

# Modal Analysis

## CHANNEL COUPLER

The Model 5128 Coupler is a rack-mountable, line-powered 16-channel unit for use with Piezotron<sup>®</sup> transducers, PiezoBEAM<sup>™</sup> accelerometers of high-impedance transducers with external impedance converters. The coupler mounts in a standard 19 in. rack and each channel contains constant current supply for the transducer electronics, unity gain buffer stage, bias decoupling network, and a line test feature. **Kistler Instrument Corporation** 153

## MODAL ANALYSIS TESTING

Experimental modal analysis testing has been made available as a stand-alone service. Measurement services for experimental modal analysis are offered for both laboratory and field environments. Work has ranged in size from small turbine blades to the lock gates of the Panama Canal and

has required various techniques to excite the structure and extract the necessary data. **Teledyne Engineering Services** 155

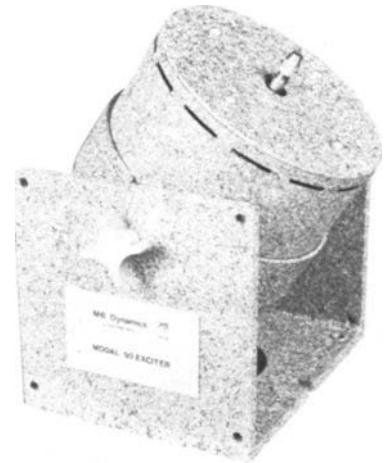
## CREDIT CARD RENTAL

The first credit card in the test equipment rental industry is offered by the company. **MetriCard<sup>™</sup>** turns instrument rental into a fast, simple process and also provides customers with benefits such as discounts and special free services. The **MetriCard** makes possible a range of discounts based on the rental amount and time period as well as priority service. **Leasametric IRD** 154

## SOFTWARE PRODUCTS

A wide range of software products for the experimentalist has been made available. Of special interest is the **PAFEC-FE** (a finite-element analysis system) which is a large scale, general purpose 2D and 3D linear and non-

linear system. The system's capabilities include automatic mesh generation, elastic stress analysis, large deflection analysis, modes and frequencies, dynamic response, creep, plasticity, and steady state and transient thermal solutions. Standard facilities include static stress analysis, dynamic analysis, temperature analysis, and boundary conditions. Subsystems which can extend user requirements are: non-linear analysis, substructures, boundary element analysis, cyclic symmetry, matrix manipulation, lubrication, acoustic analysis and the **NASTRAN** interface option. **PAFEC, Inc.** 156



## MODAL EXCITER

The **MODAL 50** exciter was designed by a team of world respected modal testers, including University of Cincinnati professors, to eliminate problems encountered when using environmental shakers for modal tests. Conveniences in fixturing and set-up include a clearance hole through the armature and shaker housing, plus a collet chuck for gripping a threadless stringer, provide for easy attachment of the **MODAL 50** to the test structure. Fifty pounds dynamic force from an exciter weighing just over 50 pounds makes the unit portable allowing for one-man setup. The **MODAL 50** comes with an accessory case containing all the miscellaneous bits and pieces you need.

**MB Dynamics**

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## New SPATE 9000 STRESS ANALYZER

*A unique computer-controlled instrument for non-contact stress measurements*

**SPATE 9000** offers unique features for evaluating a broad range of components from small aeroengine turbine blades to large civil engineering structures.

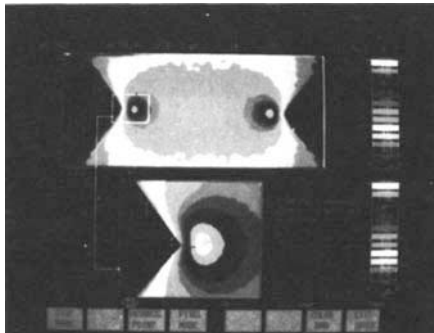
**SPATE 9000** has proven applications in aerospace, automotive, marine for:

- Design analysis of real structures and models
- Fatigue studies
- Materials testing
- Quality assurance
- Design validation/optimization
- Assessment of alternative manufacturing techniques

**SPATE 9000** will analyze stresses in: Aluminum, Steel, Titanium, Plastics, Composites, Glass, Bone, Epoxy Resins, Concrete, Brick, Ceramics

### Features

- Non Contacting
- Full-Field Mapping
- Speed
- Rapid Set-Up
- Minimal Surface Preparation
- Versatility
- Multiple Scan Modes
- Color Hardcopy
- Advanced Analysis and Manipulation of Data
- Split Screen Display
- Fast 32 Bit Computer
- Interactive Graphics Displays
- RS-232 and HPIB Interfaces



**SPATE 9000** Stress Map: Notched aluminum plate

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