

## 12 BIT, 4 CHANNEL HIGH SHOCK ANALOG RECORDER

### DESCRIPTION

The Model 74 is a fully programmable, microprocessor controlled, miniaturized, high shock, solid-state, 4 analog channel, 4 digital channel recorder, designed to acquire transducer data in shock environments of up to  $\pm 50,000$  G's. The epoxy-encapsulated unit can be configured for a variety of transducer inputs to accommodate automotive crash testing, blast testing, oil and mining applications, or testing in hostile field environments. The channel gain, bias, trigger levels, and speed options can be programmed into the Model 74 via a computer. Multiple sampling speeds can occur within a single test event.

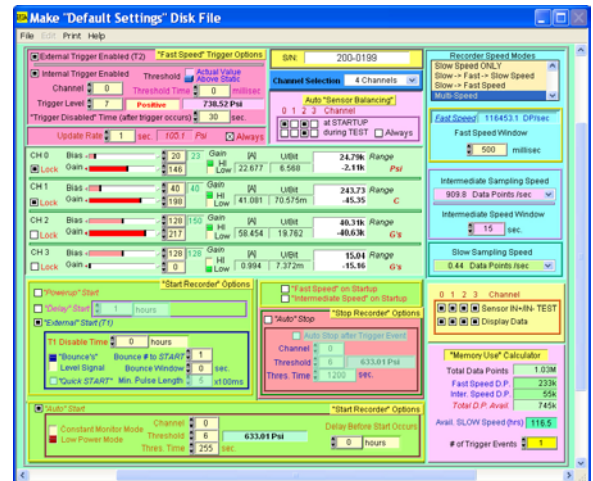
### SOFTWARE PROGRAMMABLE FEATURES

- Can be Programmed as a 1, 2, or 4 Analog/Digital Channel
- 256 Internal Trigger Levels
- 512 Channel Gain and 256 Bias Levels
- Internal and/or External Trigger Operation
- Repeatable Trigger Events (until memory is full)
- Multiple Recording START and STOP Options
  - Manual Start
  - Start on Powerup
  - Start after Time Delay
  - Start on External (OPTO) Trigger Pulse
  - Start on Signal Level
- Multiple Data Collection Speed Modes (speed change on internal / external triggers)
  - Slow to Fast (until memory is full)
  - Slow to Fast, back to Slow
  - Slow to Fast, then to Intermediate, back to Slow
  - Slow Speed ONLY
- 8 Intermediate and 8 Slow Speeds
- Speed Interval Windows
- All programmed settings saved in EEPROM



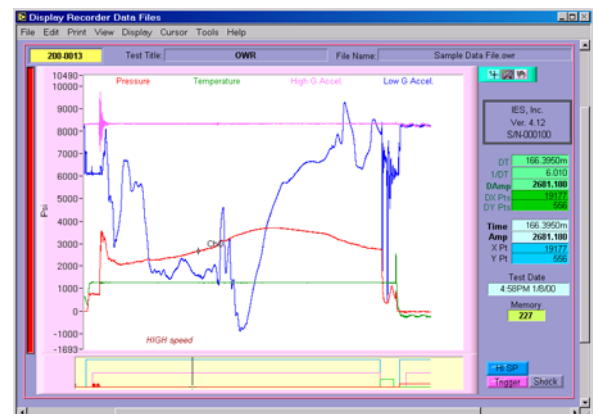
### OTHER FEATURES

- Only 3 wires needed to communicate, program, and download data, via RS-232
- Battery, Voltage and Current Monitoring
- Sensor and Internal Voltage Monitoring
- Auto Sensor Balance and Testing
- Internal Temperature Monitoring
- Pre-Trigger Data Retention
- AUTO Low Battery Shutdown



### Speed Options (Sample Rate / CH)

Fast	Intermediate	Slow
8.6 usec	0.068 msec	0.07 sec
	0.137 msec	0.14 sec
	0.275 msec	0.28 sec
	0.550 msec	0.56 sec
	1.101 msec	1.12 sec
	2.202 msec	2.25 sec
	4.404 msec	4.51 sec
	8.809 msec	9.02 sec



Recorder Software Display

## ELECTRICAL SPECIFICATIONS

Data Input Channels.....	4 Analog (User selectable) and 4 Digital (10K ohm pulldown <sup>1</sup> )
Analog Amplifier Inputs .....	Differential, High-impedance
Analog Low-Pass Filter .....	10 KHz (-3dB), 6-Pole, Low Pass <sup>1</sup>
Digitizer Amplitude Resolution .....	12 Bits (4096 Digital Steps)
Storage Capacity (Total Data Points).....	256K or 2048K <sup>1</sup>
Pre-Trigger Data Points / Channel .....	4096 <sup>1</sup>
Fast Speed Sample Rate / Channel.....	115,000 data points per channel per second
External Trigger.....	3.3 Volt Positive Pulse
External Start (OPTO Isolator) .....	3.3 to 9 Volt Positive Pulse
Supply Voltage <sup>3</sup> .....	7 to 13 DC Volts
Recorder Logic Voltage.....	3.3 Volts
Supply Voltage for External Sensor .....	3.3 Volts
Supply Current:	
Sleep (no RS-232).....	0.6 mA (Typical)
Sleep (with RS-232).....	14 mA (Typical)
Recording Data (channel, sensor dependant) .....	40 - 110 mA (Typical)

## PHYSICAL SPECIFICATIONS<sup>2</sup>

Temperature Range <sup>1</sup> .....	0° C to 75° C
Length <sup>1</sup> .....	2.70"
Diameter <sup>1</sup> .....	1.25"
Weight <sup>1</sup> .....	105 grams
Maximum Shock Level .....	±50,000 G's

*NOTE: The Recorder is fully epoxy-encapsulated with the exception of the input terminals and the output PC Board connector. The outer shell is Stainless Steel, but can be User supplied<sup>1</sup>.*

## FACTORY SELECTABLE OPTIONS<sup>1</sup>

- Storage Capacity Expandable to 2048K Total Data Points
- Pre-Trigger Memory Size (Limited Options)
- User Defined Package Shape

Recorder (Standard configuration)	Model 74
Fast Speed Sample Rate / Channel	115 KHz
Low Pass Filter Bandwidth (-3dB)	10 KHz
Memory Size (Data Points)	256K
Pre Trigger Data Points / Channel	4096
Digital Channel Pulldown	10K ohms



**AI-70 Interface Box**

## DATA RETRIEVAL

Software (supplied with each recorder) is used to program the recorder, retrieve, store, display, examine, and print data. The minimum, recommended computer configuration is: Windows XP, a Pentium 5, 1.5 GHz, 1024 x 768 graphics, 40 Gig drive, 128 Meg memory, RS-232 port, and color printer. The optional AI-70 Interface Box (shown above) can be used to retrieve the data and provide test outputs, and must be purchased separately.

<sup>1</sup>Selectable at Factory ONLY    <sup>2</sup>Does NOT include batteries or sensors    <sup>3</sup>Two (2) BA-1 Batteries required for 4 Channel operation  
 Specifications and options subject to change without notice.

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