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 ↳ PRODUCTS  
 ↳ 40.- ELECTRICITY

### INTRODUCTION

Home automation is the branch of automation applied to houses. Nowadays there are many home automation systems to control some components automatically, manage the energy consumption more efficiently, provide more security against accidents or robbery, etc. In general, home automation helps to make life easier, turning our homes into smart homes.



ISO 9001: Quality Management (for Design, Manufacturing, Commercialization and After-sales service)



European Union Certificate (total safety)



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



Certificate and Worlddidac Member

## GENERAL DESCRIPTION

The Home Automation Application with ZigBee Wireless Protocol, "AEL-AD28C", is a home automation application, which is composed by a set of modules that cover different areas of home automation field, such as, wireless control of lighting, energy management or wireless intrusion sensor.

Besides, the AEL-AD28C includes software to develop several control configurations depending on the user's needs.

It is a flexible home automation application, that is to say, the user will be able to develop several configurations to simulate different real situations.

The versatility of the AEL-AD28C is based, to a great extent, on the Zig-Bee communications protocol. One of the main characteristics of this protocol is the fact that it does not need any control wiring, since all sensors and actuators communicate with each other through radio frequency, behaving as nodes and transmitters.

Finally, the AEL-AD28C includes a set of practical exercises, which allows the student to learn the different possibilities that current home automation systems offer.

The AEL-AD28C includes the following modules:

- N-HPM. Home Power Module.
- N-IOWM. Wireless output module (4 units).
- N-WISM. Wireless Intrusion Sensor.
- N-WSM. Wireless Switch Module.
- N-LAM16. Incandescent Lamp (2 units).
- N-SEL04. Four pilot lights.
- N-TIM05. Bell + Buzzer.

Expansion learning software:

In addition, Edibon provides expansion learning software (AEL-AD28C/ICAI) to reinforce knowledge about this field.

This software is formed by:

- ECM-SOF. EDIBON Classroom Manager (Instructor Software).
- ESL-SOF. EDIBON Student Labsoft (Student Software).

The application AEL-AD28C can be mounted on rack (option A) or on rail (option B):

Option A:

This application needs the following racks:

- N-RACK-A.

Optionally the AEL-WBR. Electrical Workbench (Rack) can be supplied to place the rack/s.

Option B:

This application can be mounted on rail.

Optionally the AEL-WBC. Electrical Workbench (Rail) can be supplied to mount the modules.

## SPECIFICATIONS

The application includes the following modules:

- **N-HPM. Home Power Module.**  
 Voltage supply: 230 VAC.  
 Residual current circuit breaker (RCCB).  
 Power meter.  
 Energized circuit LED .  
 Output voltage port, 230 VAC.  
 Input voltage port, 230 VAC (it can be directly connected to the 230 VAC output).  
 Eight supply output ports.  
 Ground connection.  
 Zmeter, wireless power meter capable of switching the circuit on/off:  
   ON/OFF switch.  
   3.5 mm jack.  
   Two AAA batteries.  
   Detection range, 10 m.  
   Transmission range: 100 m outdoors and 30 m indoors.  
   Channels: 19 (2445 MHz), 20 (2450 MHz), 25 (2475 MHz).
  
- **N-IOWM. Wireless output module. (4 units).**  
 Voltage supply: 230 VAC.  
 Fuse, 2 A.  
 Ground connection.  
 Two outputs of 230 VAC.  
 Two pilot lights to indicate energized outputs.  
 ZLight, wireless module to control the outputs closing/opening:  
   Maximum power: 50 W.  
   Voltage supply range: 85-263 V.  
   Frequency: 50-60 Hz.  
   Transmission range: 30 m indoors and 100 m outdoors  
   16 transmission channels, 2.405-2.480 GHz.
  
- **N-WISM. Wireless Intrusion Sensor.**  
 Sensor ZDOOR:  
   Lithium battery CR2032.  
   Fixed magnet for mobile part of door/window.  
   Sensor for fixed part of Windows/door, it includes pilot light and button.  
   Transmission range 100 m outdoor and 30 m indoor  
   16 transmission channels 2.405-2.480 GHz
  
- **N-WSM. Wireless Switch Module.**  
 Ground connection  
 Wireless switch:  
   5 opening/closing command.  
   Temperature sensor.  
   CR2032 lithium batter.  
   Transmission range: 30 m indoors and 100 m outdoors.  
   16 channels, 2.405-2.480 GHz.
  
- **N-LAM16. Incandescent Lamp. (2 units).**  
 Nominal voltage: 230 VAC (PH+N).  
 Halogen lamp.  
 Power: 60 W.
  
- **N-SEL04. Four pilot lights.**  
 Voltage supply: 230 VAC.  
 Colors: red and green.  
 Ground connection.
  
- **N-TIM05. Bell + Buzzer.**  
 Voltage supply: 230 VAC.  
 Bell sound, 70 dB.  
 Buzzer sound, 80 dB.



N-HPM



N-IOWM



N-WISM



N-WSM



N-LAM16



N-SEL04



N-TIM05

- **All necessary cables to realize the practical exercises are included.**

**Cables and Accessories**, for normal operation.

**Manuals:**

This unit is **supplied with the following manuals:** Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

## EXERCISES AND PRACTICAL POSSIBILITIES

- 1.- Programming the maximum consumed energy.
- 2.- Lights remote control.
- 3.- Bell and buzzer remote control.
- 4.- Programming the lights switching on/off.
- 5.- Simulation of a typical home automation system.
- 6.- Programming the bell and buzzer together with the red and green pilot lights.

### REQUIRED SERVICES

- Electrical supply: single phase, 230 V./50 Hz. or 115 V./60 Hz.

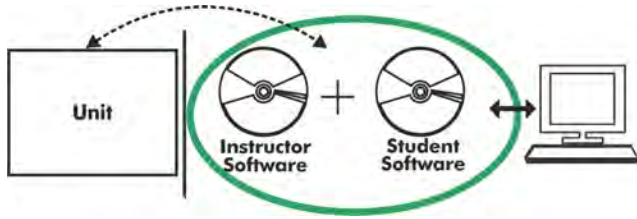
### DIMENSIONS AND WEIGHTS

AEL-AD28C:

- Dimensions: 640 x 320 x 920 mm approx.  
(25.19 x 12.59 x 32.22 inches approx.)
- Weight: 60 Kg approx.  
(132 pounds approx.)

## Optional

### AEL-AD28C/ICAI. Interactive Computer Aided Instruction Software System:



With no physical connection between unit and computer (PC), this complete software package consists of an Instructor Software (EDIBON Classroom Manager -ECM-SOF) totally integrated with the Student Software (EDIBON Student Labsoft -ESL-SOF). Both are interconnected so that the teacher knows at any moment what is the theoretical and practical knowledge of the students.

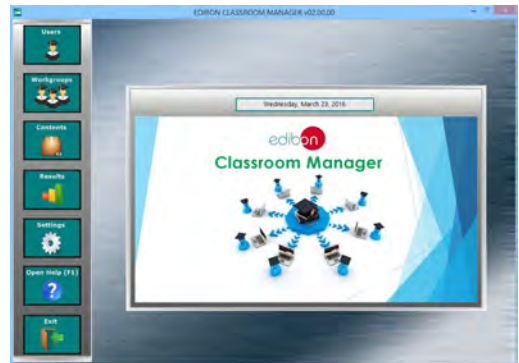
### Instructor Software

- ECM-SOF. EDIBON Classroom Manager (Instructor Software).

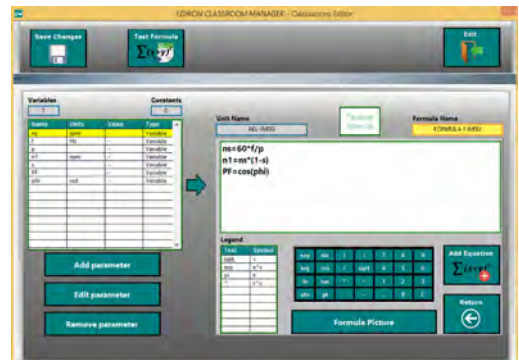
ECM-SOF is the application that allows the Instructor to register students, manage and assign tasks for workgroups, create own content to carry out Practical Exercises, choose one of the evaluation methods to check the Student knowledge and monitor the progression related to the planned tasks for individual students, workgroups, units, etc... so the teacher can know in real time the level of understanding of any student in the classroom.

Innovative features:

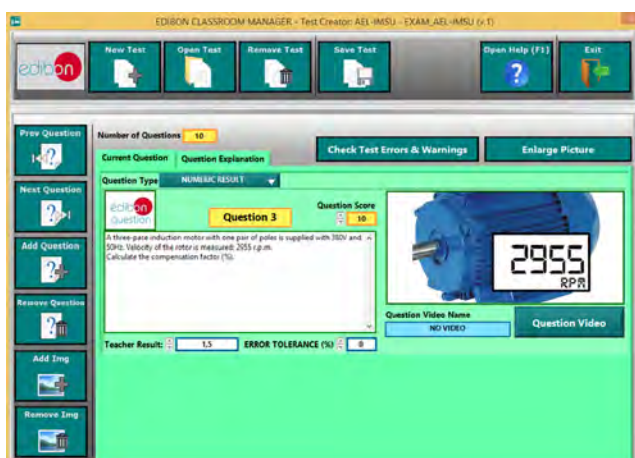
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.
- Updatable Contents.
- Report generation, User Progression Monitoring and Statistics.



ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



ECAL. EDIBON Calculations Program Package - Formula Editor Screen



ETTE. EDIBON Training Test & Exam Program Package - Main Screen with Numeric Result Question



ERS. EDIBON Results & Statistics Program Package - Student Scores Histogram



Optional  
**Student Software**

- ESL-SOF. **EDIBON Student Labsoft (Student Software)**.

ESL-SOF is the application addressed to the Students that helps them to understand theoretical concepts by means of practical exercises and to prove their knowledge and progression by performing tests and calculations in addition to Multimedia Resources. Default planned tasks and an Open workgroup are provided by EDIBON to allow the students start working from the first session. Reports and statistics are available to know their progression at any time, as well as explanations for every exercise to reinforce the theoretically acquired technical knowledge.

Innovative features:

- **Student Log-In & Self-Registration.**
- **Existing Tasks checking & Monitoring.**
- **Default contents & scheduled tasks available to be used from the first session.**
- **Practical Exercises accomplishment by following the Manual provided by EDIBON.**
- **Evaluation Methods to prove your knowledge and progression.**
- **Test self-correction.**
- **Calculations computing and plotting.**
- **Equation System Solver Engine.**
- **User Monitoring Learning & Printable Reports.**
- **Multimedia-Supported auxiliary resources.**

For more information see **ICAI** catalogue. Click on the following link:

[www.edibon.com/en/files/expansion/ICAI/catalog](http://www.edibon.com/en/files/expansion/ICAI/catalog)



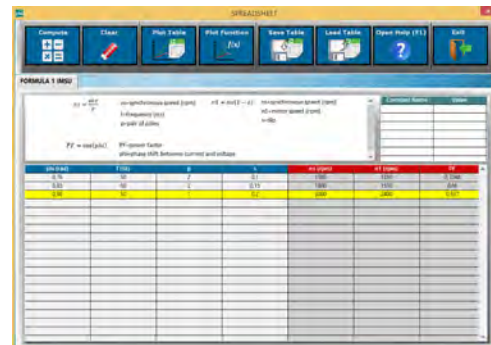
ESL-SOF. EDIBON Student LabSoft (Student Software)  
Application Main Screen



EPE. EDIBON Practical Exercise Program Package Main Screen



ERS. EDIBON Results & Statistics Program Package - Question Explanation



ECAL. EDIBON Calculations Program Package Main Screen

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



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Edition: ED01/17  
Date: November/2017

REPRESENTATIVE:

