

NEW PRODUCTS

The descriptions of the new products listed in this section are based on information supplied to us by the manufacturers, and in some cases by independent sources. PHYSICS TODAY can assume no responsibility for their accuracy. To facilitate inquiries about a particular product, a Reader Service Card is attached inside the back cover of the magazine.

Data-Acquisition Systems Based On Notebook Computers

The Dacpac STD and Dacpac XL from Keithley Metrabyte are designed to turn a notebook computer into a portable data-acquisition system. Both systems can operate from an external in-line ac adapter, an external dc source or their internal nickel-cadmium battery packs (good for about three hours of operation). The Dacpac STD holds up to two 2/3-size industry-standard-architecture compatible cards, measures 11.73" x 9.69" x 2.17" and weighs 6.61 pounds. The Dacpac XL holds up to two full-size ISA compatible cards, measures 15.55" x 9.69" x 2.17", weighs 11.02 pounds and has a -5-volt source. The Dacpacs support all ISA features, and they will run any software written for the IBM PC. These systems should be useful for remote applications such as seismic measurement and biomedical research. *Keithley Metrabyte, 440 Myles Standish Boulevard, Taunton, Massachusetts 02780*

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Data-Acquisition System with Signal Conditioning

Gould Instrument Systems's Acqulab data-acquisition system is designed to provide signal conditioning, recording, monitoring, real-time hard copy, on-board playback and analysis software in a single instrument. Signal conditioning features include 50-kilohertz band-pass filters, 1000-volt optical input isolation, digital filtration and three modes of operation: ac-dc, root-mean-square and glitch capture.

Data are received by 32 analog inputs, each with a 16-bit analog-to-



digital converter with a dynamic anti-aliasing filter, and 16 digital inputs. Two independent sample clocks allow the user to acquire both rapidly changing and slowly changing signals. The system can be triggered by such quantities as the input level, input slope, time of day, interval time or an external signal.

Data are stored on multiple fixed and removable hard disks, and all data can be backed up onto tape. Up to four real-time data frames can be configured simultaneously and then recalled using Acqulab's control panel. In playback mode the Acqulab can search stored data for anomalies or features of interest. The standard software package allows the user analyze most data on the Acqulab; alternatively, data can be stored on a removable hard disk and imported to a work station. *Gould Instrument Systems, 8333 Rockside Road, Valley View, Ohio 44125*

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Data-Acquisition Boards with Signal-Conditioning

Iotech's Daqboard/100A and Daqboard/112A data-acquisition boards provide 16 single-ended or 8

Cryo

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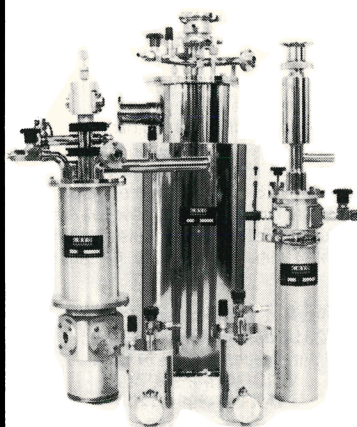
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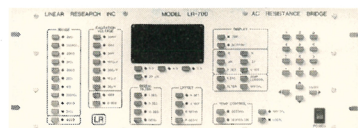
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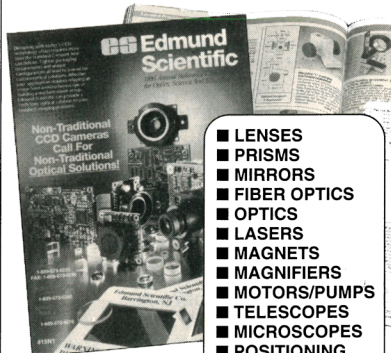
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- Each excitation can be varied 0-100%
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- 2x16 characters alphanumeric
- Dual 5½ digit set resistance (R, X)
- Can display R, ΔR, 10ΔR, X, ΔX, 10ΔX, R-set, and X-set
- 10 nano-ohms display resolution
- Mutual inductance (X) option available
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- Internal temperature controller available
- Drives our LR-130 Temperature Controller
- Multiplex units available 8 or 16 sensors

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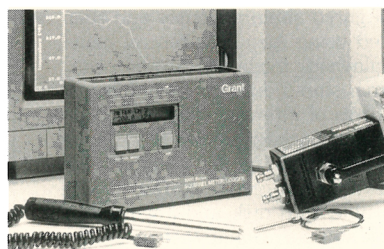
differential analog inputs (expandable to 256 inputs) with 10-microseconds-per-channel, 12-bit measurement capacity. Both boards also have three DB37 connectors for analog, digital and pulse-frequency signals, two digital-to-analog converters capable of 500-kilosample-per-second updates on both channels, 16 100-kiloword-per-second digital inputs and analog triggering. In addition the 100A has 24 general-purpose digital input-output lines (expandable to 193) and 5 independent 16-bit programmable counter-timers, which can measure frequency or pulses or generate digital patterns. Both boards are shipped with a software package that includes DOS drivers for Quick Basic, C and Pascal and Windows drivers for Visual Basic and C++. Both boards are supported by icon-based software packages such as Snap-master, Labtech Notebook, DasyLab and Labview.

Iotech also produces several expansion options that connect to the cards via their DB37 connectors. These options include multiplexing cards, filter cards, input-output modules and modules for measuring signals from strain gages and thermocouples. Iotech, 25971 Cannon Road, Cleveland, Ohio 44146

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Portable 10-Bit Data Loggers with Liquid-Crystal Display

The 1000 series Squirrel data loggers from Science/Electronics each weigh



2.2 pounds and measure 7"×5"×2.5". Each unit has eight input channels for thermocouples, thermistors or transducers, plus a pulse-count channel and an 8-bit digital channel that allows eight event inputs. The loggers store up to 65 000 time- and date-stamped readings. Data can be read into a computer, or the readings can be downloaded by modem for remote operation. The loggers run on batteries or ac power. Software is available for statistical and graphical analysis of

the data. Science/Electronics, PO Box 986, Dayton, Ohio 45401

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Oscilloscopes for High-Voltage and Signal-Processing

The Tektronix TDS 400A series of digitizing storage oscilloscopes—the TDS410A, TDS420A and TDS460A—are intended to make a wide range of measurements—from low-amplitude or differential measurements to high-voltage measurements. The TDS410A has two channels with 200-megahertz bandwidth; the TDS420A has four channels with 200-megahertz bandwidth and the TDS460A has four channels with 400-megahertz bandwidth. All of the oscilloscopes have sensitivities ranging from 1 millivolt per division to 10 volts per division, vertical accuracies of 1.5%, timebase accuracies of 0.005% and sampling rates up to 100 megasamples per second. The standard maximum record length of 30 kilobytes can be extended to 120 kilobytes. The scopes' acquisition modes include peak detect, sample, average and envelope—all with 8-bit vertical resolution—and a high resolution mode with 12 bit-vertical resolution.

Several accessories are available for all three scopes, including a 3.5" floppy disk, a printer pack, a fast-Fourier-transform math module, an RS-232-Centronics interface, a low-amplitude differential amplifier and a high-voltage differential probe. The scopes should be useful for applications ranging from biophysics to designing of high-voltage power supplies. Tektronix, PO Box 500, Beaverton, Oregon 97077-0001

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Digital Storage Oscilloscopes with Increased Memory

LeCroy has added several oscilloscopes to its 9350 series of two-channel digital storage oscilloscopes and 9354 series of four-channel DSOs. (See PHYSICS TODAY, MAY 1994, page 80.) The new A series scopes include a 500-megasample/sec clock, and have doubled the processor-coprocessor speed of earlier models from 16 to 32 megahertz. The acquisition memory of the A series scopes has also been increased, from 25 to 50 K

per channel for the base version and 100 to 250 kilobytes for the M version.

The new 9354T and 9354TM have 100 and 500 kilobytes of memory per channel, respectively. Each uses a 32-megahertz processor-coprocessor and comes with a performance package with a 3.5"-floppy drive and software that gives the units the ability to differentiate, integrate, filter and average waveforms and to take logarithms, fast Fourier transforms, exponents, absolute values, squares and square roots of waveforms.

As with other 9300 series scopes, the new models' memory from unused channels can be combined. This makes it possible to run units in the 9350 series as single-channel scopes with twice the memory per channel. Likewise, units in the 9354 series can be run as two-channel scopes with twice the memory per channel or as single-channel scopes with four times the memory per channel. *LeCroy, 700 Chestnut Ridge Road, Chestnut Ridge, New York 10977-6499*

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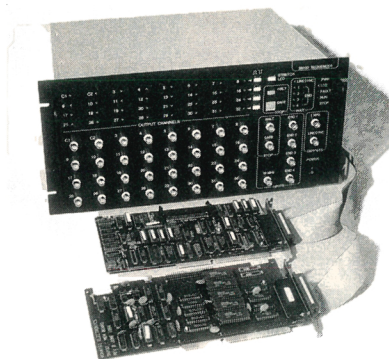
Data Acquisition System with Relays and High-Voltage

National Instruments's SCXI-1162HV and SCXI-1163R allow data acquisition systems to handle high-voltage inputs and to incorporate solid-state relays, respectively. Both modules have 32 input channels—eight four-channel groups isolated from each other and from the chassis earth ground for up to 450 volts. The 1162HV is a digital input module that converts a wide range of signal types—from high-voltage ac or dc signals to low-voltage transistor-to-transistor logic signals—into transistor-to-transistor logic data that can be read by a data-acquisition board. The 1163R's 32 solid-state relays can switch loads up to 200 milliamps at 240 volts. *National Instruments, 6504 Bridge Point Parkway, Austin, Texas 78730-5039*

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Computer-Based 1-MHz Sequencer

Plus Scientific's SN100 sequencer provides software and hardware that allow the user to control the flow and execution of an experiment or proc-



ess from a personal computer. The device has 32 independent transistor-to-transistor logic output channels and 32 768 time steps, which can assume independent values from 1 microsecond to 1000 seconds. The sequencer has a built-in line-sync generator that insures that all measurements are taken in phase with each other relative to the ac power, and it also has an external clock, external trigger and external reset features. The programmable "safe" state sets all transistor-to-transistor logic outputs to predetermined values if the process is shut down. This is meant to protect the experimental apparatus in the event of an accident. The SN100 consists of two 3/4-length industry-standard-architecture boards and a 19" chassis with output drivers, input and output connectors and indicator lights. The sequencer is controlled from the host computer by software that includes a full-featured editor for entering and changing timing patterns. The system can also be controlled remotely over an RS-232 interface. This system has been used to control experiments with non-neutral plasmas and electron-beam trapping. It should also be useful in atomic and molecular spectroscopy, nuclear and particle physics or any other field that involves experiments with many repetitive steps. *Plus Scientific, 239 Cypress Point Drive, Mountain View, California, 94043*

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New Literature

Data acquisition catalog—Daytronic's catalog gives detailed descriptions of its instruments for on-site data acquisition from thermocouples, thermistors, strain gage transducers and many other devices. *Daytronic, 2589 Corporate Place, Miamisburg, Ohio 45342*

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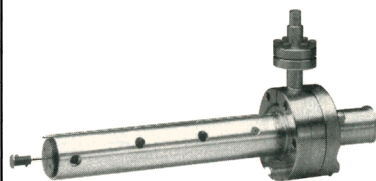
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