

6-AXIS PLATFORM



Non contractual photo

SERVICE : POWER SUPPLY : 220 V AND 50 HZ 1 PC COMPATIBLE PC WITH WINDOWS 98, 2000, XP INSTALLED AND A FREE PCI SLOT
DIMENSIONS : 580 X 500 X 420 MM

WEIGHT : 15KG

REFERENCE : EX800-B

The 6-axis platform, EX800, is a set to conduct a very comprehensive study on a high-performance equipment representative of flight simulators and driving, machine tools, dynamic cinema, robots, large astronomical telescope.

Educational Objectives :

The platform allows :

- The study of systems and constituents of functional chains
- System analysis, modeling and control

Performance verification in :

- mechanical : geometry, kinematics, static and dynamic, mechanical structures.
- automatic : position control, accuracy, speed, stability, influence of correctors.

Using the software, you can perform :

- A simulation of the different mechanical architectures of this system
- A steering generating the instructions for moving the cylinders to reach a position or a set of positions (trajectory)
- A visualization of the data acquired as a graph
- Conducting practical work

Technical specifications :

The platform includes :

- An operative part
- A command part

The architecture of the operative part is that of a parallel robot with 6 cylinders. Each of the cylinders has one end articulated on a fixed base and the other end is articulated on a mobile platform. Each cylinder is an electric cylinder constructed from a motorized helical link using a DC motor.

The servocontrol of each jack is performed by an absolute position sensor. It is optimized by a tachometer generator. A seventh cylinder is mounted isolated on a specific support. It makes it possible to carry out tests (stiffness, influence of the parameters of the servocontrol, etc.) while avoiding the dynamic coupling phenomena encountered on a 6-axis platform.

The control of the 6 axes of the platform is done from a PC, an I / O interface card (in PCI format) and a 7-axis control card integrated in the base of the platform.

Communication between the PC and the platform is in both directions. Data acquisition (position setpoint, velocity position feedback, torque)

is performed in real time on 3 axes.
The study of small displacements is carried out by a measurement system with 6 comparators. A model of the platform with adjustable cylinders in length and magnetic fasteners allows the study of different configurations of the platform.

Composition of the EX800

1 platform with 6 cylinders
1 isolated cylinder mounted on its specific support
1 measuring table with 6 comparators
1 I / O interface card and associated software
Simulation and control software
1 plastic model with movable jacks and manual adjustment

1 workbook comprising :

- An educational file with texts of TP and corrected
- A reference file
- A technical file
- A description of the software features.
- A set of DAO files

OPTIONS :

A technological study case of a single cylinder : EX514 A complete kit for EX830 effort measurement