OMP-MODL Modular Portable Datalogging and Alarming System

From

$1580
Basic Unit

- ✔ **Modular Design Allows Flexibility to Meet Your Application Requirements**
- ✔ **Fully User Programmable Via Graphic Drag-and-Drop Icons**
- ✔ **Expandable to 24 Universal Analog Inputs**
- ✔ **Accepts Thermocouple, Voltage, Current, Frequency, RTD, Thermistor and Resistance Inputs**
- ✔ **Up to 48 Digital Inputs/Alarm Outputs**
- ✔ **One High-Speed Counter/Event Input**
- ✔ **Conditional Logging, Math, Integrals, Delta Logging and Much More**
- ✔ **Low Power for Battery or Line Powered Use**
- ✔ **Full Differential, Bipolar Inputs**
- ✔ **Modem Option with Pager Alarm Output**
- ✔ **Real-Time Trending to a PC Via Modem or RS-232 Link**
- ✔ **16,000 Sample Capacity (up to 400,000 When Using PCMCIA Memory Card)**
- ✔ **Provided Complete with HyperWare Windows Software**

The OMP-MODL Modulogger is a self-contained, battery or line-powered datalogger and alarm system, which can be deployed as a "stand-alone" system, or incorporated into equipment where it silently samples digital and analog inputs, storing them to internal or PCMCIA memory. Easily programmed, the OMP-MODL has extremely powerful processing capabilities for data reduction (averaging, min/max, etc.) mathematical manipulation (algebraic, trig, time integrals, etc.) as well as unlimited, user-programmable, intelligent data logging capabilities. Together with the supplied Hyperware for Windows software, the OMP-MODL is a powerful, fully user programmable datalogging and alarming system. The Hyperware software provides for graphical programming of the OMP-MODL, serial communications, real-time trending, plotting and spreadsheet conversion of collected data. The OMP-MODL consists of a user specified stack of ruggedly packaged, rectangular modules. The main CPU module can be expanded with additional analog inputs, digital I/O, display and memory expansion modules to meet your specific application needs.

CPU Module

A CPU module is required in all OMP-MODL systems as it contains the system microprocessor, data storage memory, 13 bit Analog to Digital converter basic user switches and indicators, RS-232 port and Cold Junction Compensation circuitry. It also includes four alarm outputs, four universal analog inputs, and one digital count/event input. The provided analog inputs are software configurable for 6 thermocouple types, 15 ranges of DC voltage or 7 ranges of DC current (identical function/specs as add-on OMP-MLIM-1 Module). Each of the analog input channels sports full differential inputs, software programmable configuration, front-end
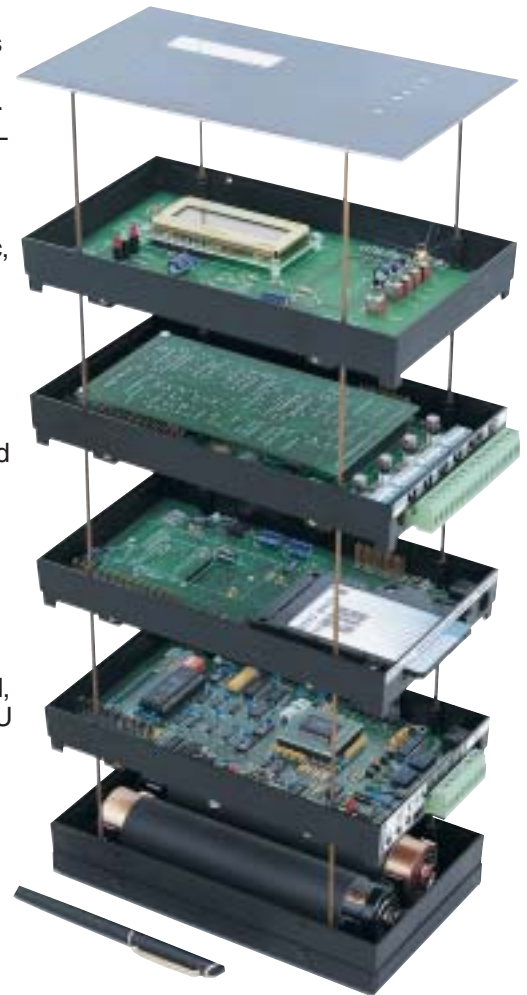
Modulogger Expanded View

completion circuitry and rugged suppression protection circuitry to insure reliable accurate readings. The CPU module also includes a Cold Junction Compensation input for thermocouple applications. If thermocouples are not used, the CJC channel can be used as a system temperature, resistance, thermistor, or contact closure input. A single software configurable, general-purpose digital input is provided for logging of events or

counting pulse outputs from flow meters, encoders, or other pulse-train type sources. The CPU module also provides two isolated alarm relay outputs, a TTL alarm output, a Status LED and a regulated, current-limited 5 Vdc output, all controllable via software. "Enable", "Stop" and "Reset" switches as well as LED status indicators are provided at one end of the CPU module. Input and Output wiring is handled through plug-in terminal strips which allow for mass connection and disconnection of wiring.

Expansion Modules

A full family of plug-on modules is available to expand the capability and features of the system. Modules are available for additional analog inputs, digital I/O, modem communication, PCMCIA memory card interface, user interface/display, and battery power. As modules are added, they stack onto the CPU module, building a layered instrument to meet your needs. Modules are self-identifying and configurable via the Hyperware software for input type and range within the module's capability (e.g., the MLIM-4 accepts 2, 3, and 4 wire RTD, resistance and thermistor inputs each with a multitude of ranges, all under software control).

Applications

Designed for portable, plant floor, and long-term remote data collection applications, the OMP-MODL incorporates low power CMOS circuitry to provide up to 4 weeks of operation from its optional plug-on D-cell battery pack. A low-voltage power transformer can be used for indefinite logging.

Software

HyperWare for Windows is a powerful multi-purpose software package provided with the OMP-MODL. It facilitates serial communications, provides for graphic programming of the OMP-MODL, real-time data trending, collected data graphic plotting and data export to other applications, such as Microsoft Excel.
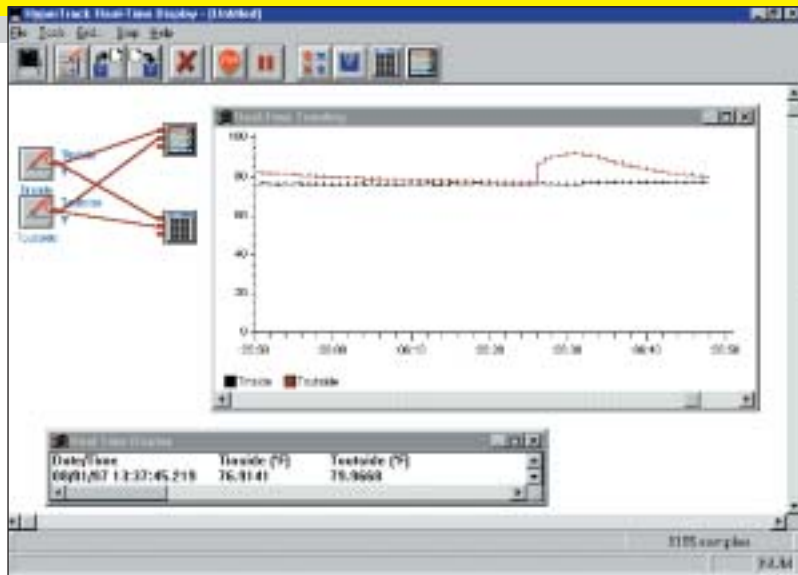
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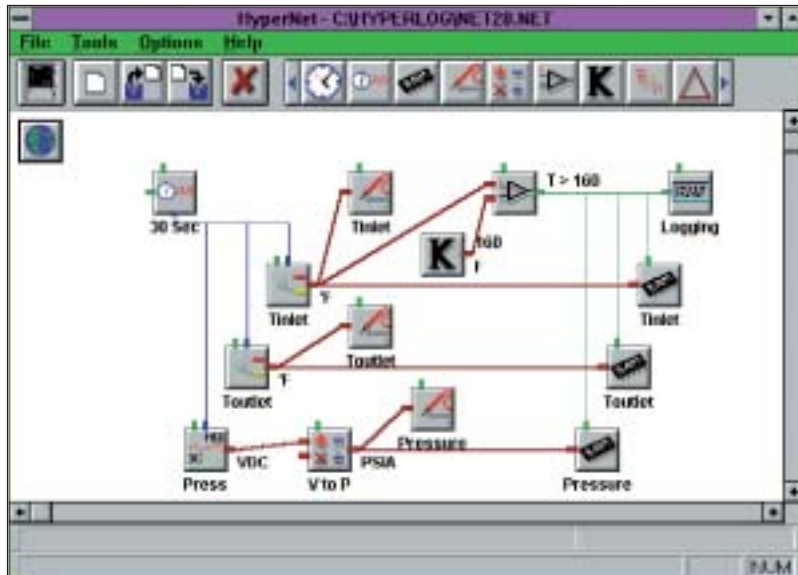
Drag and Drop Graphics Programming
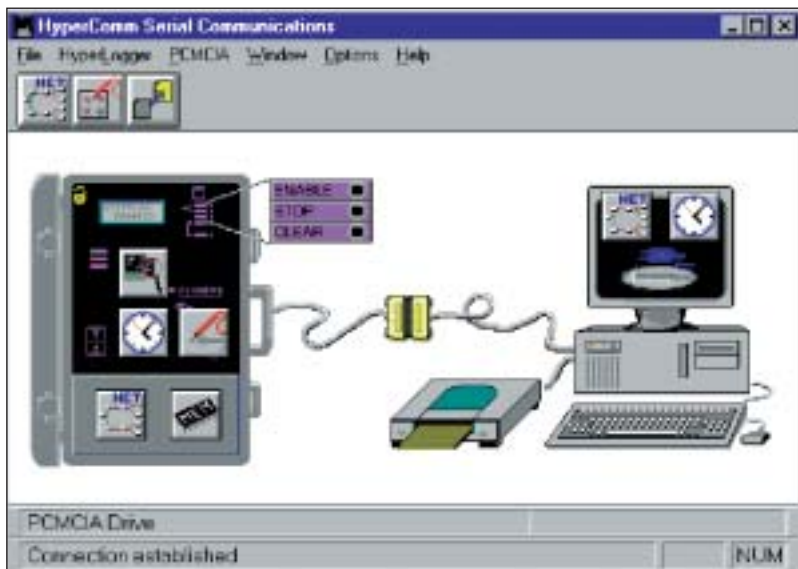
Graphic RS-232/Modem Communications

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Specifications

Data Storage Memory:
Redundant battery backed up SRAM. Approx. 16,000 samples for OMP-MODL and up to 80,000 with OMP-MNL-EXM. Up to 500,000 reading when using PCMCIA memory cards.

Data Memory Backup:
Lithium cell, 1 year @ 25°C

Memory Utilization:
User programmable; Stops either when memory is full, or rotary (FIFO).

A/D Converter: 12-bit plus sign (13 bit) SAR converter. Programmable first-order filtering and 50/60 Hz noise rejection options.

A/D Converter Accuracy:
±0.1% RDG + 1 bit

Sampling Throughput Rate:
150 samples per second max. (analog input to memory); rate is dependent on number and type of channels and programmed signal processing. Sampling rates are configurable for each channel.

Digital Input:
One general purpose digital input channel. User programmable for event or high-speed counter applications. Contact closure or TTL driven signal input (15 Vdc max)

Outputs:
2 low voltage N.O. relays, 500 mA rated; 1 current limited TTL digital output; 100 mA @5 Vdc regulated output (short circuit protected)

Real-Time Clock: Date and time, 24 hour battery backed up

Glitch Recovery:
Hardware watchdog reset followed by software restart of last operation.

Power Consumption:
9 Vdc nominal. Approx. 5 mA between readings, approx. 50 mA during readings provided by optional battery pack (6 internal D-cells)

External Power:
Terminal strip connection for external power source. Accepts 10-32 Vdc or 10-26 Vac from any semi-regulated external source (120 Vac wall adapter is included with OMP-MNL). Fuse and Transzorb protected.

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

Mechanical:
Dust sealed. 8.8 W x 4.8 H x 2.2" D (3.8" H with battery pack attached) 1.5 lb. (3 lb. with battery pack)

Expansion Modules:
Modular design allows flexibility to meet your specific application requirements. The following modules may be mixed and matched (5 modules can be attached).

Cold Junction Compensation Range (CJC):
-10 to 60°C (14 to 140°F)

DC VOLTAGE INPUTS

Full Scale Ranges:
±20 mV, ±40 mV, ±50 mV, ±60 mV, ±100 mV, ±200 mV, ±1 V, ±2 V, ±5 V, ±10 V, ±30 V

Accuracy:
±0.5% F.S. for ±10 V and +30 V range. All other ranges ±0.3% F.S.

Common Mode Range:
3.5 Vdc, full differential inputs.

Input Resistance:
>2.5 M for 5, 10, and 30 Vdc; >10 M for all other ranges.

DC CURRENT INPUTS

Full Scale Ranges:
±200 µA, ±400 µA, ±500 µA, ±1 mA, ±2 mA, ±11 mA, ±22 mA

Accuracy:
±0.3% F.S.

Input Resistance:
100 Ω (all current ranges)

OMP-MLIM-2, 4 INPUT/4 OUTPUT COUNTER/TIMER/EVENT INTERFACE MODULE

Provides 4 individually programmable channels of digital signal input and 4 outputs. Any combination of the following input types can be configured on a module:

Frequency:
5 Hz to 30 KHz, 300 mV p-p minimum input amplitude, 15 V p-p maximum

Event:
Contact closure or TTL input (0 to 15 Vdc max). 1 second resolution (or 5 msec in millisecond mode). Software controlled 50 msec debounce option.

Counter:
Contact closure or TTL input (0 to 15 Vdc max). 20 KHz maximum input frequency. Software controlled 50 msec debounce option. 16 million maximum accumulated counts between reads.

Digital Outputs:
(4 separate channels): Low output = tri-state (floating); High output = 4.0 Vdc @ 1 mA, 3.2 Vdc @ 10 mA. Short circuit protected. Max current = 12 mA (approx.) per channel.

OMP-MLIM-8, 8 CHANNEL DIGITAL I/O INTERFACE MODULE

Eight channel digital I/O allows for user configuration of 8 channels as inputs or outputs (individually selectable)

Input Signal:
Contact closure or TTL input (0 to 26 Vdc max). 1 second resolution (or 5 msec in millisecond mode). Software controlled 50 msec debounce option.

Output Signal:
Low output = tri-state (floating); High output = 4.0 Vdc @ 3 mA, short circuit protected. Max current = 3 mA (approx.) per channel.

OMP-MLIM-4, 4 CHANNEL RTD/THERMISTOR/RESISTANCE INTERFACE MODULE

Measures any combination of the following input types:

RTD:

Type:
100 Ω and 1000 Ω
α = 0.00385 and 0.00392

Ranges:
-200 to 850°C and
-200 to 300°C

Accuracy: ±0.1°C to 0.4°C depending on range and wiring configuration

Configurations Supported: 2-wire, 3-wire, and 4-wire. (3 and 4 wire configurations use 2 input channels)

THERMISTOR:

Thermistor Type: 10k @ 25°C (Fenwall #16 or equivalent)

Ranges:
-32 to 180°C; -4 to 180°C; 10 to 180°C; 25 to 180°C

Accuracy:
±0.2°C to ±0.5°C depending on range.

RESISTANCE:
Ranges: 12 ranges, from 200 Ω Full Scale to 400,000 Ω Full Scale
Accuracy: ±0.1 to ±0.3% of Rdg. Depending on range and wiring configuration.
Configurations Supported: 2-wire, 3-wire, and 4-wire. (3 and 4 wire configurations use 2 input channels)

Thermocouple Input Ranges

Thermocouple		Maximum Range		Accuracy*	
J	Iron-Constantan	0 to 760°C	32 to 1400°F	±1°C	±1.8°F
K	CHROMEGA®-ALOMEGA®	0 to 1370°C	32 to 2498°F	±1.2°C	±2.2°F
E	CHROMEGA®-Constantan	-100 to 1000°C	-148 to 1832°F	±1°C	±1.8°F
T	Copper-Constantan	-160 to 400°C	-256 to 752°F	±1°C	±1.8°F
R	Pt/13%Rh-Pt	0 to 1000°C	32 to 1832°F	±10°C	±18°F
S	Pt/10%Rh-Pt	0 to 1750°C	32 to 3182°F	±10°C	±18°F

* Plus ±0.5°C CJC accuracy

To Order *(Specify Model Number)*

Model Number	Price	Description
OMP-MODL*	$1840	Portable datalogging system with 16,000 reading memory. Includes Hyperware software, serial cable, AC adapter and user manual
OMP-MODL-EXM*	1940	Portable datalogging system with 80,000 reading memory. Includes Hyperware software, serial cable, AC adapter and user manual
OMP-MODL-OEM	1580	Portable datalogger with 16,000 reading memory. Does not include software, cables, AC adapter or user manual
OMP-MODL-EXM-OEM	1680	Portable datalogger with 80,000 reading memory. Does not include software, cables, AC adapter or user manual

*Note: OMP-MODL-TOP and OMP-MODL-BACK are required if not using the OMP-DISP and OMP-MNL-BATT. See Options and Accessories.
Ordering Example: OMP-MODL** with **OMP-MNL-BATT** and **OMEGACARE**ᔆᴹ 1 year extended warranty for OMP-MODL (adds 1 year to standard 1 year warranty), $1840+ 65 + 150 = **$2055.

Options and Accessories

Model Number	Price	Description
OMP-ML-DISP-MDL	$180	Display Module with 2 line x 16 character LCD and front panel user switches
OMP-MLIM-1	320	Analog interface module; 4 channels of thermocouple, DC voltage and/or DC current inputs (individually selectable)
OMP-MLIM-2	320	Digital interface module; 4 channels of frequency, event, and/or count input (individually selectable), plus 4 digital outputs
OMP-MLIM-4	320	Resistance interface module; 4 channels of RTD, thermistor and/or resistance inputs (individually selectable)
OMP-MLIM-5	120	PCMCIA interface module; includes socket for SRAM memory cards (requires PCMCIA SRAM card)
OMP-MLIM-8	260	Digital I/O interface module; 8 channels, individually configurable as inputs (contact closure or TTL) or outputs (0-4 V @ 3 mA)
OMP-MODL-TOP	12	Top cover plate (required if OMP-DISP is not used)
OMP-MODL-BACK	24	Back cover/mounting plate (required if OMP-MNL-BATT is not used)
OMP-MLIM-5-144	340	Modem/PCMCIA interface module; includes 14400 baud modem and socket for SRAM memory cards (requires PCMCIA SRAM card)
OM-320-MC-50*	120	PCMCIA SRAM memory card - approx. 65,000 samples (requires any OMP-MLIM-5 interface modules)
OM-320-MC-200*	260	PCMCIA SRAM memory card - approx. 250,000 samples (requires any OMP-MLIM-5 interface modules)
OM-320-MC-400*	360	PCMCIA SRAM memory card - approx. 500,000 samples (requires any OMP-MLIM-5 interface modules)
OM-320-PD-1	280	PCMCIA drive connects to IBM PC serial port for reading data from PCMCIA SRAM cards. Includes software drivers
OMP-MNL-BATT	65	Battery pack module (w/ 6 D-Cells). Attaches to OMP-MNL dataloggers
OM-220-RPS-1	395	Rechargeable power supply for sensor excitation and auxiliary logger power. Dual outputs programmable from 3.5 Vdc-22 Vdc
OM-220-CHGR-12	68	Battery charger for stand-alone charging of batteries when not installed in OM-220-RPS-1 (115 Vac input)
OMP-PVK-24-10	320	10 watt photovoltaic panel for solar recharging of OM-220-RPS-1, with pole mounting bracket (12/24 volt output)
OMP-PB-200-AC	295	AC current clamp-on current probe, 10-200 Aac to 0-2 Vdc output. Connects directly to any OMP-MODL datalogger input screws.
OMP-PB-200-DC	495	DC current clamp-on current probe, 1-200 Adc to 0-2 Vdc output. Connects directly to any OMP-MODL datalogger input screws. Requires AC power.

* The number of readings that each PCMCIA can store depends on the types of inputs that you are storing. For example, Digital I/O uses less memory than Analog inputs, so you can store more readings, therefore, the values listed above are approximations.

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