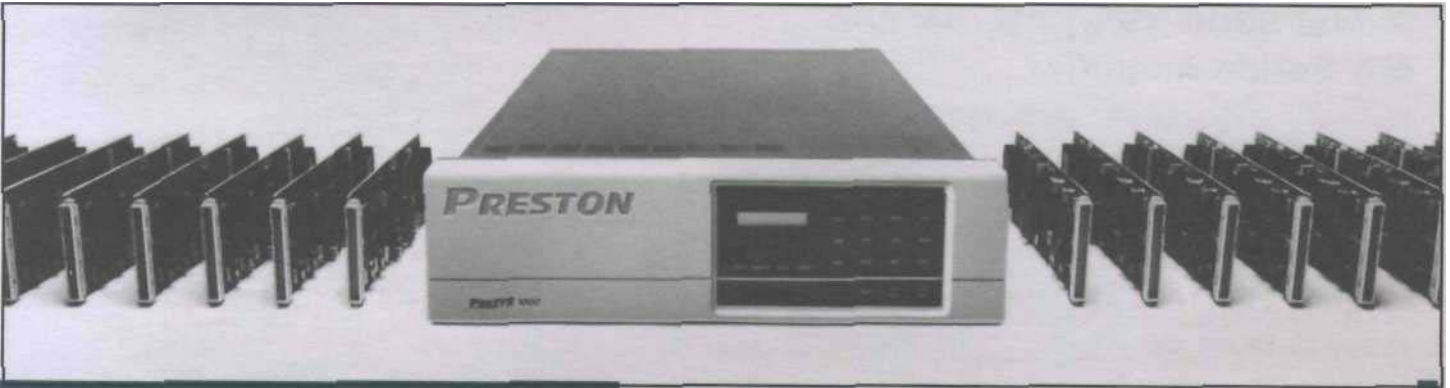


# An Introduction to Preston Scientific and the PreSys 1000 Data Conversion Systems

Analog to Digital Conversion Systems Including Digital to Analog Conversion Systems, Digital Input/Output Sub-Systems and Preston's Signal Conditioning & Instrumentation Amplifier



Here is a microprocessor-based data acquisition, simulation, and control system so flexible, so versatile, and so user friendly that it literally becomes all things to all users.

## Multiple Functions

The PreSys 1000 chassis has 15 slots for thousands of possible card combinations: A/D conversion, D/A conversion, multiplexers, computer interfaces, FIFO memory expansion, diagnostics, chassis expansion logic, plus many others. And any card works in any slot!

## Multiple users

PreSys 1000 can handle up to six unique users, each with their own inputs, outputs, and internal processing. This makes the system ideal for use by individuals or teams in research and engineering applications.

## Multiple Interfaces

PreSys 1000 can interface with any computer system used in the instrumentation field. Interface options include CSPI, DEC, VME, HP, DG, IEEE488, RS232, and SCSI 1/2. If you want a data acquisition system you can configure to today's needs, with full scope for tomorrow's requirements, you want PreSys 1000. Request our informative, full-color brochure today.

Preston's PreSys 1000 Data Conversion Systems come in a wide variety of performance characteristics that feature Preston's quality-engineered construction, 13 to 16 bit resolution and high speed conversion with many other features and advantages.

## ADC System

13 to 16 bit resolution featuring 1 MHz conversion rates\*

## ADC system

13 to 16 bit resolution featuring 500KHz conversion rates'

## ADC System

13 to 16 bit resolution featuring 307KHz conversion rates"

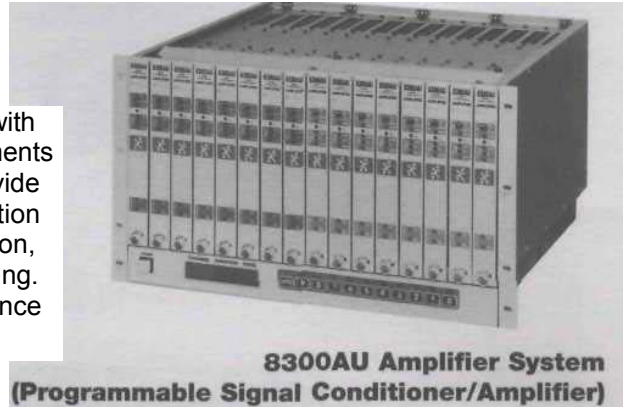
## Other System Features and Options

- Signal Conditioners...
- Amplifiers...
- Anti-aliasing Filters...
- Simultaneous Sample-and-Hold...
- Digital Inputs and Outputs...
- Digital-to-Analog Conversion...
- Computer Interfacing...
- Differential Interface...
- Optical Isolation...
- Pre-Trigger Functions...
- Expanded FIFO Memory...
- Event Counters 16 to 32 bits Programmable...
- Time Data Channel

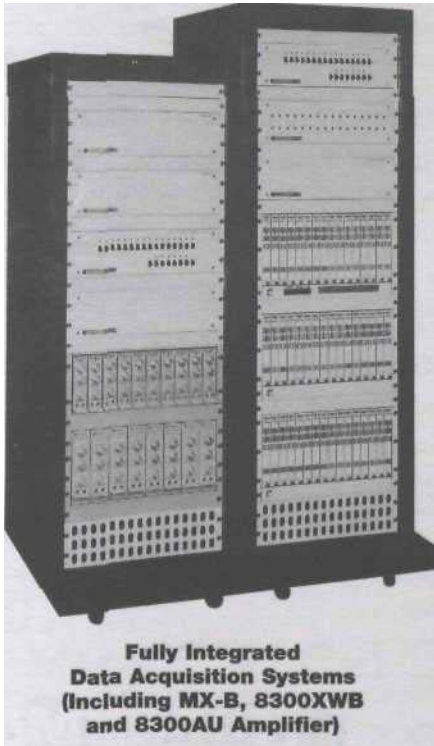
# An Introduction to Preston Scientific and Preston's Signal Conditioning & Instrumentation Amplifier Systems

## Model 8300 XWB, AU, DX and MX Series Amplifier

This is Preston's finest High Performance Instrumentation Amplifier with capability for meeting the most demanding instrumentation requirements for accuracy, versatility and reliability. Models are available that provide either or both manual or remotely programmed gain and filter selection on a per-channel basis. Models are offered with a variety of calibration, filter, configuration, system control options and input signal conditioning. Ask for 8300AU-SOP98 Data Sheet featuring 10 new high performance options for 1998.

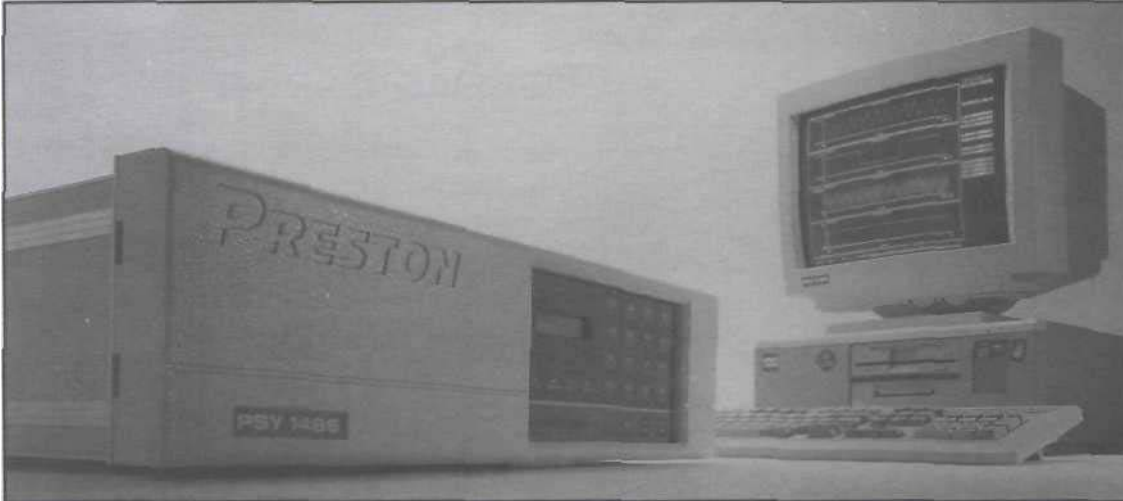


Basic Features	Model				
	8300AU	B300XWB	DX/HDX	MX-B	CM20D
Manual (M) / Programmable (Pg)	M/PG	M	M	M	M
Signal Conditioning	optional	N/A	N/A	N/A	optional
Filter 2 Pole /4 Pole	4	2	2	2	2/4
Cal Feature (V) Yes (N) No	Y	Y	N	N	Y
Floating (Y) Yes (N) No	Y	Y	N	Y	N



General Specifications*	Model				
	AU	XWB	DX/HDX	MX-B	GU20D
Gain	√	√	√	√	√
Ten fixed steps of 1 to 1000. (8300AU 1 to 2048) Variable gain between each step up to a gain of 2500)	M/PG	M	M	M	N/A
Gain Accuracy (% of F.S.)	.1/.01	.01%	.05%	.01%	.05%
Gain Linearity (% of F.S.)	.01%	.005%	.005%	.01%	.005%
Gain Temperature Coefficient (% /°C)	.002%	.001%	.002%	.002	.002%
Gain Stability	0.01% (6 month Term)				
Bandwidth (DC to KHz)	100	100	40	BO	40
Filter (Pg. Sw or fixed) (SW...Switched Manually)	Pg	Sw	Sw	Sw	F/Sw
Drift	1 μV	0.1 μV	1μV	1μV	1μV
Zero Drift RTI (μV/°C)	0.1	.002mV	0.1 mV	0.1 mV	0.1 mV
Zero Drift RTO (mV/°C)	±5μV VRTI. ±1mV RTO at ±10% line voltage				
Long Term Zero Drift (30 day term)					
Common Mode Rejection AC or DC @60Hz	150dB	120dB	150dB	150dB	120dB
Common Mode Voltage Peak AC or	130dB	100/80dB	120dB	120dB	80dB
Input Impedance	350	10/250	350	350	10/250
Input Noise 10Hz BW (P.P)	100 mehoHms snunted By	less than 0.003			
WB (P.P)	0.3μV	2μV	0.2μV	4μV	0.2μV
Output Noise (Peak to Peak)	20μV	15μV	3μV	50μV	3μV
Output Capability Voltage Current	0.6mV	0.3mV	0.1/0.5mV	1mV	0.1/0.5mV
Chopper Intermodulation (less than 0.01% where applicable √)	plus/minus 10 volts				
Amplifier Protection	20m	100mA	100mA	100mA	5mA
Operating Temperature	N/A	√	N/A	√	N/A
Number (N) of Channels/Chassis	Output is unconditionally short-circuit proof				
Mounting	0°C to 50°C (15° to 40°C for 8300AU)				
	16	8	10	10	64
	Up to "N" units per 19 inch RETMA rack				

# An Introduction to PRESYS 1000, 2000 and 4000 Data Conversion Systems



Here is a microprocessor-based data acquisition, simulation and control system so flexible, so versatile and so user-friendly that it literally becomes all things to all users.

- **Multiple Functions**

The PreSys 1000 chassis has 15 slots for thousands of card combinations: A/D & D/A conversion, analog & digital multiplexers, computer interfaces, FIFO memory expansion, diagnostics, chassis expansion logic, plus many others. Any card works in any slot!

- **Multiple Users**

PreSys 1000 can handle up to six unique users, each with their own inputs, outputs, and internal processing. This makes the system ideal for use by individuals or teams in research and engineering applications.

- **Multiple Inputs**

PreSys 1000 provides input signal multiplexers with up to 512 input channels per system. Choice of 7-interchangeable A/D converters with resolution from 13 to 16 bits and channel conversions rate from 300kHz to 1 mHz.

- **Multiple Interfaces**

PreSys 1000 can interface with any computer system used in the instrumentation field. Interface options include Encore, DEC, VME, HP, DG, IEEE488 and SCSI.

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## PRESYS 2000 Data Acquisition system

Provides 2 or 4 parallel A/D Converters Resolution 12 to 16 Bits.

- Aggregate Conversion Rate up to 4 MHZ.
- Input channel configurations consisting of a choice of multiplexers plus other input and output options similar to PRESYS 1000.

Some restrictions apply...each ADC must be scanning same number of channels at the same rate. There must be even number of channels selected. Channel composition for each ADC must be the same.

## PRESYS 4000 Data Acquisition System

Multi-channel A/D and D/A conversion utilizing ADC (and DAC) modules, one per channel.

- Models are available with resolution and accuracy from 12 to 16 bits and conversion rates up to 1 MHZ/channel.
- Composite system transfer rates up to 10MHZ is possible under limited conditions.
- Data transfer rates to computer interface at any data rate up to 5MHZ is possible using PRESYS 4000 squeeze-mode.

*There is a lot more to the PRESYS 1000, 2000 4000 story. Obtain complete data sheet for each model and the various options from Preston Factory Sales Office.*

# PRESYS 1000mV Low Level Input, High Performance Data Acquisition

## High Performance Concept

- ▶ A/D Conversion 13 to 16 bit resolution\*
- ▶ Conversion Rate from 300kHz to 1 MHz\*
- ▶ Variety of input Multiplexors, Amplifiers & Filters\*
- ▶ Digital Inputs and Outputs\*
- ▶ One or more computer interfaces\*
- ▶ FIFO Memory up to 4 Megawords\*
- ▶ Maximum output data rate 5 MHz
- ▶ Software written in Visual Basic

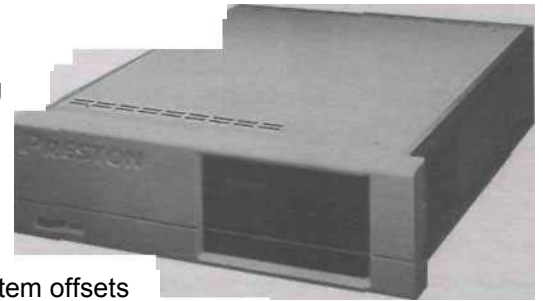
*\*Optional features on PreSys 1000, 2000, 4000 & 1000mV Systems*

## Flexibility Concept

The concept of the PreSys 1000mV is similar to that of the PreSys 1000 Systems. PreSys 1000mV offers a wide range of capability, easy to initially configure, and even easier to reconfigure for future expansion as the user's need evolves. One or more easily adapted or modified computer interfaces. PreSys systems can be equipped with 2 or more independent interfaces.

## PGADC 824...The Heart of the PreSys 1000mV

The PGADC 824 is a 8 channel, low speed, wide dynamic range data acquisition card. Each channel consist of a differential Pg Amp input offering high common mode rejection of 80db plus gain, a low pass normal mode input filter to reduce noise along with low pass common mode filter to reject high frequency pick-up which may become rectified and produce reading errors. Following this input stage is a 24 bit high speed Delta Sigma A/D Converter and a programmable gain amplifier yielding 12 gain ranges from 1 to 2048. The system includes an internal calibration bus to correct for system offsets and gain errors. During calibration the values are stored on a per channel basis to correct the channel for system offset and gain errors. The combination of the Delta-Sigma converter and the Pg amplifier allows the PreSys 1000mV to achieve a dynamic range of 5mV full scale to 10.24 volts full scale into a 16 bit system.



*PG = Programmable Amplifier*

## NEW PRODUCTS

Preston has acquired Cyber Systems Inc and now supports and supplies the Cyber Model DM 7000 Data Acquisition System, the Versaplex 2000NT DAS Sub-system and the FM 7000 Digital Load Control System. Versaplex software and hardware solutions provide complete set of data acquisition tools as a turn key solution running on the Microsoft WindowsNT platform.

## SPECIFICATIONS

Number of Channels	8 true differential input channels per card. 128 channels per chassis. Expandable to 1024 channels.
Input Configuration	Balanced, differential
Input Impedance	Greater than 10Mohms at dc
Maximum Input Voltage	+/- 40V without damage, common mode or differentially
Common Mode Rejection	80 db plus gain in db to 120 db dc to 60 Hz with 350 ohms of source imbalance
Common Mode Voltage	+/- 10V operating
Full Scale Ranges	+/- 5mV to +/- 10.24V in 12 steps
Accuracy After Cal	+/- 0.02% FS +/- 2µV RTI