



### INCLUDED MODULES

#### ALI02. Domestic Main Power Supply

- Magneto-thermal protection.
- Differential protection.
- Single -phase plug and terminals.
- 2 lamps.
- Terminals (phase, neutral, earth).
- Mushroom security button.
- Removable key.

#### IAD01. 1-pole + neutral Differential Automatic Switch, 6A, 30mA, class A

- 1 pole + neutral.
- 6 A.
- Sensitivity 30 mA.
- A class.

#### CAR04. Variable Resistive Load

- Variable resistance.
- Easy value control.

### EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- To simulate a fault to earth and to test if the differential breaks.
- 2.- To calculate the current earth fault.
- 3.- Study of fault circuit.

### DIMENSIONS & WEIGHTS

- Dimensions: 490 x 330 x 310 mm. approx.
- Weight: 5 Kg. approx.



ISO 9001:2000  
Certificate of Approval



European Union Certificate

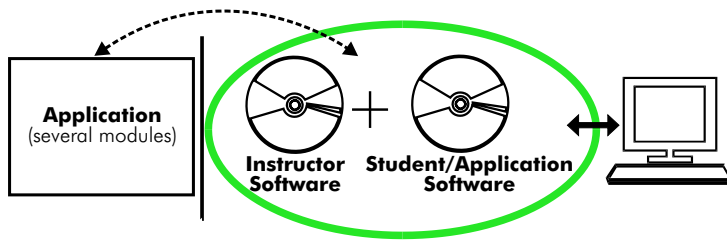


Certificates ISO 14001: 2004 and  
ECO-Management and Audit Scheme  
(environmental management)



Worlddidac Quality Charter  
Certificate  
Worlddidac Member

# CAI. Computer Aided Instruction Software System



With no physical connection between application/module and computer, this complete package consists on an Instructor Software (INS/SOF) totally integrated with the Student/Application Software. Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students. These, on the other hand, get a virtual instructor who helps them to deal with all the information on the subject of study.

With the INS/SOF. Classroom Management Software Package (Instructor Software), the Teacher has a whole range of options, among them:

- Organize Students by Classes and Groups.
  - Create easily new entries or delete them.
  - Create data bases with student information.
  - Analyze results and make statistical comparisons.
  - Print reports.
  - Develop own examinations.
  - Detect student's progress and difficulties.
- ...and many other facilities.

Examples of the Software screens



The Instructor Software is the same for all the applications, and working in network configuration, allows controlling all the students in the classroom.

## A.../SOF Computer Aided Instruction Software Packages (Student/Application Software).

It explains how to use the application /module, run the experiments and what to do at any moment.

Each application has its own Student Software package.

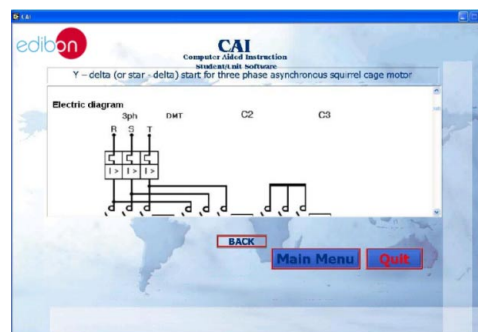
- The options are presented by pull-down menus and pop-up windows.
- Each Software Package contains:

**Theory:** that gives the student the theoretical background for a total understanding of the studied subject.

**Exercises:** divided by thematic areas and chapters to check out that the theory has been understood.

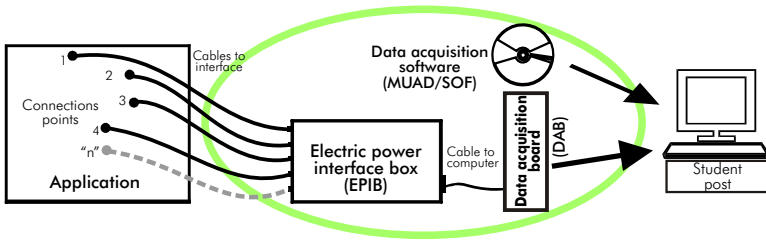
**Guided Practices:** presents several practices to be done, alongside the applications/modules, showing how to complete the exercises and practices.

**Exams:** set of questions presented to test the obtained knowledge.



\* Software is available in English and Spanish. Any other language available on request.

# MUAD. Power Data Acquisition System



MUAD is the perfect link between the application/module and the PC. MUAD is a continuous data acquisition system with virtual instrumentation, that measures, analyzes and represents the parameters involved in the process. MUAD allows voltage and current acquisition and measurement, data processing, frequency spectrum and all the functions of a digital oscilloscope. We easily connect the Electric Power Interface Box (EPIB) to the application/module with the supplied cables (there are several connection points placed for it). The EPIB is connected to the PC through the Data Acquisition Board (DAB), and by using the Data Acquisition with Virtual Instrumentation Software, the student can get results from the undertaken experiment/practice, see them on the screen and work with them.

The MUAD system allows voltage and current measurement and acquisition, data processing, frequency spectrum and the functions of a digital oscilloscope.

**This MUAD System includes EPIB + DAB + MUAD/SOF:**

1) Hardware:

1.1) EPIB. **Electric power interface box** (dimensions: 300 x 120 x 180 mm. approx.):

Interface that carries out the conditioning of the diverse signals that can be acquired in a process, for their later treatment and visualisation.

In the front panel, the elements are separated in two parts: left-hand part to VOLTAGE sensors, and right-hand part corresponds with CURRENT sensors.

Analogue Input Channels:

8 analog input channels. Sampling range: 250KSPS (kilo samples per second).

4 Tension sensors AC/DC, 400V. 4 Current sensors.



EPIB

1.2) DAB. **Data acquisition board**:

PCI Data acquisition board (National Instruments) to be placed in a computer slot.

Bus PCI.

Analogue input:

Number of channels = 16 single-ended or 8 differential.

Resolution = 16 bits, 1 in 65536.

Sampling rate up to: 250 KSPS (Kilo samples per second).

Input range (V) = ±10V.

Data transfers = DMA, interrupts, programmed I/O.

Number of DMA channels = 6.

**Analog output:**

Number of channels = 2.

Resolution = 16 bits, 1 in 65536.

Maximum output rate up to: 833 KSPS.

Output range (V) = ±10.

Data transfers = DMA, interrupts, programmed I/O.

**Digital Input/Output:**

Number channels = 24 inputs/outputs.

D0 or DI Sample Clock frequency: 0 to 1 MHz.

Timing: Counter/timers = 2.

Resolution: Counter/timers = 32 bits.



DAB

2) MUAD/SOF. **Data acquisition software**:

Data Acquisition Software with Graphic Representation:

Amicable graphical frame.

Compatible with actual Windows operating systems.

Configurable software allowing the representation of temporal evolution of the different signals.

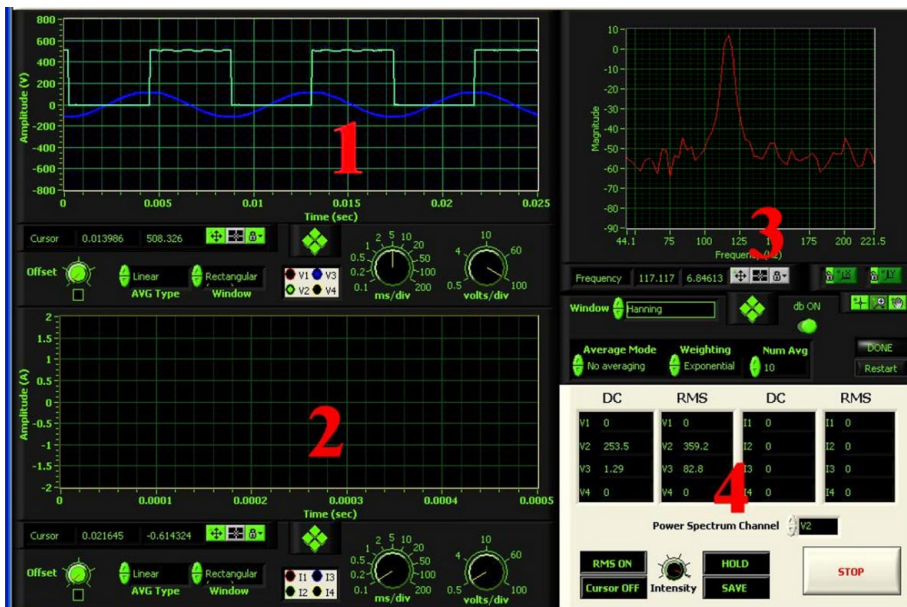
Visualization of a tension of the circuits on the computer screen.

Sampling velocity up to 250 KSPS (Kilo samples per second) guaranteed.



MUAD/SOF

## Software Main Screen



- 1.- Voltage channels section
- 2.- Current channels section
- 3.- Power spectrum section
- 4.- General control panel section



## Manuals and Accessories

**Manuals:**

Manuals are developed following the SELF-TEACHING principle, thus facilitating to the utmost student's productivity when completing the practices/exercises. 8 Manuals are supplied with each application.

**Accessories:**

With the each application will be supplied a safety wires kit for doing all practices (CABD), net cable, adaptors, etc, for normal operation.

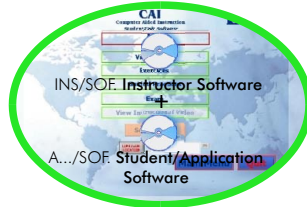
### Working possibilities:

#### 1) Working possibility CAI + MUAD (EDIBON complete system)



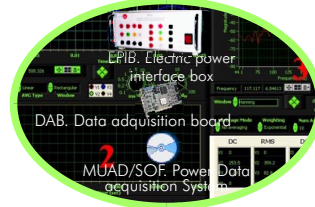
Application

+



CAI.  
Computer Aided Instruction  
Software System

+



MUAD  
Power Data Acquisition System

+

Manuals

#### 2) Working possibility MUAD



Application

+



MUAD  
Power Data Acquisition System

+

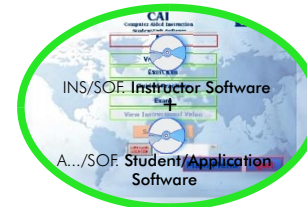
Manuals

#### 3) Working possibility CAI



Application

+



CAI.  
Computer Aided Instruction  
Software System

+

Manuals

#### 4) Simplest Working possibility



Application

+

Manuals

\* Specifications subject to change without previous notice, due to the convenience of improvements of the product.



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REPRESENTATIVE: