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 ↳ PRODUCTS
 ↳ 40.- ELECTRICITY

INTRODUCTION

Over the years, industry has always sought to improve the efficiency of the processes and the least human intervention. One of many devices have made this possible is the position switch or limit switch.

This kind of device can detect the passing of an object through an actuator and change the state of the electrical circuit. For example, in a conveyor, an object get to a certain point and activates the actuator, which send a signal to the electrical circuit so that the next object could join in the conveyor.



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 Position Switches Application, "AEL-AD24", has been designed by Edibon in order to demonstrate how the different safety switches work, such as MBB (Make before break), BBM (break before make) and instantaneous micro-switch. This kind of device consists of an actuator mechanically linked to a set of contacts. When an object comes into contact with the actuator, the device operates the contacts to make or break an electrical connection. For instance, limit switches are used in a variety of applications and environments for their ruggedness, ease of installation, and reliability of operation. They can determine the presence or absence, passing, positioning, and end of travel of an object. They were first used to define the limit of travel of an object; hence the name Limit Switch.

This application includes all necessary elements to understand how work MBB, BBM and instantaneous switches. In addition, a series of lamps are included to show the switches' state.

The AEL-AD24 includes the following modules:

- N-ALI02. Domestic Main Power Supply.
- N-ALI03. AC Auxiliary Power Supply (24 VAC).
- N-SEN01. Instantaneous Micro-Switch Module.
- N-SEN02. MBB Micro-switch Module.
- N-SEN03. BBM Micro-switch Module.
- N-LAM03. 3 Push-buttons and Pilot-lights.

Expansion learning software:

In addition, Edibon provides expansion learning software (AEL-AD24/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-AD24 can be mounted on rack (option A) or on rail (option B):

Option A:

This application needs the following rack:

- N-RACK-M.

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-ALI02. Domestic Main Power Supply.**

Supply voltage (Single-Phase): 230 VAC, PH+N+G.

ON-OFF removable key.

Output Voltage Connections:

Two Single-Phase: 230 VAC.

Single-Phase supply hose connecting plug.

Differential magnetothermal, 2 poles, 25 A, 30 mA AC 6 KA.



N-ALI02

- **N-ALI03. AC Auxiliary Power Supply.**

Supply voltage (Single-Phase): 230VAC PH+N+G.

Output voltage:

Single-Phase 24 VAC / 12 VAC.

24 VDC.

0-24 VDC through potentiometer.



N-ALI03

- **N-SEN01. Instantaneous Micro-switch.**

Instantaneous switch: NO and NC contacts.

Nominal voltage: 240 VAC.

Nominal current: 3 A.

Contacts:

One Normally Open Contact (NO).

One Normally Close Contact (NC).

Ground terminal



N-SEN01

- **N-SEN02. MBB Micro-switch.**

Make before break action (MBB): continuous contact, NO contacts close before NC contacts open.

Nominal voltage: 240 VAC

Nominal current: 3 A.

Contacts:

One Normally Open Contact (NO).

Two Normally Close Contacts (NC).

Ground terminal.



N-SEN02

- **N-SEN03. BBM Micro-switch.**

Brake before make action (BBM): discontinuous contact, NC contacts open before NO contacts close.

Nominal voltage: 240 VAC.

Nominal current: 3 A.

Contacts:

One Normally Open Contact (NO).

Two Normally Close Contact (NC).

Ground terminal.



N-SEN03

- **N-LAM03. Three Push-buttons and Lamps Module.**

Nominal voltage: 230 VAC.

Three lamps (red, yellow and green).

Three normally open push-buttons (red, yellow and green).

Contacts:

Three Normally Open Contacts (NO).

Ground terminal.



N-LAM03

- **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.- Identify and measuring on the main power supply. | 5.- Checking the working mode of a MBB micro-switch. |
| 2.- Checking the working of auxiliary power supply. | 6.- Checking the working mode of the BBM micro-switch module. |
| 3.- Checking the working of push-buttons and pilot-lights. | 7.- Real application of the position switch. |
| 4.- Checking the working mode of an instantaneous micro-switch module. | |

REQUIRED SERVICES

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| - Electrical supply: three-phase, 380V/50 Hz or 208V/60 Hz, 20 Kw. |
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DIMENSIONS AND WEIGHTS

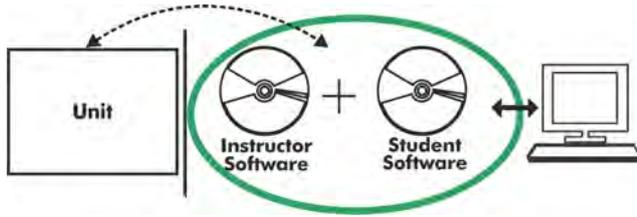
AEL-AD24:

-Dimensions: 640 x 320 x 670 mm. approx. (25.19 x 12.59 x 26.37 inches approx.)
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-Weight: 35 Kg. approx. (77 pounds approx.)
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Optional

AEL-AD24/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.

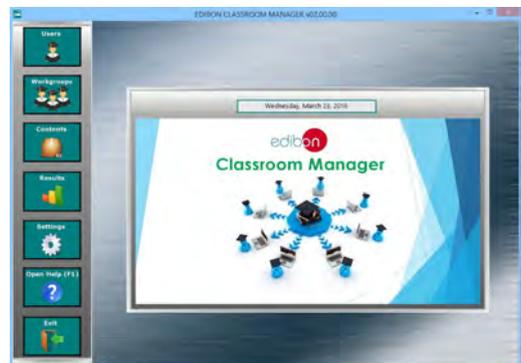
Instructor Software

- 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:

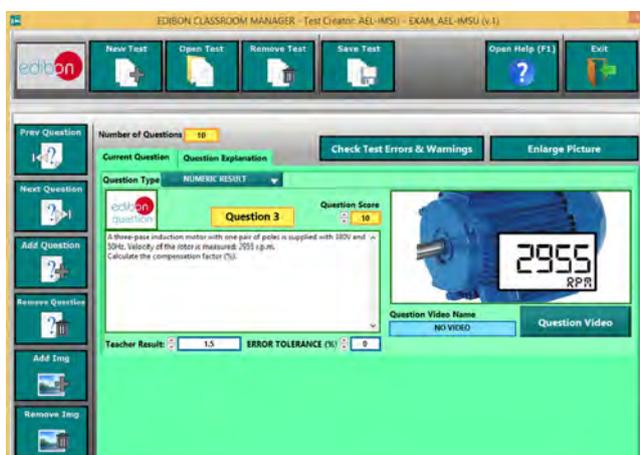
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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

