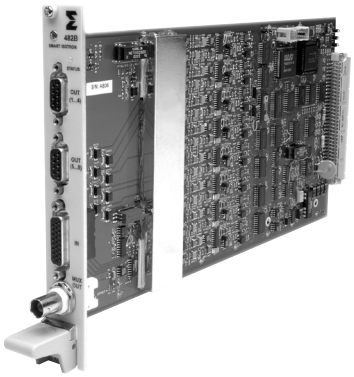
Model 482B
smart transducer/Isotron®
rack mounted signal conditioner

Features

- Low per-channel cost
- 8-Channel i-TEDS amplifier compatible with IEEE P1451.4
- Designed for multi-channel modal testing
- Programmable gain: 0 to 100
- 0.1 Hz to 100 KHz bandwidth (-3 dB Corners)
- Gain auto range
- Selectable butterworth 2-pole low pass filters
- ± 0.5° phase matching
- Digital electronic output channel identification



Description

The model 482B eight-channel amplifier card is the new revolutionized signal conditioner that communicates with newly developed i-TEDS sensors, yet provides backwards compatibility for use with other integral electronic PiezoElectric (IEPE) transducers and remote charge convertors (RCC). Up to 16 model 482B cards can be used in the model 4990A rack, providing a powerful 128 channels of flexible, intelligent signal conditioning. Up to 4 model 482B cards can be inserted into the space saving mini-Oasis rack, model 4998 for a 32 channel system.

Significant features of this revolutionized combination of i-TEDS sensors and intelligent electronics provides a solution that a modal test lab cannot afford not to use. Data entry errors are virtually eliminated and signal conditioning setup time is minimized - i-TEDS sensors contain all pertinent data, which is automatically loaded into a software database at the click of a button. Each model 482B card has an independent microprocessor, providing the fastest means of setup data transfer possible with increased reliability. Model 482B also provides built-in computer-selected, butterworth, low pass filter corners at 100 Hz, 1 KHz, 5 KHz or broadband (100 kHz).

Sensor-specific digital read/write data is in the form of the proposed IEEE-1451.4 TEDS (transducer electronic data sheet). TEDS data includes: transducer sensitivity, manufacturer, model number, sensor serial number, date of last calibration and sensor location.

The model 4990A rack provides the communication link (ethernet or RS-232) from a PC to the oasis family of cards. The model 4998 mini-Oasis rack provides the user a lower cost, space saving option to house from 1 to 4 Oasis cards. The system controlling program, SW2000, is a Windows® based application software providing an extremely user friendly communication interface. The 4XX series amplifier card family includes: model 428 dual channel amplifier with isolation; model 433 three-channel PE/Isotron, non-isolated card also with i-TEDS capability; and the model 436 three channel, non-isolated DC bridge amplifier card.

Applications include: multi-channel modal tests on large structures, such as aircraft, automobiles, buildings, bridges and heavy machinery.

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SPECIFICATIONS

INPUTS

TRANSDUCER TYPES	Smart ISOTRON or any IEPE (Integral Electronic PiezoElectric) type transducers and remote charge convertors.
CONSTANT EXCITATION CURRENT	5 mA ± 20%
ACCURACY	± 1.0 mA
COMPLIANCE VOLTAGE	≥ 22 VDC
MAXIMUM INPUT VOLTAGE	< 22 V (AC + DC Components)
INPUT IMPEDANCE	402 KOhms and 200 pF
EXTERNAL CALIBRATION	
Signal Type	Single ended with one side connected to ground
Input Impedance	1.05 MOhms and 10 pF
Voltage Range	20 V (PK to PK) maximum

OUTPUTS

AC VOLTAGE	Single-ended with one side connected to ground. Signal proportional to input. (All 8 channels provided to the 9 pin D connectors. One of the eight outputs is routed to the front panel BNC connector; computer selectable.)
MINIMUM LINEAR OUTPUT VOLTAGE	10 Vpk
MINIMUM OUTPUT CURRENT	10 mA (10V into a 1 KOhm load)
DC OFFSET	15 mV maximum
PROTECTION	Short-circuit protected

TRANSFER CHARACTERISTICS

GAIN	Programmable 0 to 100.
ACCURACY	±0.5% at 1 KHz for gains greater than 1
LINEARITY	±0.1% of full scale, best fit straight line at 1 KHz
RESIDUAL NOISE	15 μV rms (2 Hz to 100 Hz) 50 μV P/P (DC to 5 KHz) Maximum noise specification valid for the following conditions: 1. Unit not communicating with host PC; 2. Input shunted with 100 Ohms ±5%, 4 mA excitation.
BROADBAND MAGNITUDE FREQUENCY RESPONSE	±5%: 0.2 Hz to 30 KHz, referenced to 1KHz -3 dB: 0.015 Hz to 100 KHz, referenced to 1KHz
WORST CASE PHASE DEVIATION FROM NOMINAL	Less than ±0.5 degrees from 2 Hz to 5 KHz
CROSSTALK BETWEEN CHANNELS	>80 dB; RTI Minimum @ 10KHz Crosstalk specifications valid for the following conditions: (1.) Inject a signal through the Isotron input into one channel set at a gain of 1; (2.) The other channels Isotron inputs shunted with 249 Ohms; external CAC imput shunted

POWER REQUIREMENTS

VOLTAGE	DC power source provided by Model 4990 Rack or model 4998 rack (90 to 264 VAC, 50 Hz to 400 Hz, Universal Input)
POWER DISSIPATION	6.2 Watts typical
ISOLATION	
Channel to Channel Signal Grounds	No isolation between channels
Signal Ground to Case Ground	No isolation

PHYSICAL CHARACTERISTICS

CARD DIMENSIONS	Fits into Model 4990A Rack
FRONT PANEL	173.15 mm (6.81" X 1.00" (5HP)
WEIGHT	12.5 oz (355g)
CONNECTORS ON CARDS	
Isotron Inputs	Double density subminiature-D, 26 PIN, female (receptacle) shell size 2.
Signal Outputs	Standard-D, 9-pin, female (receptacle). One BNC computer selected to one of the 8 channels.

ENVIRONMENTAL CHARACTERISTICS

OPERATING TEMPERATURE	32° F to 122° F (0° to 50° C)
STORAGE TEMPERATURE	-40° F to 185° F (-40° to 85° C)
HUMIDITY	0% to 90% non-condensing.

INCLUDED ACCESSORIES

IM482B Instruction Manual

OPTIONAL ACCESSORIES

36019	Input breakout box with BNC connectors	33136-1-040	40-inch Cable with DB9 and VXI connectors
36020	Output breakout box with BNC connectors	4998	4 Slot Rack w/RS-232 only
36018	Programmer, TEDS 1451.4 Reader/Writer Kit	4990A-1	16 Slot Rack w/Ethernet & RS-232
36004	Handheld Programmer, TEDS	4990A-2	16 Slot Rack w/ RS-232 only

NOTES

This is an advance, preliminary data sheet. All specifications are subject to change without notification.

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