Accessories

Model No.	Price	Description
OM-180-RR-123	\$ 68	120 Vac 50/60 Hz fast recharger (4 Vdc @ 225 mA)
OM-180-RR2-261	395	Data pack reader/writer
OM-180-COM-506	102	LAN RS-485 module
OM-170-COM-550	120	Alarm output module (8 channel TTL)
OM-170-CFG-580	185	User configuration module
OM-180-DPK-568	565	512K data pack
OM-180-DPK-570	655	1024K data pack
OM-190-COM-532	252	Plot-on demand module
OM-170-RR2-251/250	185	Clamp-on CT (0-40/ 0-10 Aac)
OM-170-RR2-252	440	RH/temperature probe with 30 ft cable
OM-190-RR2-485	240	RS-232 to RS-485 converter with power supply
OM-190-RR2-528	665	4" ac/dc powered printer/plotter
OM-190-RR2-541	225	14.4 KBaud modem
OM-190-RTP-528	55	Thermal chart paper for OM-190-RR2-528 printer/plotter (5 rolls/pkg)
OM-190-POD-250E	245	0-600 Vac/0-1000 Aac (1000:1) external ac module
OM-190-POD-253E	245	0-600 Vac/0-1000 Aac (1000:5) external ac module