OMEGADATA™ Series Data Acquisition Systems

OMK-AD612 Low Cost Parallel Port System with Signal Conditioning Options

OMK-AD612 shown with optional OMK-DIFF6, OMK-TSC5 and OMK-MSC01 signal conditioners

- **Six Single-ended, 12 Bit Analog Inputs with 0-4 V Input Range**
- **Flexible Expansion and Signal Conditioning for Thermocouple, Millivolt and Frequency Signals**
- **Three Digital I/O Lines (Input or Output)**
- **Wide Range of Software Support**

The OMK-AD612 is a low cost data acquisition system compatible with most IBM personal computers and compatibles. It plugs directly into the personal computer's parallel port and derives its power from the parallel port's signal lines. It may be used with desktop PCs or because of its compact size it is ideally suited for field use with a portable computer.

The OMK-AD612 is an inexpensive, low speed data acquisition product that is very easy to use. Simply plug it in, load its software, connect your devices and you are ready to begin acquiring data. The OMK-AD612 works under DOS or Windows and is compatible with many software products.

The OMK-AD612 includes six single-ended analog input channels. The maximum sampling rate using the standard software package is 15 samples/sec. The 12 bit resolution combined with the

OMK-AD612's fixed 0 to 4V full-scale input range provides a minimum resolution of approximately 1 mV. The OMK-AD612 also includes three digital I/O lines. These three lines can be used for input or output.

Signal Conditioning

The OMK-AD612 has three signal conditioning accessory modules. These modules give the OMK-AD612 the ability to accept thermocouple and millivolt signals which are not directly readable by the OMK-AD612. The signal conditioners are supported by the software included with the OMK-AD612. The signal conditioners do not affect the three digital I/O lines on the OMK-AD612. These lines are available for connection to switches or relays. The signal conditioners plug directly into the OMK-AD612 and will not operate alone.

OMK-DIFF6 Millivolt Signal Conditioner

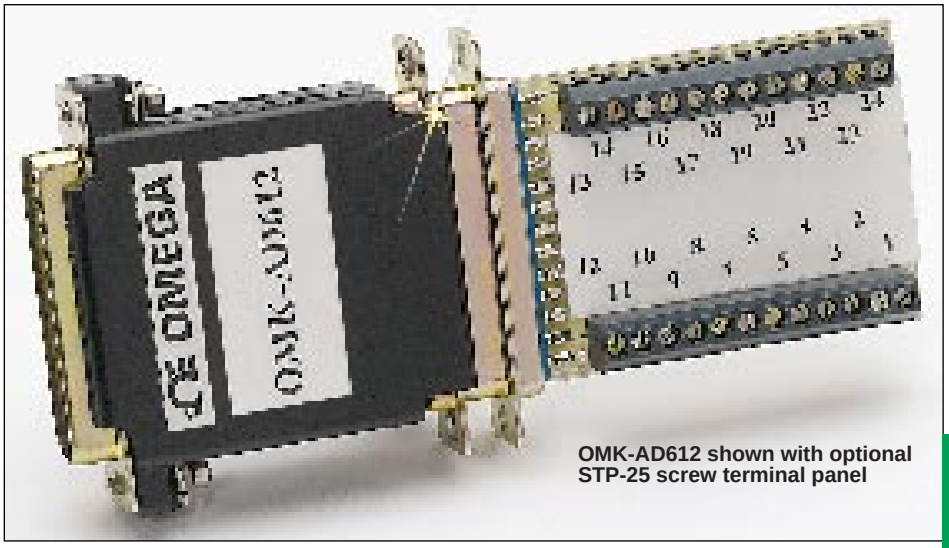
The OMK-DIFF6 converts the six single-ended analog inputs of the OMK-AD612 to six differential millivolt inputs. Each differential input has a range of 0 to 100 mV and can be used with bridge circuits found in strain gages, pressure transducers and load cells.

OMK-MSC01-X Multifunction Signal Conditioner Input for Thermocouples, Voltages and Frequency

The OMK-MSC01-X converts the six single-ended analog inputs to three type "J, K or T" thermocouple inputs or differential millivolt inputs, one ambient temperature reading, one frequency and one voltage input. The differential millivolt input has a range of -5 to 45mV. The frequency input has three different ranges depending on the model chosen: OMK-MSC01-L has a 0 to 100 Hz range, OMK-MSC01-M has a 0 to 500 Hz range and OMK-MSC01-H has a 0 to 1000 Hz range. The voltage input has a range of 0 to 4V.

OMK-TSC5 Thermocouple/Millivolt Signal Conditioner

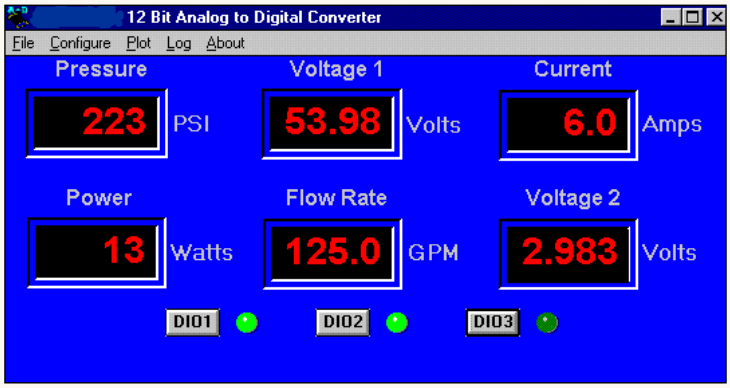
The OMK-TSC5 takes the six single-ended analog inputs of the OMK-AD612 and replaces them with five type "J, K or T" thermocouple inputs or differential millivolt inputs. It also has an internal sensor, that when used with the OMK-AD612 software, will display the ambient temperature reading.



OMK-AD612 shown with optional STP-25 screw terminal panel

OMK-STP25

The OMK-STP25 is a general purpose screw terminal panel that plugs directly into the OMK-AD612 or one of its accessory modules. This screw terminal panel brings all signals out to external screw terminals.

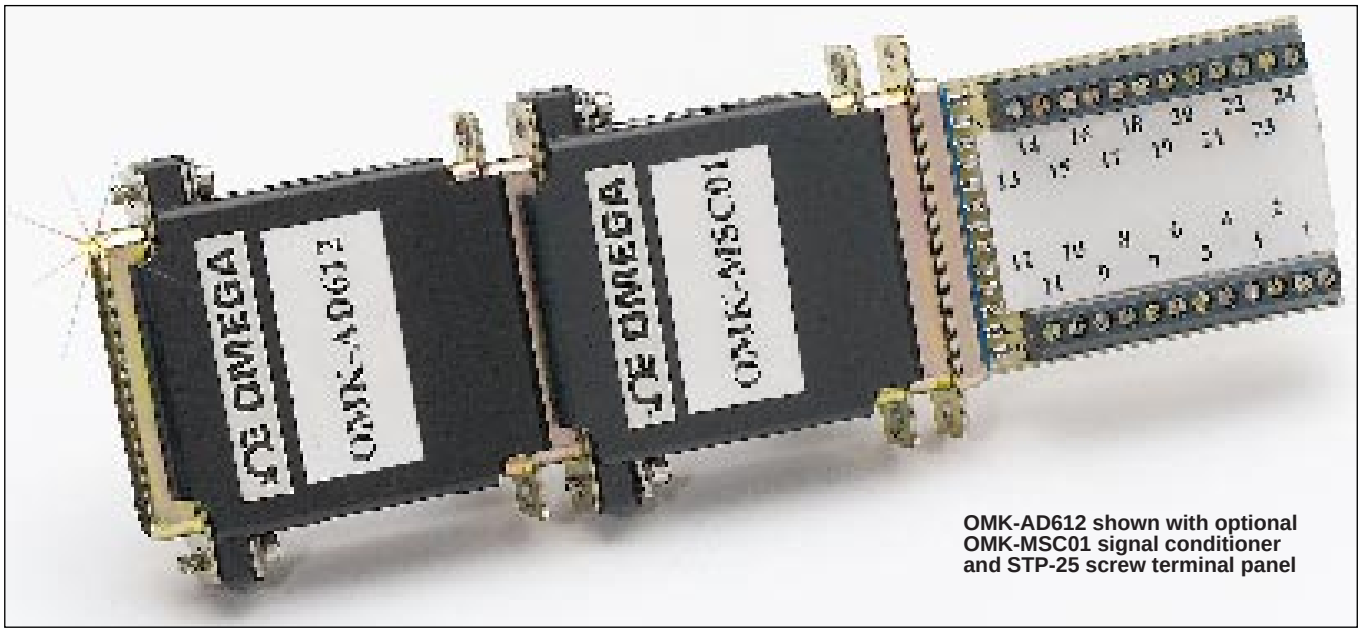


SOFTWARE

The OMK-AD612 comes with a standard software package. This package includes:

- Microsoft Windows data display and data logging software
- Windows 16 and 32-bit DLL drivers
- DOS subroutines for C and Basic

The OMK-AD612 Microsoft Windows compatible software, which is supplied with the product includes everything needed to display, scale or offset each input. Each displayed value has a title and unit label that you may customize. The software also displays the status of the 3 digital I/O lines. The standard software panel comes with a Data Plotter. The analog input values may be plotted vs. time. The input values may also be logged to disk at user-specified intervals in *.CSV format for later viewing and manipulation with a spread sheet or other program.



OMK-AD612 shown with optional OMK-MSC01 signal conditioner and STP-25 screw terminal panel

Specifications

OMK-AD612

Number of Analog Inputs: 6 single-ended

Resolution: 12 bits

Analog Input Range: 0 V to 4 V

Input Impedance: The analog inputs look like a 100 pF capacitor in series with a 500 ohm resistor which is switched once for each conversion. Source resistance should be kept below 1.5KΩ.

Offset Error: +0.5%/-0.0% F.S.

Linearity Error: ±0.2% F.S.

Gain Error: ±1% F.S.

Hardware Conversion Time: Dependent on speed of host computer, 22µs minimum, 35µs on a 486-Dx266,160µs on a 386-Dx33

Overvoltage Protection: ±15 Vdc

Digital I/O

Number of Digital I/O Lines: 3

Max. Current (Sinking): 4 mA

Max. Current (Sourcing): 0.5 mA

Overvoltage Protection: +5/-0.5 Vdc

OMK-DIFF6

Number of Inputs: 6 differential

Range: 0 to 100 mV

Accuracy: ±0.5% F.S.

Resolution: 0.02 mV

OMK-MSC01-X

Thermocouple/Millivolt Inputs Number: 3

Accuracy/Range/Resolution: Same as OMK-TSC5

Frequency Inputs

Number of Inputs: 1

Signal Level: Min. ±100mV, max. ±4V

Range

OMK-MSC01-L: 0 TO 100 Hz
OMK-MSC01-M: 0 TO 500 Hz
OMK-MSC01-H: 0 TO 1000 Hz

Accuracy: ±1% F.S.

Resolution: 1 Hz

Voltage Inputs

Number of Inputs: 1

Range: 0 to 4 V

Accuracy/Resolution: Same as OMK-AD612

OMK-TSC5

Number of Thermocouple Inputs: 5 (J, K, T or millivolt)

Ranges: Type J -50 to 800°C;
Type K -50 to 1000°C;
Type T -25 to 500°C
Millivolt -5 to 45 millivolt

Thermocouple Accuracy: 1.5°C @ 25 °C

Thermocouple Resolution: 1°C

Millivolt Accuracy: ±0.5% F.S.

Millivolt Resolution: 0.01 mV

Physical (All Models)

Operating Temperature Range: 0 to 70°C

Dimensions: 2.3" L x 2.2" W x 0.6" D (58.4 x 55.8 x 15.2 mm)

Power Consumption: 50 mW

To Order *(Specify Model No.)*

Model No.	Price	Description
OMK-AD612	**$169**	Low cost parallel port data acquisition system

The OMK-AD612 includes data collection software, software drivers and complete user's manual.

Ordering Example: *OMK-AD612 with OMK-STP25 terminal panel, $169 +30 =* ***$199****.*

Accessories

Model No.	Price	Description
OMK-DIFF6	**$110**	Millivolt signal conditioner for OMK-AD612
OMK-MSC01-L	**110**	Thermocouple, millivolt, frequency signal conditioner for OMK-AD612, 0 to 100 Hz frequency range
OMK-MSC01-M	**110**	Thermocouple, millivolt, frequency signal conditioner for OMK-AD612, 0-500 Hz frequency range
OMK-MSC01-H	**110**	Thermocouple, millivolt, frequency signal conditioner for OMK-AD612, 0 to 1000 Hz frequency range
OMK-TSC5	**110**	Thermocouple signal conditioner for OMK-AD612
OMK-STP25	**30**	Screw terminal panel, plugs into OMK-AD612 and all signal conditioners

Ordering Example: *OMK-AD612, OMK-TSC5 thermocouple signal conditioner and OMK-STP25 screw terminal panel, $169 + 110 + 30 =* ***$309****.*