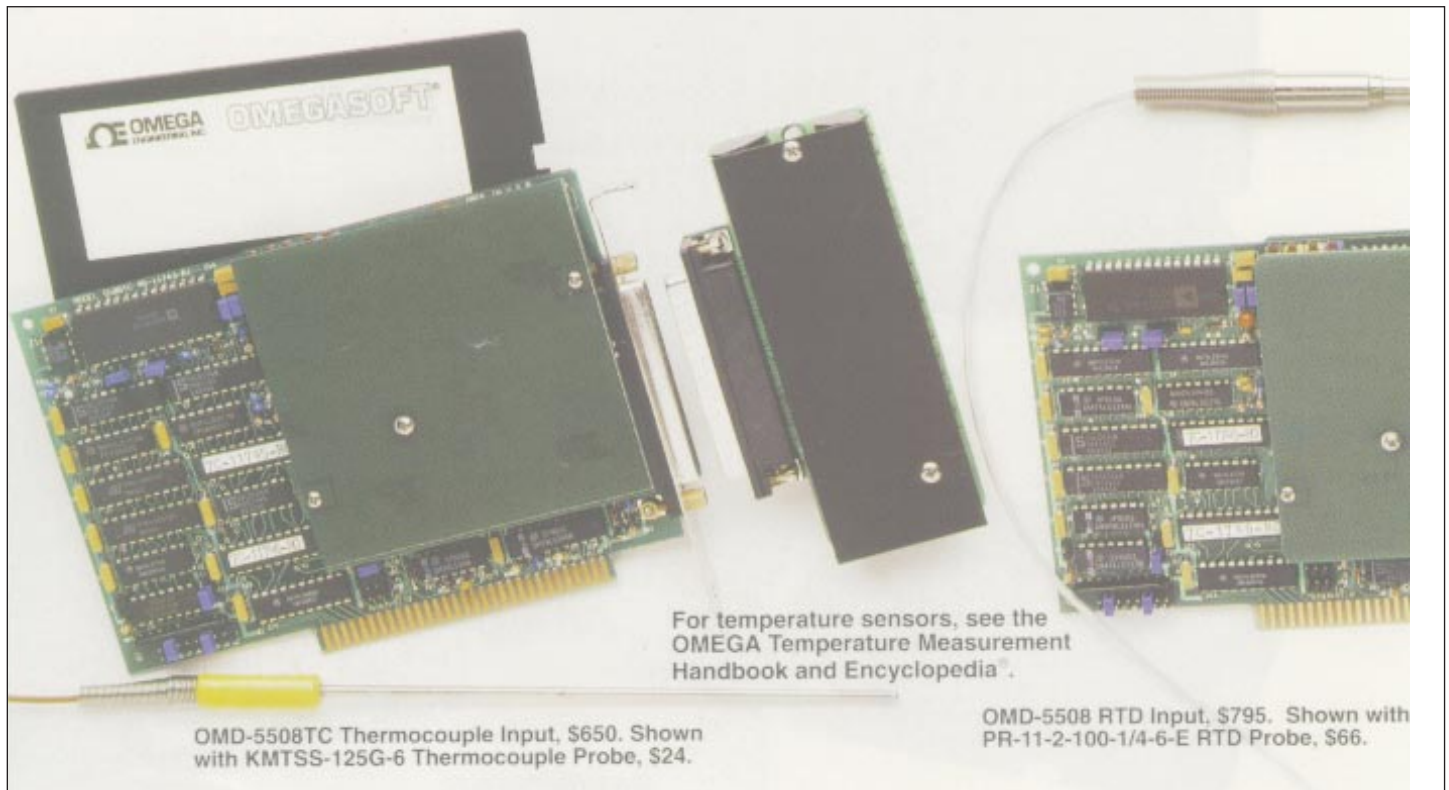


Plug-In Cards with Direct Connection to Thermocouples, RTDs and Strain Gages



OMD-5508 Series

\$650
Basic Unit



- ✓ Connects Directly to Thermocouples, RTDs, Strain Gages
- ✓ 8 Differential Analog Inputs
- ✓ 12 Bit Resolution
- ✓ High Speed A/D Throughputs
- ✓ Simplifies Signal Connection and Eliminates Cabling
- ✓ Detachable Screw Terminal Mates with Board Connector at Rear of PC
- ✓ On-Board Signal Conditioning Lets Boards Accept Field Wiring Directly
- ✓ Menu-Driven Software Included

The OMEGA OMD-5508 Series offers a unique approach to plug-in data acquisition. Designed to simplify signal connection and eliminate cabling costs, each I/O module contains a detachable screw terminal panel that mates with the board connector at the rear of

the PC. On-board signal conditioning allows the boards to connect to sensors directly, eliminating the need for expensive external signal conditioning and ribbon cabling.

Three different models are available to provide direct connection to thermocouples, RTDs and strain gages. These boards are ideally suited for medium speed data acquisition with sample rates up to 8000 samples per second (7000 samples per second for OMD-5508BG). For high speed strain measurements, a faster version (200 kHz) of the OMD-5508BG with anti-aliasing filtering is available. Consult Engineering for details.

All OMD-5508 boards include utility software which not only supports data collection but also greatly facilitates configuring the boards. The software, supplied on a single floppy with no need for a user's manual, is a complete I/O board tutorial on a diskette. The friendly menu-driven interface guides the user through board jumper settings, with help screens to explain the function of each jumper. Once the board has been configured for your application, the software can be used to perform low speed (1 Hz) data acquisition on all channels, expressing the data as temperature or strain. The software performs real time display and storage of data to an ASCII file.

The boards are supplied with one mating screw terminal panel to accept field wiring. For portable applications, extra terminal panels may be purchased.

OMD-5508 Series For IBM PC/XT/AT and 386 Compatibles



D1
ANALOG INPUT AND
MULTI-FUNCTION CARDS

See Page No. D1-9 for Specifications
and Ordering Information

OMD-5508TC Ranges/Accuracy

Input Type	HW Range	SW Range	Resolution	HW Accuracy, ±0.01% rdg	SW Accuracy+ hardware ±0.01% rdg
mV	-100 to 100 mV -50 to 50 mV -25 to 25 mV -12.5 to 12.5 mV	-100 to 100 mV -50 to 50 mV -25 to 25 mV -12.5 to 12.5 mV	48.8 μV 24.4 μV 12.2 μV 6.1 μV	±150 μV ±76.3 μV ±45.8 μV ±27.5 μV	±150 μV ±76.3 μV ±45.8 μV ±27.5 μV
Iron Constantan	J -210 to 760°C -210 to 457°C -210 to 231°C	0 to 760°C 0 to 457°C 0 to 231°C	0.49°C at 0°C 0.24°C at 0°C 0.12°C at 0°C	±1.52°C ±0.91°C ±0.55°C	±1.62°C ±1.01°C ±0.65°C
CHROME [®] ALOMEGA [®]	K -270 to 1372°C -270 to 1232°C -270 to 602°C -270 to 307°C	0 to 1370°C 0 to 1232°C 0 to 602°C 0 to 307°C	1.24°C at 0°C 0.62°C at 0°C 0.31°C at 0°C 0.15°C at 0°C	±3.80°C ±1.94°C ±1.16°C ±0.70°C	±4.50°C ±2.64°C ±1.86°C ±1.40°C
Copper Constantan	T -270 to 400°C -270 to 259°C	-160 to 400°C -160 to 259°C	0.32°C at 0°C 0.16°C at 0°C	±1.20°C ±0.72°C	±1.70°C ±1.22°C
CROME [®] Constantan	E -270 to 1000°C -270 to 661°C -270 to 350°C -270 to 188°C	-100 to 1000°C -100 to 661°C -100 to 350°C 1-00 to 188°C	0.83°C at 0°C 0.42°C at 0°C 0.21°C at 0°C 0.10°C at 0°C	±2.56°C ±1.30°C ±0.78°C ±0.47°C	±3.06°C ±1.80°C ±1.28°C ±0.97°C
Pt/13%Rh Pt	R -50 to 1768°C -50 to 1148°C	0 to 1000°C 0 to 1000°C	1.06°C at 600°C 0.53°C at 600°C	±3.98°C ±2.39°C	±4.48°C ±2.89°C
Pt/10%Rh Pt	S -50 to 1768°C -50 to 1246°C	0 to 1750°C 0 to 1246°C	1.19°C at 600°C 0.59°C at 600°C	±4.44°C ±2.67°C	±5.44°C ±3.67°C
Pt/30%Rh Pt/6%Rh	B 0 to 1820°C 0 to 1760°C	V to °C not available	2.03°C at 600°C 1.02°C at 600°C	±7.63°C ±4.58°C	V to °C not available



Common Specifications

A/D CONVERTER

Number of Inputs: 8, multiplexed

Configuration: Fully differential with sample and hold

Full Scale Range: 100, 50, 25 or 12.5 mV (software selectable)

Input Impedance: 10 megohms

Overvoltage Protection: ± 32 V powered, ±20 V not powered

Common Mode Voltage (acceptable operating limit): ± 10V max

Resolution: 12 bit

A/D TRIGGER

Source: on-board clock, direct external trigger, or software trigger jumper selectable. On board clock preset to 8 kHz for OMD-5508TC and OMD-5508RTD, 7 kHz for OMD-5508BG-Q/H/F models

PHYSICAL

Dimensions: 99 x 152.5 mm (3.9" x 6.0")

Temperature Range: 0 to 55°C (32 to 130°F)

Connector: 37-pin standard D subminiature female

Power Consumption: +5 V @ 0.6 A, +12 V @ 30 mA, -12 V @ 50 mA

INPUT CHARACTERISTICS

OMD-5508TC (THERMOCOUPLE INPUT)

Throughput: 8 kHz

Cold Junction Connection: DC-TC isothermal screw terminal panel with semiconductor sensing of terminal temperature

Cold Junction Compensation: Software selectable for J, K, T, E, R, S, B or none (for straight mV inputs) on a channel-to-channel basis

Open Thermocouple Detection: Broken wire TC produces + full scale

Channel-to-Channel Offset: ±3 µV

Noise Referred to Input: 10 µV peak-to-peak maximum

Resolution: 0.1°C for J, K thermocouples

OMD-5508RTD (RTD INPUT)

Throughput: 8 kHz

Type of Measurement: Full 4-wire, with 0°C voltage nulled to zero

Current Source: Precise 1.00 mA source per each channel

Type of Input: 100 ohm platinum
(alpha = 0.00392 or 0.00385)

Input Ranges: 100 mV, 50 mV, 25 mV or 12.5 mV full scale (software selectable)

Resolution: 0.03°C (at gain = 800)



Windows Software (Included) Supports Data Collection and Facilitates Configuration. DOS software also available (shown)

OMD-5508BG-Q/H/F (STRAIN GAGE INPUT)

Throughput: 7 kHz

Type of Measurement: Bridge completion circuit with quarter, half or full bridge configuration, individual bridge supply per channel

Resistance: 350 or 120 ohm operation

Reference Voltage: 2.5 V or 5.0 V on-board, 10 V external

Input Ranges: 100 mV, 50 mV, 25 mV or 12.5 mV full scale (software selectable)

Resolution: Down to 1.2 microstrain (@5 V reference)

To Order (*Specify Model Number*)

Model No.	Price	Description
OMD-5508TC	\$650	8-channel thermocouple input board, includes one OMD-DC-TC termination panel
OMD-DC-TC	85	Additional termination panel for thermocouple input board
OMD-5508RTD	795	8-channel RTD input board, includes one OMD-DC-36
OMD-5508BG-Q-350	795	Strain gage card for external 350 ohm quarter bridge
OMD-5508BG-H-350	795	Strain gage card for external 350 ohm half bridge
OMD-5508BG-F-350	795	Strain gage card for external 350 ohm full bridge
OMD-5508BG-Q-120	795	Strain gage card for external 120 ohm quarter bridge
OMD-5508BG-H-120	795	Strain gage card for external 120 ohm half bridge
OMD-5508BG-F-120	795	Strain gage card for external 120 ohm full bridge
OMD-DC-36	65	Additional bridge screw termination panel for OMD-5508RTD

Each board comes with mating screw termination panel, sample software, and complete operator's manual.

Ordering Example: OMD-5508TC 8-channel thermocouple input board (includes termination panel), \$650.