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 ↳ PRODUCTS  
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### INTRODUCTION

KNX security control devices make-up an important part of any complete security solution by providing fire, smoke and flooding detectors, control access devices, barrier sensors, video cameras, etc. Security systems can utilize wired or sometimes supervised wireless technology to connect field devices or detectors to the main alarm control panel. Field devices might include: keypads, motion detectors, perimeter beams, glass break detectors, balanced magnetic switches, water detectors, presence detection, gas leak detection and more.



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 KNX/EIB Security Control Application, "AEL-KNX3", has been designed by Edibon to show the users the most important KNX elements used in security alarm control systems with KNX technology.

The purpose of the AEL-KNX3 is to give the students a complete theoretical-practical training in the installations and programming of the most important KNX elements focused in security alarm control devices, characteristic of sensors, actuators, etc.

To take a maximum experience with the KNX/EIB Security Control Application is very recommendable to acquire the rest of the KNX offered by Edibon: AEL-KNX1, AEL-KNX2, AEL-KNX4 and AEL-KNX5. The combination of all these applications allows the student to design a complete intelligent bus system implemented by a KNX System.

In addition, this application requires the ETS latest generation KNX software to program different scenes, import of KNX projects, setting of sensors and actuators, etc.

The AEL-KNX3 includes the following modules:

- N-KNX34. KNX/EIB USB Programming Interface Module.
- N-KNX18. KNX/EIB Power Supply Module.
- N-KNX5. KNX/EIB Binary Output Module.
- N-KNX4. KNX/EIB Binary Input Module.

Additional and recommended modules:

- N-KNX12. KNX/EIB Fire/Smoke Module.
- N-KNX13. KNX/EIB Flooding Sensor Module.
- N-KNX3. KNX/EIB Barrier Sensor Module.
- N-KNX17. KNX/EIB Movement Sensor Module.
- N-KNX26. KNX/EIB Siren Module.
- N-KNX6. KNX/EIB Bolt Switch Module.
- N-KNX7. KNX/EIB Broken Glass Module.
- N-KNX33. KNX/EIB Window/Door Contact Module.
- N-KNX19. KNX/EIB Proximity Sensor Module.
- N-KNX15. KNX/EIB Magnetic Card Reader Module.
- N-KNX11. KNX/EIB Fingerprint Reader Module.
- N-KNX30. KNX/EIB Touch Panel Module.
- N-KNX35. KNX/EIB Infrared Transmitter/Receiver Module.
- N-KNX25. KNX/EIB Single Line Extending Bus Module.
- N-KNX2. KNX/EIB Additional Power Supply Module.

Required programming software:

- ETS. KNX Engineering Tool Software.

Additional applications:

- AEL-KNX1. KNX/EIB Shutter Control Application.
- AEL-KNX2. KNX/EIB Heating Control Application.
- AEL-KNX4. KNX/EIB Lighting Control Application.
- AEL-KNX5. KNX/EIB Energy Management Application.
- AEL-BCS. Building Automation and Control Networks BacNet Application.
- AEL-DALI. DALI Installations Application.

Expansion learning software:

In addition, Edibon provides expansion learning software (AEL-KNX3/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-KNX3 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.

Configuration table:

REF	KNX MODULES	AEL-KNX1 KNX/EIB Shutter Control Application	AEL-KNX2 KNX/EIB Heating Control Application	AEL-KNX3 KNX/EIB Security Control Application	AEL-KNX4 KNX/EIB Lighting Control Application	AEL-KNX5 KNX/EIB Energy Management Application
N-KNX1	KNX/EIB Heating Actuator Module		X			
N-KNX2	KNX/EIB Additional Power Supply Module	O	O	O	O	O
N-KNX3	KNX/EIB Barrier Sensor Module			O		
N-KNX4	KNX/EIB Binary Input Module			X		O
N-KNX5	KNX/EIB Binary Output Module			X		O
N-KNX6	KNX/EIB Bolt Switch Module			O		
N-KNX7	KNX/EIB Broken Glass Module			O		
N-KNX8	KNX/EIB Dimming Actuator Module				X	X
N-KNX9	KNX/EIB Electronic Control Module					X
N-KNX10	KNX/EIB Energy Meter Module				O	X
N-KNX11	KNX/EIB Fingerprint Reader Module			O		
N-KNX12	KNX/EIB Fire/Smoke Sensor Module			O		
N-KNX13	KNX/EIB Flooding Sensor Module			O		
N-KNX14	KNX/EIB Light Sensor Module	X			X	O
N-KNX15	KNX/EIB Magnetic Card Reader Module			O		
N-KNX16	KNX/EIB Manual Switches Module				X	
N-KNX17	KNX/EIB Movement Sensor Module		O	O	O	O
N-KNX18	KNX/EIB Power Supply Module	X	X	X	X	X
N-KNX19	KNX/EIB Proximity Sensor Module			O		
N-KNX20	KNX/EIB Push-Button Module	X				
N-KNX21	KNX/EIB Room Controller Module	O				X
N-KNX22	KNX/EIB Scene Controller Module				O	
N-KNX23	KNX/EIB Shutter Motor Module	O				
N-KNX24	KNX/EIB Shutter/Blind Actuator Module	X				
N-KNX25	KNX/EIB Single Line Extending Bus Module	O	O	O	O	O
N-KNX26	KNX/EIB Siren Module			O		
N-KNX27	KNX/EIB Staircase Sensor Module				O	
N-KNX28	KNX/EIB Switch Actuator Module				X	O
N-KNX29	KNX/EIB Temperature Sensor Module		X			O
N-KNX30	KNX/EIB Touch Panel Module	O	O	O	O	O
N-KNX31	KNX/EIB Valve Actuator Module		O			
N-KNX32	KNX/EIB Weather Station Module	O	O			
N-KNX33	KNX/EIB Window/Door Contact Module			O		
N-KNX34	KNX/EIB USB Programming Interface Module	X	X	X	X	X
N-KNX35	KNX/EIB Infrared Transmitter/Receiver Module			O		
N-LAM08	2 Lamps-holders + Incandescent Lamps 40 W				X	O
N-LAM32	1 Led Lamp				X	O
ETS	KNX Engineering Tool Software	X	X	X	X	X

**X = minimum recommended modules**

**O = optional and additional modules**

## SPECIFICATIONS

The application includes the following modules:

- **N-KNX34. KNX/EIB USB Programming Interface Module.**  
Power supply: KNX line, 21...30 VDC.  
Current consumption (max.): < 5 mA.  
USB connection: USB2.0 connector.
- **N-KNX18. KNX/EIB Power Supply Module.**  
Power supply: 230 VAC.  
Maximum load: 640 mA.  
Output voltage: 24 VDC.
- **N-KNX5. KNX/EIB Binary Output Module.**  
Nominal voltage: 230 VAC.  
Frequency: 50 Hz.  
KNX bus voltage: 24 VDC.  
Mains inputs/outputs: 4 mm safety sockets.  
Bus inputs/outputs: 2 mm safety sockets.
- **N-KNX4. KNX/EIB Binary Input Module.**  
Nominal voltage: 230 VAC.  
Frequency: 50 Hz.  
KNX bus voltage: 24 VDC.  
Mains inputs/outputs: 4 mm safety sockets.  
Bus inputs/outputs: 2 mm safety sockets.

Additional and recommended modules:

- **N-KNX12. KNX/EIB Fire/Smoke Module.**  
KNX bus voltage: 24 VDC.  
Bus inputs/outputs: 2 mm safety sockets.  
Current:  
Standby: 85 µA (approx.)  
Alarm: 100 mA (approx.)  
Operating temperature: - 10 °/+70 °C.
- **N-KNX13. KNX/EIB Flooding Sensor Module.**  
Nominal voltage: KNX bus voltage.  
KNX bus voltage: 24 VDC.  
Operating temperature: - 10 to +50 °C.
- **N-KNX3. KNX/EIB Barrier Sensor Module.**  
Nominal voltage: 230 VAC.  
Frequency: 50 Hz.  
KNX bus voltage: 24 VDC.  
Mains inputs/outputs: 4 mm safety sockets.  
Bus inputs/outputs: 2 mm safety sockets.
- **N-KNX17. KNX/EIB Movement Sensor Module.**  
Movement sensor for bus system KNX.  
Max. Transmission range frontally 7m.  
Number of channels 1.
- **N-KNX26. KNX/EIB Siren Module.**  
KNX bus voltage: 24 VDC.  
Bus inputs/outputs: 2 mm safety sockets.  
Working temperature: -5°C to +45°C.  
Current: 200 mA.  
Acoustic warning.
- **N-KNX6. KNX/EIB Bolt Switch Module.**  
KNX bus voltage: 24 VDC.  
Bus inputs/outputs: 2mm safety sockets.  
Working temperature: -20°C to +60°C.  
Switching current: 300 mA (approx.)

- **N-KNX7. KNX/EIB Broken Glass Module.**  
 KNX bus voltage: 24 VDC.  
 Bus inputs/outputs: 2mm safety sockets.
- **N-KNX33. KNX/EIB Window/Door Contact Module.**  
 KNX bus voltage: 24 VDC.  
 Bus inputs/outputs: 2 mm safety sockets.
- **N-KNX19. KNX/EIB Proximity Sensor Module.**  
 KNX bus voltage: 24 VDC.  
 Bus inputs/outputs: 2 mm safety sockets.  
 Working temperature: -5 °C to +45 °C.
- **N-KNX15. KNX/EIB Magnetic Card Reader Module.**  
 KNX bus voltage: 24 VDC.  
 Bus inputs/outputs: 2 mm safety sockets.  
 Card operating speed: 10 cm/s to 120 cm/s.  
 Working temperature: -10°C to +50°C.  
 Working humidity: 20% - 90% RH.
- **N-KNX11. KNX/EIB Fingerprint Reader Module.**  
 KNX bus voltage: 24 VDC.  
 Bus inputs/outputs: 2 mm safety sockets.  
 Working temperature: -20 °C to +50 °C.  
 Working humidity: 30% - 85% RH.
- **N-KNX30. KNX/EIB Touch Panel Module.**  
 Nominal voltage: 230 VAC.  
 Frequency: 50 Hz.  
 KNX bus voltage: 24 VDC.  
 Mains inputs/outputs: 4 mm safety sockets.  
 Bus inputs/outputs: 2 mm safety sockets.
- **N-KNX35. KNX/EIB Infrared Transmitter/Receiver Module.**  
 The IR remote is powered by two batteries of type Alkaline (LR03/AAA; 1,5V).  
 Normal functions:  
 Switching.  
 Switching and Dimming.  
 Control of blinds.
- **N-KNX25. KNX/EIB Single Line Extending Bus Module.**  
 Nominal voltage: 230 VAC.  
 Frequency: 50 Hz.  
 KNX bus voltage: 24 VDC.  
 Mains inputs/outputs: 4 mm safety sockets.  
 Bus inputs/outputs: 2 mm safety sockets.  
 Interconnection with other KNX/EIB systems.
- **N-KNX2. KNX/EIB Additional Power Supply Module.**  
 KNX bus voltage: 28 VDC.  
 Bus inputs/outputs: 2 mm safety sockets.

• **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.- Study of the fundamental of a KNX/EIB installation BUS.
  - 2.- Programming of on-off smart switches to demonstrate KNX/EIB switching operations.
  - 3.- Programming of switching security system control.
  - 4.- Study of preparation and installation methods of a KNX/EIB project.
  - 5.- Utilization of conventional switches in an EIB project.
  - 6.- Programming the 3 way switching equivalent circuit.
  - 7.- Make complex logics with binary inputs and outputs.
  - 8.- Make a wide security network with several units with binary inputs and outputs.
- Some practical possibilities with additional and recommended modules:
- 9.- Programming the touch panel according to different scenes.
  - 10.- Extending a bus system through a single-line topology.
  - 11.- Programming of several alarms to protect the system.
  - 12.- Programming of fire sensor for alert fire in the room.
  - 13.- Programming of smoke detector for a complete protection against fire.
  - 14.- Programming of flooding protection.
  - 15.- Study of the operation of an infrared barrier security.
  - 16.- Study of protection against intruders with a movement sensor.
  - 17.- Verify the state of a room with the touch panel.
  - 18.- Programming of the siren alarm to inform of an event.
  - 19.- Programming of the complete entrance protection with door and bolt sensor.
  - 20.- Notification of a broken glass.
  - 21.- Checking the window state.
  - 22.- Programming of proximity sensor for distance protection.
  - 23.- Use of magnetic card for control access.
  - 24.- Programming of the magnetic reader for card recognition.
  - 25.- Programming of the fingerprint recognition.
  - 26.- Centralized control of the main configurations in the touch panel.
  - 27.- Extending a bus system through a single-line topology.
  - 28.- Manual control over the main actuators.

### REQUIRED SERVICES

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

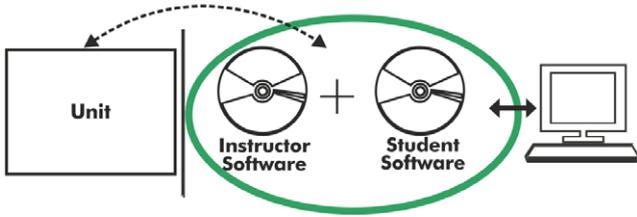
### DIMENSIONS AND WEIGHTS

#### AEL-KNX3:

- 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-KNX3/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.

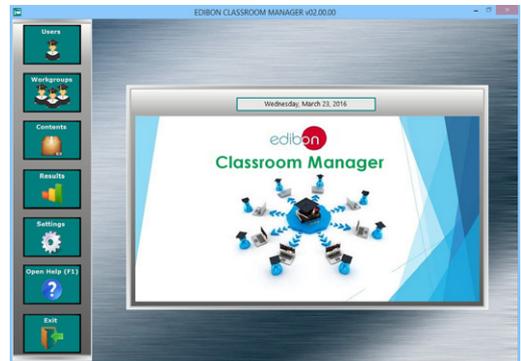
### Instructor Software

- 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:

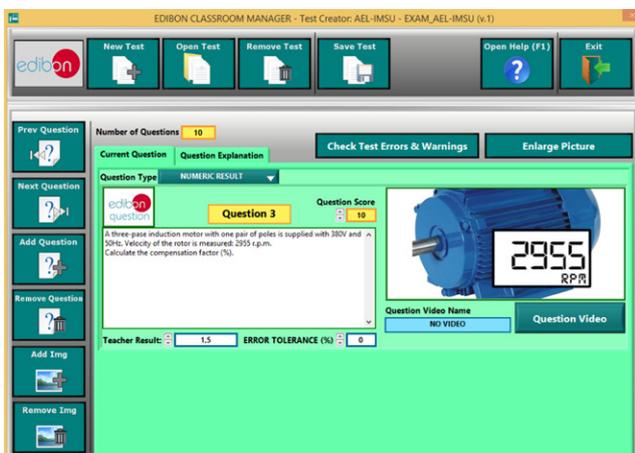
- User Data Base Management.
- Administration and assignment of Workgroup, Task and Training sessions.
- Creation and Integration of Practical Exercises and Multimedia Resources.
- Custom Design of Evaluation Methods.
- Creation and assignment of Formulas & Equations.
- Equation System Solver Engine.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



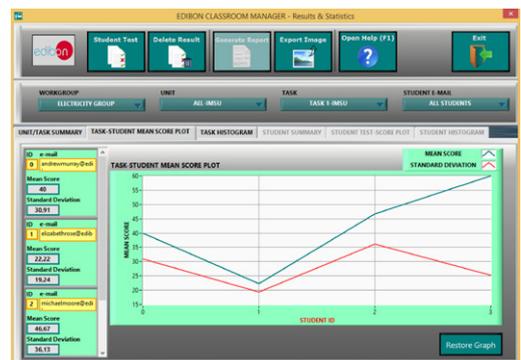
ECM-SOF. EDIBON Classroom Manager (Instructor Software) Application Main Screen



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

