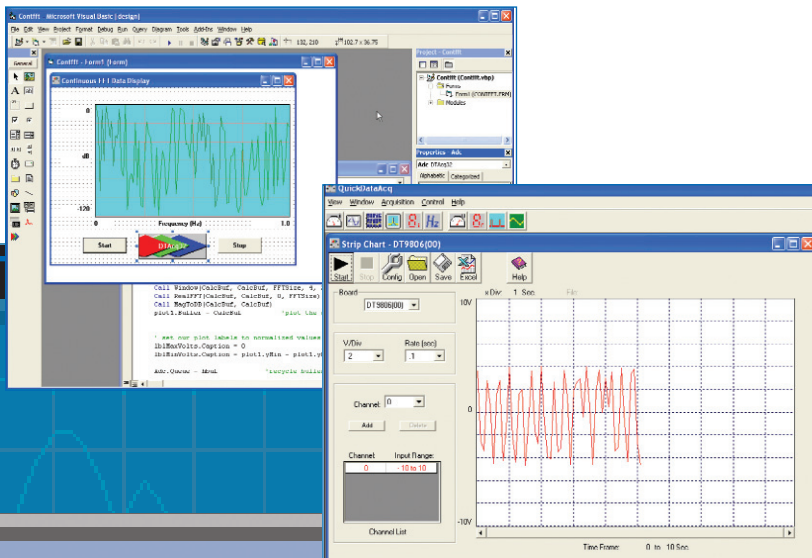


# Discover the Difference Keithley Makes in Data Acquisition



- Get worry-free, repeatable performance at an affordable price.
- Plug in your choice of multifunction, analog, output, counter/timer, and digital I/O PCI-compatible plug-in boards.
- Start taking data in minutes with our USB-based data acquisition modules.
- Complete your application quickly with the free software included with each product.

**KEITHLEY**

## Selector Guides

### Multifunction Boards and Modules

	KUSB-3100	KUSB-3102	KUSB-3108	KUSB-3116	KPCI-1801HC	KPCI-1802HC	KPCI-3110	KPCI-3116	KPCI-3101	KPCI-3102	KPCI-3103	KPCI-3104
Bus	USB	USB	USB	USB	PCI	PCI	PCI	PCI	PCI	PCI	PCI	PCI
Description	Low cost, multi function	Low gain, multi function	High gain, multi function	High performance, multi function	333kS/s, analog & digital I/O board, high channel count	333kS/s, analog & digital I/O board, high channel count, low gain	1.25MS/s, low gain, analog & digital I/O board with 2 analog outputs	250kS/s, high resolution, low gain, analog & digital I/O board with 2 analog outputs	225kS/s, low gain, analog & digital I/O board	225kS/s, low gain, analog & digital I/O board with 2 analog outputs	400kS/s, low gain, analog & digital I/O board	400kS/s, low gain, analog & digital I/O board with 2 analog outputs

#### Analog Inputs

No. Channels	8 SE	16 SE/pseudo-DI, 8 DI	16 SE/pseudo-DI, 8 DI (7 T/C, 1 C/C)	16 SE/8 DI	64 SE/32 DI	64 SE/32 DI	32 SE/16 DI	32 SE/16 DI	16 SE/8 DI	16 SE/8 DI	16 SE/8 DI	16 SE/8 DI
Resolution	12-bit	12-bit	16-bit	16-bit	12-bit	12-bit	12-bit	16-bit	12-bit	12-bit	12-bit	12-bit
Throughput	50 kS/s	100 kS/s	50 kS/s	500 kS/s	333 kS/s	333 kS/s	1.25 MS/s	250 kS/s	225 kS/s	225 kS/s	400 kS/s	400 kS/s

#### Analog Outputs

Range Selection	Software	Software	Software	Software	Software	Software	Software	Software	N/A	Fixed	N/A	Fixed
No. Channels	2	2	2	4	2	2	2	2	0	2	0	2
Resolution	12-bit	12-bit	16-bit	16-bit	12-bit	12-bit	12-bit	12-bit	N/A	16-bit	N/A	16-bit

#### Digital

No. Input/Output Channels	8 in, 8 out	8 in, 8 out	8 in, 8 out, 1 dynamic digital output	16 in, 16 out, 1 dynamic digital output	4 in, 8 out	4 in, 8 out	16	16	23	23	23	23
Sink	10mA	12 mA	12 mA (Port B) or 2 mA (dynamic digital output)	12 mA	4 mA	4 mA	24 mA	24 mA	12 mA	12 mA	12 mA	12 mA
Source	2 mA	1 mA	-1 mA	-12 mA	-400 $\mu$ A	-400 $\mu$ A	-15 mA	-15 mA	-15 mA	-15 mA	-15 mA	-15 mA
Counter/Timers	1	2	2	5	0	0	4	4	4	4	4	4

### Digital I/O Boards and Modules

	KUSB-3160	KPCI-PIO32IOA	KPCI-PDIS08A	KPCI-3160	KPCI-PIO24	KPCI-PIO96
Bus	USB	PCI	PCI	PCI	PCI	PCI
Digital I/O Lines	96	16 in/16 out	8 in/8 out	96	24	96
Special Features	<ul style="list-style-type: none"> <li>High channel count</li> <li>64 bidirectional lines</li> <li>500V isolation barrier</li> </ul>	<ul style="list-style-type: none"> <li>Optically isolated digital I/O</li> <li>Direct, non-polarized switching and sensing</li> </ul>	<ul style="list-style-type: none"> <li>Optically isolated digital I/O</li> <li>Direct, non-polarized switching and sensing</li> </ul>	<ul style="list-style-type: none"> <li>High current drivers</li> <li>Bidirectional I/O</li> <li>Solid-state &amp; electromechanical relay compatible</li> </ul>	<ul style="list-style-type: none"> <li>High current drivers</li> <li>Bidirectional I/O</li> </ul>	<ul style="list-style-type: none"> <li>High channel count</li> <li>High current drivers</li> <li>Solid-state &amp; electromechanical relay compatible</li> </ul>

#### Output Type

Solid State	•	•	•	•	•	•
Electromechanical	N/A	N/A	N/A	•	•	•

#### Available Output & Switching Current

Sink	12 mA			64 mA	64 mA	64 mA
Source	-15 mA			15 mA	15 mA	15 mA

### PCI-Bus Analog Output Boards

	KPCI-3130	KPCI-3132
Bus	PCI	PCI
Description	8-Channel Analog Output Board	2-Channel Analog Output Board
No. Channels	8	2
Resolution	20	20
Current or Voltage	V/I	V/I
Digital Inputs/Outputs	32	0
Pacer Clock	No	No

### Counter/Timer Board

	KPCI-3140
Special Features	<ul style="list-style-type: none"> <li>16-bit counters</li> <li>32-bit digital I/O</li> <li>Counts to 20MHz</li> <li>Edge detection</li> </ul>
Bus	PCI
No. of Channels	8
Input Rate	40 MHz
Digital In	32
Digital Out	32
No. of External Interrupt Inputs	8
No. of 16-Bit Counters	8

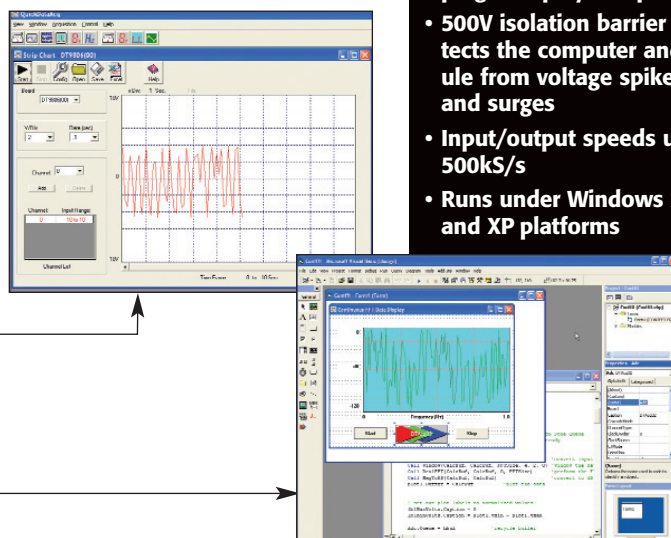
## Flexibility and portability for demanding measurement applications

### USB-based data acquisition modules

Now, adding data acquisition capabilities to your PC is as easy as plugging in a mouse or keyboard. Within minutes of connecting one of our compact data acquisition modules to your computer and your sensor directly to the module, you're ready to make measurements of voltage, temperature, pressure—whatever you need. And you have done this without opening your PC, without complicated programming, and without spending time configuring the module, power requirements, or connection schemes. The Keithley KUSB-3100 Series brings true plug-and-play data acquisition to computers that contain Universal Serial Bus (USB) 2.0 and 1.1 ports. No more opening up your computer chassis to install boards—just plug in the module, install the included software, and you are ready to make measurements. It's easy and efficient.

Each KUSB module includes the following software tools to develop your application:

- Quick DataAcq application—for getting your module up and running fast. It collects A/D data and displays data on screen.
- DataAcq SKD—for software development using the Microsoft C compiler
- ActiveX controls—for programming in Visual Basic and C++/Visual
- LabVIEW™ VIs—for programming in LabVIEW

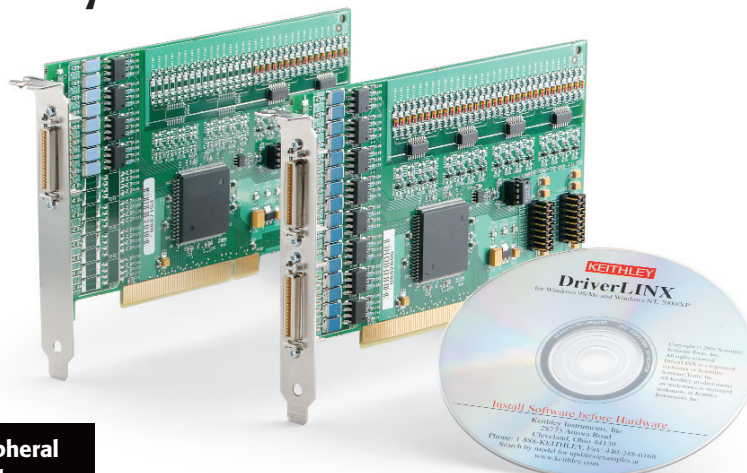


- USB 2.0 and USB 1.1, true plug-and-play compatibility
- 500V isolation barrier protects the computer and module from voltage spikes, ESD, and surges
- Input/output speeds up to 500kS/s
- Runs under Windows 2000 and XP platforms

## Functionality, performance, and quality for all applications

### PCI plug-in boards

Keithley's series of multifunction, digital I/O, analog output, and counter/timer PCI plug-in boards combine high performance and high channel capacity. They make it simple to gather analog data, read and output digital signals, provide analog stimulus, and much more. Each of these rugged, industrial-grade data acquisition boards comes with all the software needed for fast and easy setups.



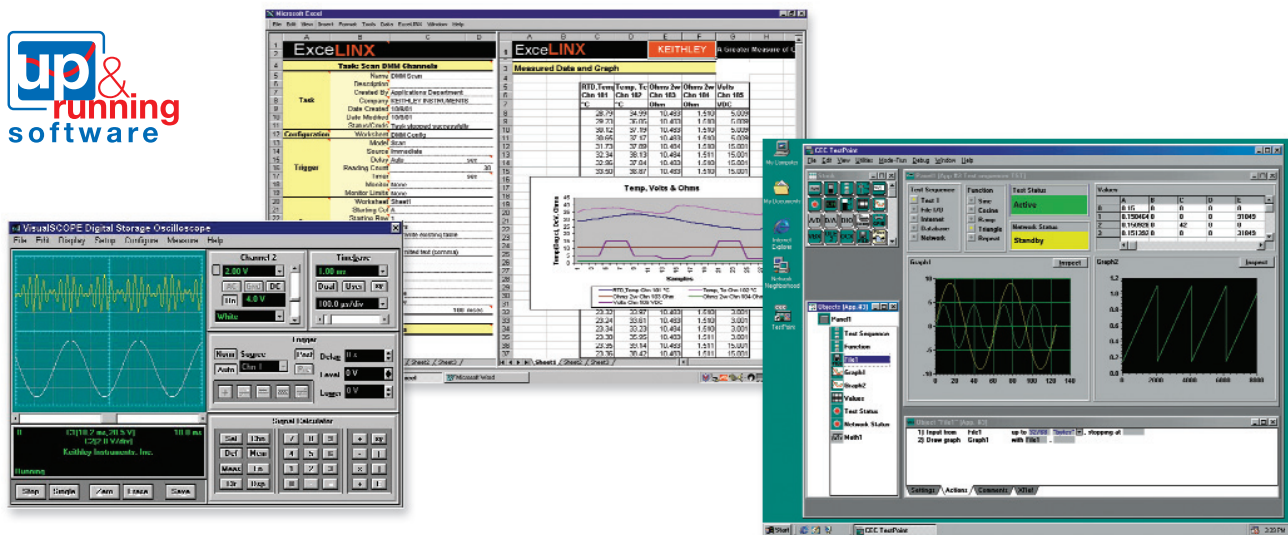
- Compatible with PCI (Peripheral Component Interconnect) bus
- Choose from multifunction, analog output, counter/timer, and digital I/O boards

# KEITHLEY

A GREATER MEASURE OF CONFIDENCE

## INCLUDED SOFTWARE WITH PCI PLUG-IN BOARDS:

- **DriverLINX**—for programming in Visual Basic, C/C++, and Delphi.
- **LabVIEW Vis**—compatible with National Instruments' Virtual Instruments.
- **ExceLINX-DAS**—for no-programming integration with Microsoft Excel.
- **VisualSCOPE** software package—for intuitive, no-programming interfacing with Windows applications.



Contact your local sales representative for more information on our full line of data acquisition products.

Specifications are subject to change without notice.  
All Keithley trademarks and trade names are the property of Keithley Instruments, Inc.  
All other trademarks and trade names are the property of their respective companies.

# KEITHLEY

A G R E A T E R M E A S U R E O F C O N F I D E N C E

KEITHLEY INSTRUMENTS, INC. ■ 28775 AURORA ROAD ■ CLEVELAND, OHIO 44139-1891 ■ 440-248-0400 ■ Fax: 440-248-6168 ■ 1-888-KEITHLEY ■ www.keithley.com

**BELGIUM**

Sint-Pieters-Leeuw  
Ph: 02-363 00 40  
Fax: 02-363 00 64  
www.keithley.nl

**CHINA**

Beijing  
Ph: 8610-82255010  
Fax: 8610-82255018  
www.keithley.com.cn

**FINLAND**

Espoo  
Ph: 09-88171661  
Fax: 09-88171662  
www.keithley.com

**FRANCE**

Saint-Aubin  
Ph: 01-64 53 20 20  
Fax: 01-60 11 77 26  
www.keithley.fr

**GERMANY**

Germering  
Ph: 089-84 93 07-40  
Fax: 089-84 93 07-34  
www.keithley.de

**UNITED KINGDOM**

Theale  
Ph: 0118-929 75 00  
Fax: 0118-929 75 19  
www.keithley.co.uk

**INDIA**

Bangalore  
Ph: 080 22 12 80-27/28/29  
Fax: 080 22 12 80 05  
www.keithley.com

**ITALY**

Milano  
Ph: 02-553842.1  
Fax: 02-55384228  
www.keithley.it

**JAPAN**

Tokyo  
Ph: 81-3-5733-7555  
Fax: 81-3-5733-7556  
www.keithley.jp

**KOREA**

Seoul  
Ph: 82-2-574-7778  
Fax: 82-2-574-7838  
www.keithley.co.kr

**MALAYSIA**

Kuala Lumpur  
Ph: 60-3-4041-0899  
Fax: 60-3-4042-0899  
www.keithley.com

**NETHERLANDS**

Gorinchem  
Ph: 0183-63 53 33  
Fax: 0183-63 08 21  
www.keithley.nl

**SINGAPORE**

Singapore  
Ph: 65-6747-9077  
Fax: 65-6747-2991  
www.keithley.com.sg

**SWEDEN**

Solna  
Ph: 08-50 90 46 00  
Fax: 08-655 26 10  
www.keithley.com

**TAIWAN**

Hsinchu  
Ph: 886-3-572-9077  
Fax: 886-3-572-9031  
www.keithley.com.tw