

INTERTECHNOLOGY

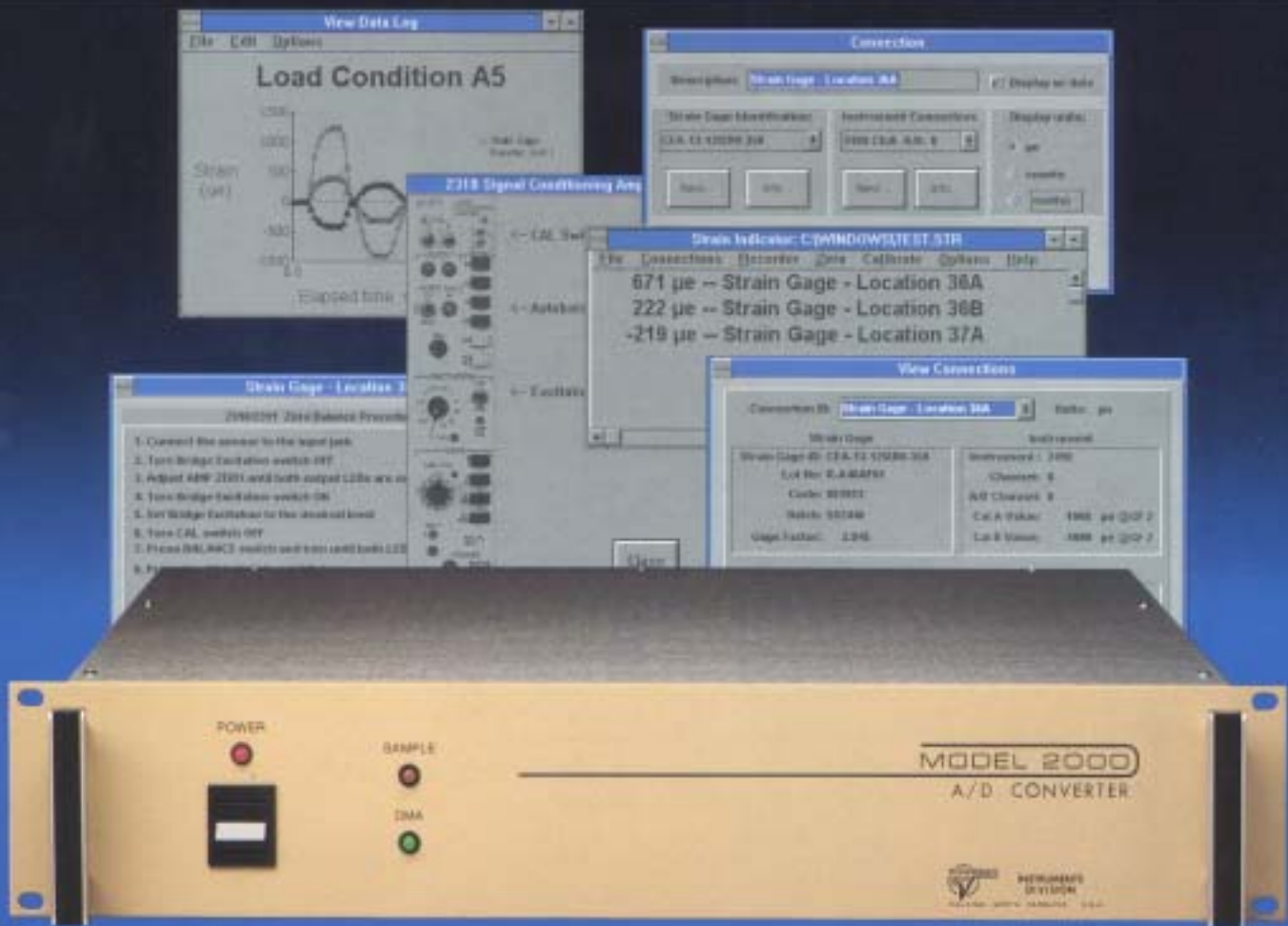
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Model 2000

Analog-to-Digital Converter



Hardware and software for converting, displaying and storing up to 16 analog signals from Measurements Group strain gauge instrumentation, with speeds up to 50,000 readings per second, as 14-bit digital data.





The Model 2000 Analog-to-Digital Converter Module, programmable with simple commands to a GPIB (IEEE-488) interface, accepts up to 16 analog signals of ± 10 Vdc full scale. The 14-bit successive-approximation ADC samples the inputs at one of six programmable rates up to 50,000 readings per second. In the asynchronous mode, digital data may be transferred to the interface in either ASCII or binary format. In the synchronous mode, used for more rapid transfers, data is sent in binary format. Mountable in a standard 19-in (483-mm) equipment rack, the Model 2000 is shipped with ready-to-use software for data acquisition, storage and presentation as well as the additional computer code needed for utilizing the hardware with second-party and owner-developed software. To take full advantage of the Model 2000's hardware and software features, a 486 computer is recommended as the minimum system requirement.

Hardware Specifications

Analog Input:	16 single-ended signals ± 10 V input range (± 2 V optional range) >100 M Ω input impedance 25 Vrms max. input without damage
Multiplexer:	1 of 16 CMOS switch
Conversion Technique:	Successive-approximation ADC 14-bit resolution 50,000 samples/second max.
System Accuracy:	± 1 LSB max. integral nonlinearity ± 1 LSB max. differential nonlinearity ± 2 LSB max. offset error, ± 1 LSB typ. ± 3 LSB max. gain error, ± 1 LSB typ. ± 0.5 LSB rms typ. system noise
Interface:	GPIB (IEEE-488) with talker/listener function
Data Transfer Format:	Binary or ASCII in asynchronous mode Binary in high-speed synchronous mode
Programmable Features:	Direct or sequential channel selection, sample clock speed, data format, sample mode
Power:	115/230 Vac, 50-60 Hz, approx. 15W
Size:	3.5H x 19.0 W x 13.0 D in (89 x 483 x 330 mm)
Weight:	6 lb. (2.75 kg)

Software Specifications

Applications

Ready-to-use Microsoft Windows 3.1-based software for making measurements with Model 2000 hardware.

Indicator Mode (Asynchronous):

- Add/delete/modify connections to strain gauge instrumentation
- Save/retrieve/display setup information
- Calibrate in microstrain, A/D counts or user-defined units
- Scan/view/print selected data online in indicator mode
- Record data to disk at timed intervals (0.25s to 60h) in recorder mode
- Plot/print recorded data

Scanner Model (Synchronous):

- Add/delete/modify connections to strain gauge instrumentation
- Calibrate in microstrain, A/D counts or user-defined units
- Scan/record at rates up to 50,000 samples/second
- Plot/print recorded data

Programming Examples

Sources code in Borland Pascal and Microsoft Visual Basic for simple synchronous and asynchronous operations.

Windows 3.1 DLL's

Software simulator and interfaces for commonly available GPIB's.

All specifications are nominal or typical at 23°C unless noted.

The Measurements Group is a leading supplier of strain gauges and strain gauge instrumentation. Available instruments include portable indicators, signal conditioners/amplifiers, strain gauge installation tester, instrument calibrator and sophisticated computer-controlled systems for the acquisition, storage and reduction of test data. Call or write for all of your strain gauge instrumentation needs.