P-Sys-Modal
P-Win-Modal

P-Sys-Modal & P-Win-Modal system.

The designer who wants to predict or study the vibrations of a structure needs to know its dynamic characteristics. Determining these characteristics consists of locating and analysing the vibration modes of the structure.

Nearly all the modes are coupled, but by using an optimum combination of multiple excitation forces, our system allows you to dissociate them, using the "unique" appropriation method. Then the analysis consists of the isolation of each mode, in the recording of its own forms and in the automatic calculation of the generalised coefficients of mass, stiffness and damping.

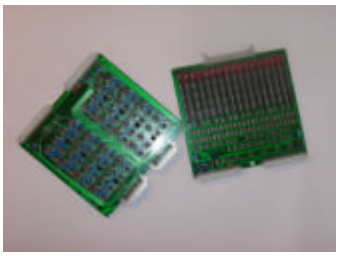
Rich with 40 years of experience, **P-Sys-Modal**Ô system and **P-Win-Modal**Ô software represent the latest state of the art of **PRODERA** modal analysis systems.

The appropriation method is based on the capacity to generate very stable pulse and sine excitations. With a frequency stability of 10^{-8} Hz, **P-Sys-Modal**Ô is perfectly adapted to do that.

Appropriation is not resumed in generating an excitation signal. **P-Sys-Modal**Ô generates up to 32 in phase or out of phase different signals.

EXCITATION MAIN FEATURES:

- ◊ Sine, impulse or random excitation
- ◊ DC to 2 KHz
- ◊ Frequency stability: 10^{-8} Hz
- ◊ Amplitude stability: $5 \cdot 10^{-3}$ V
- ◊ 32 outputs ± 5Vp
- ◊ Output with 0 or π phase shift
- ◊ 4 non correlated white noises



Acquisition is the second part of **P-Sys-Modal**Ô system.
From 32 to 256 channels in the basic configuration (upgrade possible up to 1024 channels) **P-Sys-Modal**Ô will cover all your requests.

Harmonic tests are based on the analysis of the real and imaginary parts of the acquired results. A specially developed digital board calculates in real time these two magnitudes, reducing computation time and increasing the accuracy of the results.

ACQUISITION MAIN FEATURES:

- ◊ From 32 to 256 (or 1024) differential channels
- ◊ Response real & imaginary parts calculated by hardware

P-Sys-ModalÔ is controlled by a PC Pentium and **P-Win-Modal**Ô modal software.

A manual keyboard is available for a user-friendly operation.

OTHER AVAILABLE MODULES:

- ◊ Random excitation
- ◊ Multi-lissajous visualisation

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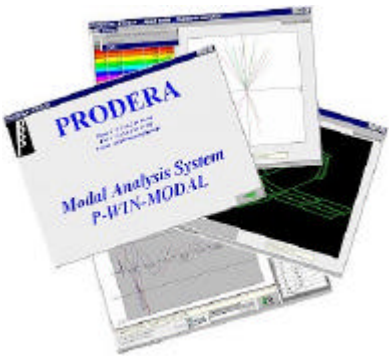
Data sheet N° 01/PSM-PWM/001-b

P-Sys-Modal
P-Win-Modal



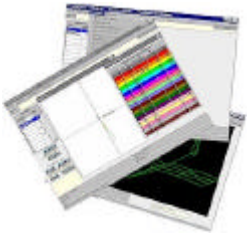
If **P-Sys-Modal**Ò represents the latest evolution in modal excitation and acquisition equipment, **P-Win-Modal**Ò represents its logical control and analysis software.

As a result of the requirements from **PRODERA**'s customers, **P-Win-Modal**Ò allows an easy set-up of the test, as well as the quick and simple calculation of the different modal parameters.

By using the file "hardware inventory" of available exciters and transducers, no possible errors are made by defining the sensitivities.

Data is organised following the structure under test.
As several geometries are available for each structure (introduced from a digitiser table), it is easy to change structure configuration without changing the complete test set-up.

Multi-point impulse test quickly gives a first approximation of the structure's behaviour and optimum excitation conditions.



By using the appropriation method, the harmonic excitation allows effective isolation of the vibration modes. By using the Complex power and/or Quadrature methods the modal parameters are obtained.

Using **P-Sys-Modal**® digital multiplier board allows real-time visualisation of the structure's mode shape.

DynaWorks®
un produit Intespace

DynaWorksã software package for measurement, test, data management and analysis is used by **P-Win-Modal**ã as integrated data management utility.

P-Win-Modal® is integrated to a large modal analysis environment with other software packages in order to create a complete and competitive environment:

- ◊ **P-Win-Modal**®: Modal analysis software
- ◊ **P-Flight-Modal**®: Flutter prediction software
- ◊ **FEMTools**®: Data analysis software (DDS – Belgium)
- ◊ **SDT Toolbox**®: Modal analysis using Matlab®

P-Win-Modal
Structural Dynamics FEMtools
Toolbox

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