Engineering and Technical Teaching Equipment

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100%, own Design and own Manufacturing

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EDIBON can offer the design of teaching and research units, in accordance with the customer requirements.

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

European Union Certificate (total safety)

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

Certificate and Worlddidac Member

EDIBON. C/ Del Agua, 14. Polígono Industrial San José de Valderas. 28918 LEGANÉS, (Madrid). SPAIN. Phone: +34 916799363. Fax: +34 916198647. edibon@edibon.com

Teaching Techniques Used fully designed by Edibon

1.- SCADA Teaching Techniques (SCADA = Supervision, Control And Data Acquisition):

Main SCADA's Teaching Techniques and Expansions

SCADA=	EDIBON SCADA System: Computer Control (Multicontrol + Real Time Control + Open Control) + Data Acquisition + Data Management
Mini ESN=	EDIBON Mini-Scada-Net System It enables MULTIPLE STUDENTS in a network to simultaneously operate and work with MANY UNITS, by 30 STUDENTS, doing Real Time Computer Control
ESN=	EDIBON Scada-Net System It enables MULTIPLE STUDENTS, in a network, to simultaneously operate and work with MANY UNITS, by 30 STUDENTS doing Real Time Computer Control
ECL=	EDIBON Cloud Learning Any unit with SCADA or the Scada-Net System in a city can be controlled through Internet, at any distance, from any other city
EWB=	Electronic White Board
ELK=	LabVIEW Kit
EUK=	USB Kit

Industrial SCADA Expansions

PLC=	Industrial Control using PLC (Unit + Software + Interface + Computer + PLC + PLC Process Software) Electronic Interface, technically, allways required

Other SCADA's Teaching Techniques Systems

3D=	EDIBON Three Dimensions SCADA System Real Time Control and SCADA, obtaining results in Three Dimensions

2.- AIDED Software:

ICAI=	Interactive Computer Aided Instruction Software System (for "ANY" EDIBON unit)
FSS=	Faults Simulation System (for any unit with SCADA)

3.- Data Acquisition for Basic Units:

EDAS/VIS=	EDIBON Data Acquisition System/Virtual Instrumentation System (for Basic Electronics and Basic Communications)
AEL-MUAD/VIS=	Electric Power Data Acquisition System (for Electricity)
BDAS=	Basic Data Acquisition System and Sensors (for Basic Fluid Mechanics)

4.- Other Teaching Techniques:

PHOTOELASTICITY =	For Strength of Materials
RTC=	EDIBON Real Time Control System with SCADA Electronic Real Time Control for Advanced Electronics
HYBRID=	EDIBON Hybrid System (Energy) It uses Real Units combined with Software, using proper mathematical models (for Energy)

* All these Teaching Techniques are EDIBON PATENT

Products List
Units

100%, own Design and own Manufacturing

10.- PHYSICS
- 11.- Physics. 3D PHYSICS (Three Dimensions)

20.- ELECTRONICS
- 21.- Electronics. BASIC CONCEPTS
  - 21.1.- Service Units
  - 21.2.- Basic Electronic Concepts
  - 21.3.- Digital Electronics
  - 21.4.- Basic Electricity Concepts
  - 21.5.- Electronic Applications
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- 25.- Electronics. DIGITAL ELECTRONICS
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- 33.- Communications. TELEPHONY
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40.- ELECTRICITY
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  - 41.2.- AEL-1.2. Industrial Electrical Installations
  - 41.3.- AEL-1.3. Professional Wiring Practices in Installations
- 42.- Electricity. HOME AUTOMATION SYSTEMS
  - 42.1.- AEL-2.1. Wired Systems
  - 42.2.- AEL-2.2. Wireless Systems
- 43.- Electricity. ELECTRICAL MACHINES
  - 43.1.- Electrical Machines Modular Complete Applications
  - 43.2.- Motors (only motors)
  - 43.3.- Ancient units. Electrical Machines Individual Units, to be configured by the end customer (CONFIGURABLE)
- 44.- Electricity. ELECTROMECHANICAL CONSTRUCTIONS
  - 44.1.- AEL-4.1. Transformers Construction
  - 44.2.- AEL-4.2. Electrical Motors Construction
- 45.- Electricity. POWER SYSTEMS AND SMART GRID TECHNOLOGY
  - 45.1.- AEL-5.1. Generation Trainers
  - 45.2.- AEL-5.2. Distribution and Transmission Trainers
  - 45.3.- AEL-5.3. Loads Trainers
  - 45.4.- AEL-5.4. Protection Relays Trainers
  - 45.5.- AEL-5.5. Cybersecurity Trainers
  - 45.6.- AEL-5.6. Available "Smart Grid Power Systems "
  - 45.7.- AEL-5.7. Individual Systems to configurate any Smart Grid
- 46.- Electricity. ALL ELECTRICITY MODULES AVAILABLE

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  - 52.2.- Mechanical Generators
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  - 52.4.- Micro Grid Series
- 53.- Energy. GENERATION SYSTEMS
- 54.- Energy. PROTECTION RELAYS UNITS
- 55.- Energy. CYBERSECURITY
- 56.- Energy. HIGH VOLTAGE
- 57.- Energy. RENEWABLE ENERGIES
  - 57.1.- Photovoltaic
  - 57.2.- Solar Energy Collector
  - 57.3.- Solar Thermal
  - 57.4.- Wind
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  - 57.6.- Biofuells
  - 57.7.- Sea
  - 57.8.- Geothermal
- 58.- Energy. SAVING ENERGY
  - 58.1.- Energy Utilitation
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60.- MECHATRONICS & COMPUMECHATRONICS
- 61.- Mechatronics. BASIC PLC's CONCEPTS
  - 61.1.- AE-PLCB. Basic PLC Trainers Modules
  - 61.2.- EMULATION modules working with all AE-PLCB's
  - 61.3.- SMALL SCALE Real Applications working with all AE-PLCB's
  - 61.4.- EDIBON UNITS USING SCADA Applications (SCADA + PLC)
  - 61.5.- All PLC's Brands available
- 62.- Mechatronics. ADVANCED PLC's CONCEPTS
  - 62.1.- AE-PLCA. Advanced PLC Trainers Modules
  - 62.2.- EMULATION modules working with all AE-PLCA's
  - 62.3.- AE-PLCA INDUSTRIAL PROCESS Applications
  - 62.4.- AE-PLCA ENERGY Applications
  - 62.5.- AE-PLCA MOTION Applications
  - 62.6.- EDIBON UNITS USING SCADA Applications. Industrial Configurations (SCADA + PLC)
  - 62.7.- All PLC's Brands available
- 63.- Void
- 64.- Mechatronics. COMPUMECHATRONICS
  - 64.1.- Compumechatronics / SCADA
  - 64.2.- Compumechatronics / Real Industrial Configurations
- 65.- Mechatronics. CONTROL
  - 65.1.- Regulation and Control Applications
  - 65.2.- Control Applications
  - 65.3.- Process Control Applications
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70.- MECHANICS
- 71.- Mechanics. MECHANICAL ENGINEERING
  - 71.1.- Basic Concepts
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  - 71.3.- Mechanisms
  - 71.4.- Dynamics
  - 71.5.- Vibrations
  - 71.6.- Friction
  - 71.7.- Tribology
  - 71.8.- Oscillations
- 72.- Mechanics. AUTOMOTIVE ENGINEERING
  - 72.1.- Brakes and Clutches
  - 72.2.- Gears and Differentials
  - 72.3.- Transmissions
  - 72.4.- Engines Test Benches
  - 72.5.- Miscellaneous
- 73.- Void
- 74.- Mechanics. CIM
- 75.- Mechanics. HYDROPNEUMATICS AND ROBOTICS
  - 75.1.- Oleohydraulics
  - 75.2.- Pneumatic

75.3.- Hydropneumatic
75.4.- Robotic
76.- Void
77.- Mechanics. STRENGTH OF MATERIALS
77.1.- Photoelasticity (Traction, Flexion, Torsion, Bending, etc)
77.2.- Traction. Flexion. Bending. Torsion
77.3.- Fatigue. Hardness. Impact
77.4.- Structures
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78.- Mechanics. MATERIALS
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78.2.- Building
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80.- FLUID MECHANICS
81.- Fluid Mechanics. BASIC CONCEPTS
81.1.- Service Units
81.2.- Fluid Concepts
81.3.- General Fluid Applications
81.4.- Hydraulic Laws
81.5.- Hydraulic Demonstration
81.6.- Pipes
81.7.- Hydraulic Machines: Pumps
81.8.- Hydraulic Machines: Turbines
82.- Fluid Mechanics. DEMONSTRATION
83.- Fluid Mechanics. PIPES
84.- Fluid Mechanics. FLOW, PRESSURE and METERS
84.1.- Flow
84.2.- Pressure
84.3.- Viscosity
85.- Fluid Mechanics. HYDROLOGY
86.- Fluid Mechanics. FLOW CHANNELS
87.- Fluid Mechanics. HYDRAULIC MACHINES (Pumps. Turbines. Fans. Compressors)
87.1.- Pumps
87.2.- Turbines
87.3.- Fans
87.4.- Compressors
88.- Fluid Mechanics. AERODYNAMICS
90.- THERMODYNAMICS & THERMOTECHNICS
91.- Thermodynamics. HVAC (Refrigeration. Air Conditioning. Heat Pumps. Cooling Towers. Heating.)
91.1.- Refrigeration
91.2.- Air Conditioning
91.3.- Heat Pumps
91.4.- Cooling Towers
91.5.- Heating
92.- Thermodynamics. HEAT EXCHANGERS
92.1.- Modular Basic options
92.2.- Compact options
93.- Thermodynamics. HEAT TRANSFER
93.1.- Modular Basic options
93.2.- Compact options
94.- Thermodynamics. COMBUSTION. NOZZLES. STEAM
94.1.- Combustion
94.2.- Nozzles
94.3.- Steam
95.- Thermodynamics. ENGINES TEST BENCHES. GENERATORS. CALORIMETERS.
95.1.- Engines Test Benches
95.2.- Hybrid Test Benches
95.3.- Generators
95.4.- Calorimeters
96.- Thermodynamics. THERMAL TURBINES
97.- Thermodynamics. OIL EXTRACTION
98.- Thermodynamic. SANITARY
100.- PROCESS CONTROL
101.- Process Control. FUNDAMENTALS
101.1.- General Concepts
101.2.- Sensors and Loops
101.3.- Applications
101.4.- Controllers and Field Bus
102.- Process Control. INDUSTRIAL PROCESS CONTROL
110.- CHEMICAL ENGINEERING
111.- Chemical Engineering. BASIC UNIT OPERATIONS
111.1.- Distillation
111.2.- Absorption
111.3.- Evaporation
111.4.- Extraction
112.- Chemical Engineering. GENERAL UNIT OPERATIONS
112.1.- Mass Transfer
112.2.- Adsorption
112.3.- Physical Processes
113.- Chemical Engineering. CHEMICAL REACTORS
113.1.- Modular and Big Reactors
113.2.- Modular and Small Reactors
113.3.- Compact Reactors
114.- Chemical Engineering. CHEMICAL PROCESS
114.1.- Physical-Chemical Process
114.2.- Filtering
114.3.- Solvent
114.4.- Heat Transfer
114.5.- Food Technology
114.6.- Environment
115.- Chemical Engineering. MASS TRANSFER
120.- FOOD & WATER TECHNOLOGIES
121.- Food Technology. UNIT OPERATIONS
121.1.- Basic Units Operations
121.2.- General Pilot Plants
122.- Food Technology. MILK PROCESS
123.- Food Technology. OIL PROCESS
124.- Food Technology. PILOT PLANTS
130.- ENVIRONMENT
131.- Environment. WATER HANDLING
131.1.- Hydrology
131.2.- Moisture
131.3.- Sedimentation
132.- Environment. WATER TREATMENT
132.1.- Digesters
132.2.- Flocculation and Aeration
132.3.- Water Treatment Unit Operations
132.4.- Water Treatment Plants
132.5.- Dirty Water
133.- Environment. POLLUTION
133.1.- Ground Pollution
133.2.- Air Pollution
140.- BIOMEDICAL ENGINEERING
141.- Biomedical. BIOMEDICAL APPLICATION
142.- Biomedical. BIOMEDICAL ENGINEERING CONCEPTS
143.- Biomedical. BIOMECHANICS

Products List
Units

100%, own Design and own Manufacturing

144.- Biomedical. INDUSTRIAL BIOMEDICAL WITH SCADA
180.- GENERAL APPLICATIONS SYSTEM
181.- EDIBON Scada-Net Systems
182.- EDIBON Cloud Learning
183.- LabVIEW Kits
184.- USB Kits
190.- PILOT PLANTS
110.- CHEMICAL ENGINEERING
114.3.- Solvent
120.- FOOD & WATER TECHNOLOGIES
121.1.- Basic Units Operations
121.2.- General Pilot Plants
123.- Food Technology. OIL PROCESS
124.- Food Technology. PILOT PLANTS
200.- SOFTWARE PACKAGES
201.- Software Packages
202.- Special Software Packages used with:
202.1.- Strength of Materials. PHOTOELASTICITY (Traction, Flexion, Torsion, Bending, etc)
202.2.- Energy. SMART GRID AND POWER SYSTEMS

10 PHYSICS

11 Physics. 3D PHYSICS (Three Dimensions)

- EFAC — Computer Controlled Three Dimensions (3D) Physics System:

Base Structure and Robot

. FUB — Base Structure and Robot. (Common for all applications type "F").

Sets (sensor + elements + control software) required for each application

. FCE — Set for Electrical Fields application.
. FCM — Set for Magnetic Fields application.
. FM — Set for Mechanics Study application.
. FAC — Set for Acoustics Study application.
. FOP — Set for Optics Study application.
. FTT — Set for Thermodynamics Study application.

EDIBON Cloud Learning

- ECL-PHYS — EDIBON Cloud Learning for Physics.

Software

- ICAI-PHYS — Interactive Computer Aided Instruction Software System for Physics.
- ELK-PHYS — EDIBON LabVIEW KIT for Physics.

19 Additional options related with Physics

19.6 Physics. EXPANSIONS

3D ESN ECL EWB
ELK ICAI

19.7 Other units related with Physics . See sections:

- 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 110 - 120 - 130 - 140 - 180 - 201

20 ELECTRONICS

21 Electronics. BASIC CONCEPTS

- LIEBA — Basic Electronics and Electricity Laboratory:

21.1 Service Units

Power supplies

. FACO — Power Supply.
. EBC100 — Base Unit, with built-in power supply.

21.2 Basic Electronic Concepts

Modules

. M3 — Semiconductors I.
. M4 — Semiconductors II.
. M6 — Oscillators.
. M7 — Operational Amplifiers.
. M8 — Filters.
. M9 — Power Electronics.
. M60 — Analog/Digital Converters.
. M61 — Digital/Analog Converters.
. M99 — Expansion Unit (modules included: analog multiplexer, analog multiplier, function generator, AM modulator, AM demodulator).

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 — EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO — Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO — Faults Simulation System for Electronics.
- ELK-ELECTRO — EDIBON LabVIEW KIT for Electronics.
. M99-6 — Motors, Generators and Controls Unit.

21.3 Digital Electronics

Modules

. M10 — Digital Systems & Converters.
. M11 — Digital Electronic Fundamentals.
. M12 — Basic Combinational Circuits.
. M13 — Basic Sequential Circuits.
. M14 — Optoelectronics.
. M41 — Resistance Transducers.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 — EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO — Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO — Faults Simulation System for Electronics.
- ELK-ELECTRO — EDIBON LabVIEW KIT for Electronics.

21.4 Basic Electricity Concepts

Modules

. M5 — Power Supplies.
. M1 — Direct Current (D.C.) Circuits.
. M2 — Alternating Current (A.C.) Circuits.
. M16 — Electric Networks.
. M17 — Electromagnetism.
. M18 — Three-phase Circuits.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 — EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO — Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO — Faults Simulation System for Electronics.
- ELK-ELECTRO — EDIBON LabVIEW KIT for Electronics.

21.5 Electronic Applications

Modules

. M49 — Applications of Temperature and Pressure.
. M44 — Applications of Light.
. M45 — Linear Position and Force.
. M46 — Environmental Measurements.
. M15 — Development Module.
. M48 — Sound Measurements.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 — EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO — Interactive Computer Aided Instruction Software System for Electronics.

- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

21.6 Control

Modules

. RYC/B Basic Teaching Unit for the Study of Regulation and Control.
. M47 Rotational Speed & Position Control.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

22 Electronics. KITS

- M-KITS Basic Electronics and Electricity Assembly Kits:

22.1 Service Units

Required power supply by any Kit

. FACO Power Supply.
. M15 Development Module.

22.2 Basic Electronic Concepts

Assembly Kits

. M3/KIT Semiconductors I. Kit.
. M4/KIT Semiconductors II. Kit.
. M6/KIT Oscillators Kit.
. M7/KIT Operational Amplifiers Kit.
. M8/KIT Filters Kit.
. M9/KIT Power Electronics Kit.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

22.3 Digital Electronics

Assembly Kits

. M10/KIT Digital Systems and Converters Kit.
. M11/KIT Digital Electronic Fundamentals Kit.
. M12/KIT Basic Combinational Circuits Kit.
. M13/KIT Basic Sequential Circuits Kit.
. M14/KIT Optoelectronics Kit.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

22.4 Basic Electricity Concepts

Assembly Kits

. M5/KIT Power Supplies Kit.
. M1/KIT Direct Current (D.C.) Circuits Kit.
. M2/KIT Alternating Current (A.C.) Circuits Kit.
. M16/KIT Electric Networks Kit.

Data Acquisition and Virtual Instrumentation

- EDAS/VIS-0.25 EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

Software

- ICAI-ELECTRO Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

23 Electronics. TRANSDUCERS AND SENSORS

- SAIT Transducers and Instrumentation Trainer.
- BS Modular System for the Study of Sensors:

Base Units

. BSPC Computer Controlled Basic Unit.
. BSUB Basic Unit.

Test Modules

Application Modules

. BS1 Vibrations and/or Deformations Test Module.
. BS5 Ovens Test Module.
. BS7 Tachometer Test Module.
. BS9 Pneumatic Test Module.

Parameters Modules

. BS2 Temperature Test Module.
. BS3 Pressure Test Module.
. BS4 Flow Test Module.
. BS6 Liquid level Test Module.
. BS8 Proximity Test Module.
. BS10 Light Test Module.

Complete Applications

- SPC Weighing System, with Computer Data Acquisition.
- SCSP Pressure Sensors Calibration System.

Software

- ICAI-ELECTRO Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO Faults Simulation System for Electronics.
- ELK-ELECTRO EDIBON LabVIEW KIT for Electronics.

24 Electronics. CONTROL ELECTRONICS

- RYC Computer Controlled Teaching Unit for the Study of Regulation and Control.

Available application modules

Application Modules

- RYC-BB Ball and Beam Module.
- RYC-SM DC Servo Motor Module.
- RYC-TAR Air Flow Temperature Control Module.
- RYC-PI Inverted Pendulum Control Module.
- RYC-CLM Magnetic Levitation Control Module.
- RYC-BP Ball and Plate Control Module.
- RYC/B Basic Teaching Unit for the Study of Regulation and Control.

Parameters Modules

- RYC-TAG Water Flow Temperature Control Module.
- RYC-T Temperature Control Module.

- RYC-P	Pressure Control Module.
- RYC-N	Level Control Module.
- RYC-C	Flow Rate Control Module.
- RYC-I	Luminosity Control Module.
- RYC-pH	pH Control Module.
- RYC-CP	Position Control Module.
	Complete Applications
- CADDA	Computer Controlled Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters.
	Software
- ICAI-ELECTRO	Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO	Faults Simulation System for Electronics.
- ELK-ELECTRO	EDIBON LabVIEW KIT for Electronics.

25 Electronics. DIGITAL ELECTRONICS

- TDS	Computer Controlled Teaching Unit for the Study of Digital Signal Processing.
	Software
- ICAI-ELECTRO	Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO	Faults Simulation System for Electronics.
- ELK-ELECTRO	EDIBON LabVIEW KIT for Electronics.

26 Electronics. INDUSTRIAL ELECTRONICS

	Power supplies
- TECNEL	Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTS). (Converters: DC/AC+AC/DC+DC/DC+AC/AC).
- TECNEL/B	Computer Controlled Basic Teaching Unit for the Study of Power Electronics (no IGBTS). (Converters: AC/DC+AC/AC).
	Servosystems
- SERIN/CA	Computer Controlled Advanced Industrial Servosystems Trainer (for AC Motors).
- SERIN/CC	Computer Controlled Advanced Industrial Servosystem Trainer (for DC Motors).
- SERIN/CCB	Servosystems Basic Trainer (for DC Motors).
- SERIN/CAB	Servosystems Basic Trainer (for AC Motors).
- SERIN/CACC	Computer Controlled Industrial Servosystem Trainer (for AC and DC Motors).
	Advanced Applications
- AEL-WPP	Wind Power Plants with Double Feed Induction Generator.
- AEL-WPT	Wind Power Trainer with Permanent Magnets Synchronous Generator.
- AEL-WPPI	Wind Power Plants with Induction Generator.
	Software
- ICAI-ELECTRO	Interactive Computer Aided Instruction Software System for Electronics.
- FSS-ELECTRO	Faults Simulation System for Electronics.
- ELK-ELECTRO	EDIBON LabVIEW KIT for Electronics.

29 Additional options related with Electronics

29.6 Electronics. EXPANSIONS

ESN	ECL	EWB	ELK
ICAI	FSS	EDAS/VIS	

29.7 Other units related with Electronics . See sections:

- 11 - 31 - 32 - 40 - 50 - 60 - 100 - 180 - 201

30 COMMUNICATIONS

31 Communications. ANALOG COMMUNICATIONS

- LICOMBA	Communications Laboratory:
	Power supplies
. FACO	Power Supply.
. EBC100	Base Unit, with built-in power supply.
	Analog Communications Module
. ED-CAM	AM Communications.
. ED-CFM	FM Communications.
	Trainers
- EMDA/A	Analog Modulations Trainer.
	Data Acquisition and Virtual Instrumentation
- EDAS/VIS-1.25	EDIBON Data Acquisition System / Virtual Instrumentation System, (1.250.000 samples per second).
	Software
- ICAI-COMM	Interactive Computer Aided Instruction Software System for Communications.

32 Communications. DIGITAL COMMUNICATIONS

- LICOMBA	Communications Laboratory:
	Power supplies
. FACO	Power Supply.
. EBC100	Base Unit, with built-in power supply.
	Digital Communications Modules
. EDICOM1	Signal Sampling and Reconstruction.
. EDICOM2	Time Division Multiplexing (TDM). PAM Transmitter and Receiver.
. EDICOM3	MIC-TDM Transmission/Reception.
. EDICOM4	Delta Modulation and Demodulation.
. EDICOM5	Line Codes. Signal Modulation and Demodulation.
. EDICOM6	Optical Fibre Transmission and Reception.
	Trainers
- EMDA/D	Digital Modulations Trainer.
- EMDA/P	Pulse Modulations Trainer.
	Data Acquisition and Virtual Instrumentation
- EDAS/VIS-1.25	EDIBON Data Acquisition System / Virtual Instrumentation System, (1.250.000 samples per second).
	Software
- ICAI-COMM	Interactive Computer Aided Instruction Software System for Communications.

33 Communications. TELEPHONY

- CODITEL	Telephony Systems Trainer.

34 Communications. APPLIED COMMUNICATIONS

	Trainers
	Signals
- EGPS	GPS Trainer.
- ESA	Satellite Trainer.
- ERA	Radar Trainer.
	Transmission Systems
- ELT	Transmission Lines Trainer.
- ELAN	Lan Trainer.
	Anntenas
- EANC	Computer Controlled Antenna Trainer.
- EAN	Antenna Trainer.

Microwaves

- EMI — Microwave Trainer.
- EMIC — Computerized Microwave Trainer.

Phones

- EBL — Bluetooth Trainer.
- ETM — Cellular Mobile Trainer.

Software

- ICAI-COMM — Interactive Computer Aided Instruction Software System for Communications.

39 Additional options related with Communications

39.6 Communications. EXPANSIONS

ESN ECL EWB ICAI
EDAS/VIS

39.7 Other units related with Communications . See sections:

- 20 - 40 - 50 - 60 - 100 - 180 - 201

40 ELECTRICITY

41 Electricity. ELECTRICAL INSTALLATIONS

- AEL-1 — Electrical Installations Laboratory.

. AEL-1.1. — Home Electrical Installations.
. AEL-1.2. — Industrial Electrical Installations.
. AEL-1.3. — Professional Wiring Practices in Installations.

41.1 AEL-1.1. Home Electrical Installations

Workbenches

. AEL-WBR — Electrical Workbench (Rack).
. AEL-WBC — Electrical Workbench (Rail).

Modules

Lighting and Control

. AEL-AD13 — Audio Door Entry System.
. AEL-AD14 — Audio and Video Door Entry System.
. AEL-AD6A — Luminosity Control Station.
. AEL-AD6B — Basic Luminosity Control Station.
. AEL-AD24 — Position Switch.
. AEL-AD5 — Stair Lights Timing.
. AEL-AI13-E — Modular Trainer for Electrotecnics (Lighting).

Climatization

. AEL-AD9A — Heating Control Station.
. AEL-AD9B — Basic Heating Control Station.

Software

- ICAI-ELEC — Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC — Faults Simulation System for Electricity.

41.2 AEL-1.2. Industrial Electrical Installations

Workbenches

. AEL-WBR — Electrical Workbench (Rack).
. AEL-WBC — Electrical Workbench (Rail).

Modules

Industrial Control Engineering

. AEL-CM1 — Manual Control Operations.
. AEL-CM2 — Operations with Manual Commutators.
. AEL-CM3 — Automatic Control Operations II.
. AEL-CM4 — Automatic Control Operations with Contactors and Sensors IV.

Fault Simulators

. AEL-AD33 — Single-Phase Installations Faults Simulator.
. AEL-AD33T — Three-phase Installations Faults Simulator.

Relays Trainer

. AEL-AE5 — Relay Control Station.
. AEL-AE4 — Test Unit for Differential Automatic Switches.
. AEL-PRTS — Protective Relaying Training System.

Loads

. AEL-AI13-A — Modular Trainer for Electrotecnics (RLC Circuits).
. AEL-MED — Industrial Measurement Technology.

Software

- ICAI-ELEC — Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC — Faults Simulation System for Electricity.

41.3 AEL-1.3. Professional Wiring Practices in Installations

Workbenches

. AEL-WBR — Electrical Workbench (Rack).
. AEL-WBC — Electrical Workbench (Rail).

Modules

Cubicle and Panels Wiring Installations

. AEL-AEBI — Assembly Exercises in Building Installations.
. AEL-AEBM — Assembly Exercises on Building Mains Feeds and Meter Cabinets.
. AEL-AESI — Assembly Exercises for Signals Electrical Installations.
. AEL-AESU — Assembly Exercises on Switching Units.

Software

- ICAI-ELEC — Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC — Faults Simulation System for Electricity.

42 Electricity. HOME AUTOMATION SYSTEMS

- AEL-2 — Home Automation Systems Laboratory.

. AEL-2.1. — Wired Systems.
. AEL-2.2. — Wireless Systems.

42.1 AEL-2.1. Wired Systems

General Wired Home Automation Systems (Alarms)

. AEL-AD1A — Robbery Alarm Station.
. AEL-AD1B — Basic Robbery Alarm Station.
. AEL-AD3A — Fire Alarm Station.
. AEL-AD3B — Basic Fire Alarm Station.
. AEL-AD15A — Position Control Station.
. AEL-AD15B — Basic Position Control Station.
. AEL-AD25A — Control Station for Home Electric Services through the Telephone.
. AEL-AD22 — Flooding Control Station.
. AEL-AD30 — Gas Control Station.
. AEL-AD31 — Movement and Sound Detection and Control.
. AEL-AD40 — Remote Control Station Via Telephone.

KNX (EIB) Systems

. AEL-KNX1 — KNX (EIB) Lighting and Shutter Control System.
. AEL-KNX2 — KNX (EIB) Heating Control System.
. AEL-KNX3 — KNX (EIB) Robbery Alarm System.
. AEL-KNX4 — KNX (EIB) Fire Alarm System.
. AEL-KNX5 — KNX (EIB) Position Control Systems.

42.2 AEL-2.2. Wireless Systems

General Wireless Home Automation Systems

. AEL-AD28A	Integral Control Station of Home Electric Systems.
. AEL-AD28B	Basic Control Station of Home Electric Systems.
. AEL-AD28C	Elementary Control Station of Home Electric Systems.
. AEL-AD23	Wireless Basic Control Station (RF).

Software

- ICAI-ELEC	Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC	Faults Simulation System for Electricity.

43 Electricity. ELECTRICAL MACHINES

43.1 Electrical Machines Modular Complete Applications

- AEL-3	**Electrical Machines Laboratory.**
- AEL-3.1.	**Electrical Machines Trainers (with SCADA or Manual).**

Transformers Trainers

. AEL-SPTT	Single-Phase Transformer Trainer.
. AEL-TPTT	Three-Phase Transformer Trainer.
. AEL-AI13-D	Modular Trainer for Electrotecnics (Transformers).

Generators/Motors Trainers

A.C. Machines

General Machines Trainers

. AEL-EEEM	Energy Efficiency in Electrical Motors.
. AEL-EMSS	Electrical Machines Soft Starter.
. AEL-EMCF	Electrical Machines Control through Frequency Controller.
. AEL-AI13	Modular Trainer for Electrotecnics (RLC Circuits, Electrostatics, Motors, Transformers, Lighting).
. AEL-AI13-C	Modular Trainer for Electrotecnics (Motors).
. AEL-EMRP	Electrical Machines Relays Protection Trainer.
. AEL-SERIN/CA-1KW	Computer Controlled Advanced Industrial Servosystems Trainer - 1 kW (for AC Motors).
. AEL-MMRT	Motor Management Relays Trainer.
. AEL-AI12	Modular Application (AC Motors).
. AEL-ACLA	Applications of AC Linear Motor Operations.
. AEL-IMSU	General Applications of AC Induction Motors.
. AEL-PRTS	Protective Relaying Training System.

Synchronous Machines Trainers

. AEL-EEA	Alternators Study Unit.
. AEL-EGMG24	Motor-Generator Group.

Asynchronous Machines Trainers

. AEL-ACEMT	A.C. Electrical Motors Trainer.

Options to study:

More than 9 motors available (see catalog)

D.C. Machines

. AEL-DCEMT	D.C. Electrical Motors Trainer.

Options to study:

More than 9 motors available (see catalog)

Faults Trainers

. AEL-ESAM	Faults Simulation Trainer in Electrical Motors.
. AEL-ESAT	Faults Simulation Trainer in Transformers.
- AEL-3.2.	**Electrical Machines Applications.**

Generators/Motors Applications

A.C. Machines

Synchronous Machines

. AEL-EEA	Alternators Study Unit.
. AEL-EGMG24	Motor-Generator Group.

Asynchronous Machines

. AEL-ACEMA	A.C. Electrical Motors Application.

Options to study:

More than 5 motors available (see catalog)

D.C. Machines

. AEL-DCEMA	D.C. Electrical Motors Application.

Options to study:

More than 6 motors available (see catalog)

. AEL-STMA	Applications of Stepper Motors.
. AEL-DCBRA	Applications of DC Brushless Motors.

43.1.1 Control Data Acquisition and Software

- EM-SCADA	Control and Data Acquisition System Software for Electrical Machines.
- ICAI-ELEC	Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC	Faults Simulation System for Electricity.
- ELK-ELEC	EDIBON LabVIEW KIT for Electricity.
- MUAD	Electric Power Data Acquisition System.

43.2 Motors (only motors)

- EMT-E	Motors (Available several types of D.C. Motors and A.C. Motors).

D.C. Motors

- EMT1-E	D.C. Independent excitation motor-generator.
- EMT2-E	D.C. Series excitation motor-generator.
- EMT3-E	D.C. Shunt excitation motor-generator.
- EMT4-E	D.C. Compound excitation motor-generator.
- EMT5-E	D.C. Shunt-series compound excitation motor.
- EMT12-E	Universal motor (single-phase).
- EMT15-E	D.C. Permanent Magnet Motor.
- EMT18-E	D.C. Brushless motor.
- EMT19-E	Stepper motor.

A.C. Motors

- EMT6-E	A.C. Synchronous three-phase motor alternator.
- EMT6b-E	Permanent magnets synchronous three-phase generator (24 Vac).
- EMT7-E	Asychronous three-phase motor of squirrel cage.
- EMT7b-E	Asynchronous three-phase motor of squirrel cage (4 poles).
- EMT7c-E	Asynchronous three-phase motor of squirrel cage (8 poles).
- EMT8-E	Asynchronous three- phase motor with wound rotor.
- EMT9-E	Dahlander three-phase motor (two speeds).
- EMT10-E	Asynchronous three-phase motor of two independent speeds.
- EMT11-E	Asynchronous single-phase motor with starting capacitor.
- EMT12-E	Universal motor (single-phase).
- EMT14-E	Repulsion motor, single-phase with short-circuited brushes.
- EMT16-E	Asynchronous single-phase motor with starting and running capacitor.
- EMT17-E	Three-phase motor of squirrel cage with "Y" connection.
- EMT20-E	Asynchronous single-phase motor with split phase.
- EMT21-E	Three-phase Reluctance motor.
- EMT22-E	Single-phase shaded pole motor.

43.3 Ancient units. Electrical Machines Individual Units, to be configured by the end customer (CONFIGURABLE)

- LIMEL	Integrated Laboratory for Electrical Machines:
	1. Electrical Machines Units
. EME	Electrical Machines Unit (Advance option).
. EME/M	Electrical Machines Unit (Intermediate option).
. EME/B	Electrical Machines Unit (Basic option).
	2. Measurement Units
. EAL	Network Analyzer Unit (AC).
. EALD	Network Analyzer Unit, with Computer Data Acquisition.
. EALDG	Network Analyzer Unit, with Computer Data Acquisition+Oscilloscope Display.
. EAL/DC	Network Analizer Unit (DC).
. EAM-VA	Analog Measurement Unit (4 voltimeters & 2 ammeters).
. MUAD	Electric Power Data Acquisition System.
	3. Loads
. RCL3R	Resistive, Inductive and Capacitive Loads Module.
. IND	Inductance Module.
. REV	Variable Resistance Module.
. REV/T	Three-phase Variable Resistance Module.
. REF	Fixed Resistance Module.
	4. Motors, with couplings, connectors and motor support
	D.C. Motors
. EMT1	D.C. Independent excitation motor-generator.
. EMT2	D.C. Series excitation motor-generator.
. EMT3	D.C. Shunt excitation motor-generator.
. EMT4	D.C. Compound excitation motor-generator.
. EMT5	D.C. Shunt-series compound excitation motor.
. EMT12	Universal motor (single-phase).
. EMT15	D.C. Permanent Magnet Motor.
. EMT18	D.C. Brushless motor.
. EMT19	Stepper motor.
	A.C. Motors
. EMT6	A.C. Synchronous three-phase motor alternator.
. EMT6b	Permanent magnets synchronous three-phase generator (24 Vac).
. EMT7	Asynchronous three-phase motor of squirrel cage.
. EMT7b	Asynchronous three-phase motor of squirrel cage (4 poles).
. EMT7c	Asynchronous three-phase motor of squirrel cage (8 poles).
. EMT8	Asynchronous three- phase motor with wound rotor.
. EMT9	Dahlander three-phase motor (two speeds).
. EMT10	Asynchronous three-phase motor of two independent speeds.
. EMT11	Asynchronous single-phase motor with starting capacitor.
. EMT12	Universal motor (single-phase).
. EMT14	Repulsion motor, single-phase with short-circuited brushes.
. EMT16	Asynchronous single-phase motor with starting and running capacitor.
. EMT17	Three-phase motor of squirrel cage with "Y" connection.
. EMT20	Asynchronous single-phase motor with split phase.
. EMT21	Three-phase reluctance motor.
. EMT22	Single-phase shaded pole motor.
	5. Brakes
. FRE-FE	Electronic Brake.
. DI-FRE	Pendular Dynamo Brake.
. FREND	Dynamo Brake 300 W.
. FRENP	Magnetic Powder Brake.
. FREPR	Prony Brake.
. FRECP	Eddy Current Brake.
	6. Transformers
. ETT	Three-phase and Single-phase Transformers Unit.
. TPPT	Three-phase Power Transformer Unit.
. EMPTA	Auxiliary Transformer and Protection Module.
. AUTR	Variable Auto-Transformer.
. TRANS	Single-phase Transformer.
	7. DC Motor Speed Control
. VVCC	DC Motors Speed Controller.
. VVCC/M	DC Motors Speed Controller (intermediate option).
. VVPP	Velocity Control for Stepper Motor (Manual control and automatic control).
. VVPP/B	Velocity Control for Stepper Motor (Manual control).
	8. AC Motor Speed Control
. VVCA	AC Motor Speed Controller.
. VVCA/M	AC Motor Speed Controller (intermediate option).
	9 .PLC
. PLC-PI	PLC Module for the Control of Industrial Processes (for working with EDIBON Computer Controlled Teaching Units).
	10. Tachogenerator
. TECNEL/T	Tachogenerator.
. TECNEL/TM	Hand Tachometer.
	11, 12 and 13. Additional possibilities
- EM-SCADA	Control and Data Acquisition System Software for Electrical Machines.
- ICAI-ELEC	Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC	Faults Simulation System for Electricity.
- ELK-ELEC	EDIBON LabVIEW KIT for Electricity.
- MUAD	Electric Power Data Acquisition System.

44 Electricity. ELECTROMECHANICAL CONSTRUCTIONS

- AEL-4	**Electromechanical Constructions Laboratory.**
. AEL-4.1.	Transformers Construction.
. AEL-4.2.	Electrical Motors Construction.

44.1 AEL-4.1. Transformers Construction

	Single-Phase Transformers Construction
. AEL-SPTC	Single-Phase Transformer Construction Kit.
	Three-Phase Transformers Construction
. AEL-TPTC	Three-Phase Transformer Construction Kit.
	Professional Practices in wiring Transformers
. AEL-PSPTC	Single-Phase Transformer wiring.
. AEL-PTPTC	Three-Phase Transformer wiring.

44.2 AEL-4.2. Electrical Motors Construction

	Dissectable and Configurable Electrical Motors System
. AEL-EMT-KIT	Advanced Dissectable and Configurable Electrical Machines.
	Cut Away Electrical Motors
. AEL-EMT1-S	Cut away D.C. indepedent excitation motor-generator.

. AEL-EMT2-S	Cut away D.C. series excitation motor-generator.
. AEL-EMT3-S	Cut away D.C. shunt excitation motor-generator.
. AEL-EMT4-S	Cut away D.C. compound excitation motor-generator.
. AEL-EMT5-S	Cut away D.C. shunt-series compound excitation motor.
. AEL-EMT6-S	Cut away A.C. synchronous three-phase motor alternator.
. AEL-EMT7-S	Cut away asynchronous three-phase motor of squirrel cage.
. AEL-EMT8-S	Cut away asynchronous three-phase motor with wound rotor.
. AEL-EMT9-S	Cut away Dahlander three-phase.
. AEL-EMT10-S	Cut away asynchronous three-phase motor of two independent speeds.
. AEL-EMT11-S	Cut away asynchronous single-phase motor with starting capacitor.
. AEL-EMT12-S	Cut away universal motor.
. AEL-EMT14-S	Cut away repulsion motor, single-phase with short-circuited brushes.
. AEL-EMT15-S	Cut away D.C. permanents magnets motor.
. AEL-EMT16-S	Cut away asynchronous single-phase motor with starting and running capacitor.
. AEL-EMT17-S	Cut away asynchronous three-phase motor of squirrel cage with "Y" connection.
. AEL-EMT18-S	Cut away brushless motor.
. AEL-EMT19-S	Cut away stepper motor.
. AEL-EMT20-S	Cut away asynchronous single-phase motor with split phase.
. AEL-EMT21-S	Cut away three-phase reluctance motor.
. AEL-EMT22-S	Cut away single-phase shaded pole motor.
	Transparent and Functional Electrical Motors
. AEL-EMT1-T	Transparent and functional DC independent excitation motor-generator.
. AEL-EMT2-T	Transparent and functional DC series excitation motor-generator.
. AEL-EMT3-T	Transparent and functional DC shunt excitation motor-generator.
. AEL-EMT4-T	Transparent and functional DC compound excitation motor-generator.
. AEL-EMT5-T	Transparent and functional DC shunt-series compound excitation motor-generator.
. AEL-EMT6-T	Transparent and functional AC synchronous three-phase motor alternator.
. AEL-EMT7-T	Transparent and functional asynchronous three-phase motor of squirrel cage.
. AEL-EMT8-T	Transparent and functional asynchronous three-phase motor with wound rotor.
. AEL-EMT9-T	Transparent and functional Dahlander three-phase motor.
. AEL-EMT10-T	Transparent and functional asynchronous three-phase motor of two independent speeds.
. AEL-EMT11-T	Transparent and functional asynchronous single-phase motor with starting capacitor.
. AEL-EMT12-T	Transparent and functional universal motor.
. AEL-EMT14-T	Transparent and functional repulsion motor, single-phase with short circuited brushes.
. AEL-EMT16-T	Transparent and functional asynchronous single-phase motor with starting and running capacitor.
. AEL-EMT17-T	Transparent and functional asynchronous three-phase motor of squirrel cage with "Y" connection.
. AEL-EMT20-T	Transparent and functional asynchronous single-phase motor with split phase.
. AEL-EMT21-T	Transparent and functional three-phase reluctance motor.
. AEL-EMT22-T	Transparent and functional single-phase shaded pole motor.
	Removable Electrical Motors
. AEL-DIM-KIT	4 Disassembly Induction Motors Kit.
. AEL-TPIC	Three-Phase Induction Motor Construction.
. AEL-SPIC	Single-Phase Induction Motor Construction with starting and running capacitor.
. AEL-DCMC	DC Motor Construction.
	Professional Practices in wiring Electrical Motors
. AEL-PSPIM	Single-Phase Induction Motor wiring.
. AEL-PTSIM	Three-Phase Induction Motor wiring.
	Software
- ICAI-ELEC	Interactive Computer Aided Instruction Software System for Electricity.
- FSS-ELEC	Faults Simulation System for Electricity.

45 Electricity. POWER SYSTEMS AND SMART GRID TECHNOLOGY

- AEL-5	**Power Systems and Smart Grid Technology Laboratory.**
. AEL-5.1.	Generation Trainers.
. AEL-5.2.	Distribution and Transmission Trainers.
. AEL-5.3.	Loads Trainers.
. AEL-5.4.	Protection Relays Trainers.
. AEL-5.5.	Cybersecurity Trainers.
. AEL-5.6.	Available "Smart Grid Power Systems".
. AEL-5.7.	Individual Systems to configurate any Smart Grid.

45.1 AEL-5.1. Generation Trainers

	Basic Synchronization Generator
. AEL-MOSC	Manual Operations of Synchronization Circuits.
	Advanced Synchronization Generator
. AEL-EESD	Advanced Digital Synchronization Trainer.
	Wind Energy
. AEL-WPP	Wind Power Plants with Double Feed Induction Generator.
. AEL-WPT	Wind Power Trainer with Permanent Magnets Synchronous Generator.
. AEL-WPPI	Wind Power Plants with Induction Generator.
	Photovoltaic Energy
. AEL-PHVG	Photovoltaic Application with Connection to Grid.
	Fuell Cell Energy
. AEL-FCLL	Fuel Cell Energy Trainer.
	Power Plants
. AEL-EPP	Energy Power Plants Trainer.

45.2 AEL-5.2. Distribution and Transmission Trainers

	Distribution and Transmission Trainers
. AEL-AE1A	Aerial Line Model.
. AEL-TI-01	Analysis of Three-phase Power Lines.
. AEL-TI-02	Distribution Transformer with Motor Regulation.
. AEL-TI-03	Arc Suppression Coil.
. AEL-TI-04	Underground Transmission lines.
. AEL-TI-05	Parallel and Series Transmission Lines.
. AEL-TI-06	Analysis of Flow Power on Transmission Lines.
. AEL-TI-07	Transmission Systems with Synchronous Generator.
. AEL-SST-01	Basic Operations in Switching Transmission Substation Trainer.
. AEL-SST-02	Switching Substation Protection Trainer.
. AEL-HVDC	High Voltage DC Transmission Lines.

45.3 AEL-5.3. Loads Trainers

Basic Load Controller Trainers

. AEL-MRPC	Manual Reactive Power Compensation.
. AEL-ARPC	Automatic Reactive Power Compensation.
. AEL-APFC	Single-phase Automatic Power Compensation.
. AEL-DLT	Dynamic Loads Trainer.
. AEL-EECFP	Advanced Power Factor Compensation.
. AEL-AE6	Energy Counters Control Trainer.

Advanced Loads Control

. AEL-FUSG	Final User Smart Grid Trainer.
. AEL-FUSG-M	Final User Smart Grid-Smart Meter Trainer.
. AEL-FUSG-E	Final User Smart Grid-Smart Energy Trainer.
. AEL-FUSG-N	Final User Smart Grid-Net Metering Trainer.

45.4 AEL-5.4. Protection Relays Trainers

Fundamental Concepts

. AEL-CTFP	Current Transformer Fundaments for Protections Devices.
. AEL-VTFP	Voltage Transformer Fundaments for Protections Devices.

Protection Relays Trainers

. AEL-ERP	Protection Relays Test Trainer.
. ERP-CBM	Cybersecurity Module.

Protection Systems for Generators

. AEL-GPRE	Generator Protection Relay Trainer.

Protection Systems for Transmission and Distribution Lines

. AEL-TPT-01	Overcurrent Time Protection Relay for Lines.
. AEL-TPT-02	Directional Overcurrent Protection Relay for Transmission Lines.
. AEL-TPT-03	Overvoltage and Undervoltage Protection Relay.
. AEL-TPT-04	Directional Power Protection Relay.
. AEL-TPT-05	Earth-Fault Voltage Protection Relay.
. AEL-TPT-06	Parallel Transmission Lines Protection Relay.
. AEL-TPT-07	High Speed Distance Protection Relay.
. ERP-CBM	Cybersecurity Module.

45.5 AEL-5.5. Cybersecurity Trainers

. ERP-CBM	Cybersecurity Module.

45.6 AEL-5.6. Available "Smart Grid Power Systems "

Complete main Smart Grid (utilities) configurations

. APS12	Advanced Mechanical, Electrical and Smart Grid Power Systems (Utilities).
. AEL-MPSS	Modular Electrical and Smart Grid Power Systems (Utilities).

Reduce versions Smart Grid (utilities) configurations

. AEL-CPSS-01S	Smart Grid Power Systems Application, with Automatic Control generation, Transmission Line and Loads, with SCADA.
. AEL-CPSS-02S	Smart Micro-Grids Power Systems Application, with Automatic Control Generation and Loads, with SCADA.
. AEL-CPSS-03S	Smart Grid Power Systems Application with Two parallel Generators, Two Distribution Lines and Loads, with SCADA.
. AEL-MPSS-01	Complete Smart Grid Power Systems, with Automatic Control Generation, Transmission Line, Loads and Protection Relays, with SCADA.
. AEL-MPSS-02	Complete Smart Grid Power Systems, with Automatic Control Generation, Transmission Line and Loads, with SCADA.
. AEL-MPSS-03	Complete Smart Grid Power Systems, with Manual Control Generation, Transmission Line, Loads and Protection Relays, with SCADA.
. AEL-MPSS-04	Complete Smart Grid Power Systems, with Manual Control Generation, Transmission Line and Loads, with SCADA.

Complete Smart Grid (user) configurations

. AEL-FUSG	Final User Smart Grid Trainer.
. AEL-FUSG-M	Final User Smart Grid-Smart Meter Trainer.
. AEL-FUSG-E	Final User Smart Grid-Smart Energy Trainer.
. AEL-FUSG-N	Final User Smart Grid-Net Metering Trainer.
. AEL-FUSG-LO	Smart Grid Loads.

45.7 AEL-5.7. Individual Systems to configurate any Smart Grid

Generation Systems

Automatic Control Generation Systems options

Synchronization Studies

. AEL-GCA-P-02S	Generation System with Automatic Control of Synchronous Generator, Synchronization and Protection Relays, with SCADA.
. AEL-GCA-02S	Generation System with Automatic Control of Synchronous Generator and Synchronization, with SCADA.
. AEL-GCA-P-03S	Automatic Synchronization System of Synchronous Generator with Servomotor and Protection Relays, with SCADA.
. AEL-GCA-03S	Automatic Synchronization System of Synchronous Generator with Servomotor, with SCADA.

Isolated Grid Studies

. AEL-GCA-P-01S	Generation System with Automatic Control of Synchronous Generator in an Isolated Grid and Protection Relays, with SCADA.
. AEL-GCA-01S	Generation System with Automatic Control of Synchronous Generator in an Isolated Grid, with SCADA.

Manual Control Generation Systems options

Synchronization Studies

. AEL-GCM-P-02S	Generation System with Manual Control of Synchronous Generator, Synchronization and Protection Relays, with SCADA.
. AEL-GCM-02S	Generation System with Manual Control of Synchronous Generator and Synchronization, with SCADA.
. AEL-GCM-P-03S	Manual Synchronization System of Synchronous Generator with Servomotor and Protection Relays, with SCADA.
. AEL-GCM-03S	Manual Synchronization System of Synchronous Generator with Servomotor, with SCADA.

Isolated Grid Studies

. AEL-GCM-P-01S	Generation System with Manual Control of Synchronous Generator in an Isolated Grid and Protection Relays, with SCADA.
. AEL-GCM-01S	Generation System with Manual Control of Synchronous Generator in an Isolated Grid, with SCADA.

Additional Generation Systems options

. AEL-GAD-01S	Pumping Power Plant, with SCADA.
. TDEGC	Computer Controlled Diesel Engine Electricity Generator.
. AEL-GAD-03S	Automatic Generation System with Two Parallel Generators, with SCADA.
. AEL-GAD-04S	Hydroelectric Power Plant, with SCADA.

Transmission/Distribution Systems

Transmission and Distribution Power Systems options

One Line and Regulation Transformer Studies

. AEL-T-P-01S	Transmission and Distribution Power Systems with Regulation Transformer and Protection Relays, with SCADA.
. AEL-T-01S	Transmission and Distribution Power Systems with Regulation Transformer, with SCADA.

Two Aerial line Studies

. AEL-T-P-02S	Transmission and Distribution Power Systems with Two Aerial Parallel Lines and Protection Relays, with SCADA.
. AEL-T-02S	Transmission and Distribution Power Systems with two Aerial Parallel Lines, with SCADA.

Additional Studies Possibilities

. AEL-T-P-04S	Electrical Distribution Grids Trainer with Protection Relays, with SCADA.
. AEL-T-04S	Electrical Distribution Grids Trainer, with SCADA.
. AEL-T-03S	Power Flow Control in Meshed Networks, with SCADA.

Load Systems

Conventional Loads options

. AEL-C-P-02S	Loads Systems with Automatic Power Factor Compensation and Protection Relays, with SCADA.
. AEL-C-02S	Loads Systems with Automatic Power Factor Compensation, with SCADA.
. AEL-C-P-01S	Loads Systems with Manual Power Factor Compensation and Protection Relays, with SCADA.
. AEL-C-01S	Loads Systems with Manual Power Factor Compensation, with SCADA.

Special Loads options

. AEL-C-03S	Complex Load, Power Consumption Measurement and Peak Load Monitoring, with SCADA.

46 Electricity. ALL ELECTRICITY MODULES AVAILABLE

See Catalog AEL-6

49 Additional options related with Electricity

49.6 Electricity Teaching Technics. EXPANSIONS

ESN	ECL	EWB	ELK
ICAI	FSS	AEL-MUAD/VIS	

49.7 Other units related with Electricity . See sections:

- 10 - 20 - 50 - 60 - 100

50 ENERGY (Smart Grid. Power Systems. Renewable Energies. Saving Energy. Etc.)

51 Energy. SMART GRID AND POWER SYSTEMS

Smart Grid "Utilities"

- APS12	Advanced Mechanical, Electrical and Smart Grid Power Systems (Utilities).
. ERP-CBM	Cybersecurity Module.
- AEL-MPSS	Modular Electrical and Smart Grid Power Systems (Utilities).
. ERP-CBM	Cybersecurity Module.
- TDEGC	Computer Controlled Diesel Engine Electricity Generator.

Smart Grid "Final User"

- AEL-FUSG	Final User Smart Grid Trainer.
- AEL-FUSG-M	Final User Smart Grid-Smart Meter Trainer.
- AEL-FUSG-E	Final User Smart Grid-Smart Energy Trainer.
- AEL-FUSG-N	Final User Smart Grid-Net Metering Trainer.

EDIBON Cloud Learning

Other options in section 45

- ECL-ENERGY	EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY	Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY	Faults Simulation System for Energy.
- ELK-ENERGY	EDIBON LabVIEW KIT for Energy.

52 Energy. GRIDS

52.1 Cybersecurity

- ERP-CBM	Cybersecurity Module.

52.2 Mechanical Generators

- TDEGC	Computer Controlled Diesel Engine Electricity Generator.

52.3 Micro Grid Power System

- AEL-CPSS-02S	Smart Micro-Grids Power Systems Application, with Automatic Control Generation and Loads, with SCADA.

52.4 Micro Grid Series

- AEL-MGR	Microgrid Series, formed by:
- AEL-MGR-1	Stand-Alone and Parallel Generator Operation Application.
- AEL-MGR-2	Isolated-Parallel Generator Operation Application.
- AEL-WPT	Wind Power Trainer with Permanent Magnets Synchronous Generator.
- AEL-PHVG	Photovoltaic Application with Connection to Grid.
- TDEGC	Computer Controlled Diesel Engine Electricity Generator.
- AEL-ESS	Electrical Synchronization Systems Series.
- DC GRID	Direct Current Grids.
- FACTS	Flexible Alternate Current Transmission Systems.
- AEL-BSG	Basic Smart Grid Trainer.
- AEL-BSGC	Basic Smart Grid Trainer, with SCADA.

EDIBON Cloud Learning

- ECL-ENERGY	EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY	Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY	Faults Simulation System for Energy.
- ELK-ENERGY	EDIBON LabVIEW KIT for Energy.

53 Energy. GENERATION SYSTEMS

- TDEGC	Computer Controlled Diesel Engine Electricity Generator.

EDIBON Cloud Learning

- ECL-ENERGY	EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY	Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY	Faults Simulation System for Energy.

- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

54 Energy. PROTECTION RELAYS UNITS

- ERP Protection Relays Test.
- ERP-UB Protection Relays Test Unit (common for the relay modules type "ERP").

Protection Relay Modules

- ERP-SFT Overcurrent and Earth Fault Protection Relay Module.
- ERP-SDND Directional/Non directional Overcurrent Protection Relay Module.
- ERP-PDF Differential Protection Relay Module.
- ERP-MA Feeder Management Relay Module.
- ERP-PD Distance Protection Relay Module.
- ERP-GMGPT Motor-Generator with Protection Relays and Automatic Regulation.
- ERP-CBM Cybersecurity Module.

55 Energy. CYBERSECURITY

- ERP-CBM Cybersecurity Module.

56 Energy. HIGH VOLTAGE

- HVLS High Voltage Laboratory System.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57 Energy. RENEWABLE ENERGIES

57.1 Photovoltaic

Units with SCADA

- EESFC Computer Controlled Photovoltaic Solar Energy Unit.
- AEL-PHVG Photovoltaic Application with Connection to Grid.

Manual Units

- EESFB Photovoltaic Solar Energy Unit.
- MINI-EESF Photovoltaic Solar Energy Modular Trainer (Complete Version).
- MINI-EESF/M Photovoltaic Solar Energy Modular Trainer (Intermediate Version).
- MINI-EESF/B Photovoltaic Solar Energy Modular Trainer (Basic Version).

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.2 Solar Energy Collector

- ECESC Computer Controlled Focusing Solar Energy Collector.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.3 Solar Thermal

Units with SCADA

- EESTC Computer Controlled Thermal Solar Energy Unit.
- MINI-EESTC Computer Controlled Thermal Solar Energy Basic Unit.

Manual Units

- EEST Thermal Solar Energy Unit.
- MINI-EEST Thermal Solar Energy Basic Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.4 Wind

Units with SCADA

- EEEC Computer Controlled Wind Energy Unit.
- AEL-PHVG Photovoltaic Application with Connection to Grid.
- MINI-EEEC Computer Controlled Wind Energy Basic Unit.
- AEL-WPP Wind Power Plants with Double Feed Induction Generator.
- AEL-WPPI Wind Power Plants with Induction Generator.
- AEL-WPT Wind Power Trainer with Permanent Magnets Synchronous Generator.

Manual Units

- EEE Wind Energy Unit.
- MINI-EEE Wind Energy Basic Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.5 Fuell Cells

Units with SCADA

- EC6C Computer Controlled PEM Fuel Cell Advanced Unit.
- EC5C Computer Controlled PEM Fuel Cell Unit.

Manual Units

- EC6B PEM Fuel Cell Advanced Unit.
- EC5B PEM Fuel Cell Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.6 Biofuells

Units with SCADA

- EBEC Computer Controlled Bioethanol Process Unit.
- EBGC Computer Controlled Biogas Process Unit.
- EBDC Computer Controlled Biodiesel Process Unit.
- EBMC Computer Controlled Biomass Process Unit.

Manual Units

- EBEB Bioethanol Process Unit.

- EBGB Biogas Process Unit.
- EBDB Biodiesel Process Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.7 Sea

Units with SCADA

- EOMC Computer Controlled Waves Energy Unit.
- EMMC Computer Controlled Tidal Energy Unit.
- ECMC Computer Controlled Submarine Currents Energy Unit.
- ETMC Computer Controlled Ocean Thermal Energy Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

57.8 Geothermal

Units with SCADA

- EG5C Computer Controlled Geothermal (low enthalpy) Energy Unit.
- EG6C Computer Controlled Geothermal (high enthalpy) Energy Unit.

Manual Units

- EG5B Geothermal (low enthalpy) Energy Unit.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

58 Energy. SAVING ENERGY

58.1 Energy Utilitation

Units with SCADA

- THIBAR22C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- SCE Computer Controlled Generating Stations Control and Regulation Simulator.
- TORC Computer Controlled Organic Rankine Cycle Unit.
- TVCC Computer Controlled Combustion Laboratory Unit.
- TMSC Computer Controlled Stirling Motor.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

58.2 Energy Generation

Hydraulic Turbines (conventional)

Units with SCADA

- TPC Computer Controlled Pelton Turbine.
- TFC Computer Controlled Francis Turbine.
- TKC Computer Controlled Kaplan Turbine.

Hydraulic Turbines (special)

Units with SCADA

- TFRC Computer Controlled Radial Flow Turbine.
- TFAC Computer Controlled Axial Flow Turbine.
- HTRC Computer Controlled Experimental Reaction Turbine.
- HTIC Computer Controlled Experimental Impulse Turbine.

Thermal Turbines

Units with SCADA

- TGDEC Computer Controlled Two -Shaft Gas Turbine.
- TGDEPC Computer Controlled Two-Shaft Gas Turbine/ Jet Engine.
- TGFAC Computer Controlled Axial Flow Gas Turbine/ Jet Engine.
- TTVC Computer Controlled Steam Turbine.
- HTVC Computer Controlled Solar/Heat Source Vapour Turbine.

EDIBON Cloud Learning

- ECL-ENERGY EDIBON Cloud Learning for Energy.

Software

- ICAI-ENERGY Interactive Computer Aided Instruction Software System for Energy.
- FSS-ENERGY Faults Simulation System for Energy.
- ELK-ENERGY EDIBON LabVIEW KIT for Energy.

59 Additional options related with Energy

59.6 Energy. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

59.7 Other units related with Energy . See sections:

- 20 - 40 - 60 - 70 - 80 - 90 - 100 - 130 - 180 - 201

60 MECHATRONICS & COMPUMECHATRONICS (Mechatronics. Compumechatronics. Automation & PLC.)

61 Mechatronics. BASIC PLC's CONCEPTS

61.1 AE-PLCB. Basic PLC Trainers Modules

- N-ALI02 Domestic Main Power Supply.
- N-PLC PLC Module.
- N-MT Test Module.
- N-HMI PLC Human Machine Interface Module.

61.2 EMULATION modules working with all AE-PLCB's

Traffic and Parking

- N-PLC-CST Traffic Signal Control.
- N-PLC-AV Car Parking.

- N-PLC-AG2Z Two Zones Parking Garage.

Small Industrial Machines

- N-PLC-CA Elevator Control Module.
- N-PLC-CLA Automatic Washing Machine Control Module.
- N-PLC-MB Drinks Machine Module.
- N-PLC-MBC Hot Drinks Machine Module.
- N-PLC-CB Pump Control.
- N-PLC-MA Embossing Machine.

Small Industrial Systems

- N-PLC-ST Drilling System.
- N-PLC-SBAR Dirty-Water Pump System.
- N-PLC-SBP Pump System (Pressure).
- N-PLC-SL Cleaning System.
- N-PLC-SALL Automatic Filling System.
- N-PLC-SBT Conveyor Belts System.
- N-PLC-SCCT Conveyor Charging System.
- N-PLC-SCA Canalization System.
- N-PLC-SDT Pipe Bending System.
- N-PLC-PAE Automatic Stamping Press.

Big Industrial Systems

- N-PLC-PLLT Filling Process of Tanks.
- N-PLC-SCC Collecting Belt Conveyor.
- N-PLC-MCC Mails Allocation Machine.
- N-PLC-RAC Compressed Air Network.
- N-PLC-TC Coal Treatment.
- N-PLC-PELE Packing Line and Bottling Plant.

Simple Control Applications

- N-PLC-CA2P Two-Doors Access Control.
- N-PLC-CI Fire Control.
- N-PLC-CP Proximity Control (security).
- N-PLC-CCO Sluice Gate Control.
- N-PLC-CNC Level and Flow Control.
- N-PLC-CNTA Water Tower Level Control.
- N-PLC-CF Photo Control.
- N-PLC-CMM Molding Machine Control.
- N-PLC-CPOS Position Control.
- N-PLC-CS Silo Control.
- N-PLC-CACV Vehicle Feeding & Loading Control.

Complex Industrial Control Applications

- N-PLC-ACC Feeding and Loading Control.
- N-PLC-CML Liquids Mixing Control.
- N-PLC-CME Mixer Control.
- N-PLC-CR Reactor Control Module.
- N-PLC-CCP Count and Position Control.
- N-PLC-CL Rolling Mill Control.
- N-PLC-CTRA Workcell Application.
- N-PLC-CTI Tower Lighting Control Module.

Thermal Applications

- N-PLC-AC Buffer Storage.
- N-PLC-RT Temperature Regulation.
- N-PLC-CSC Heating System Control.
- N-PLC-CSV Ventilation System Control.

Electrical Machines Control (Motors)

- N-PLC-M Motor Control.
- N-PLC-MPP Stepper Motor Control.
- N-PLC-MET Star-Delta Connection.
- N-PLC-MCETI Reversing Star-Delta Connection.
- N-PLC-MD Dahlander Motor Circuit.
- N-PLC-M2BS Motor with 2 separate Windings.
- N-PLC-MAC Starting a Wound - Rotor Motor.

Alarms / Current

- N-PLC-AN Annunciator.
- N-PLC-SLU Running Lights.
- N-PLC-CPR Reactive Current Compensation.
- N-PLC-MCI Reversing Contactor.

61.3 SMALL SCALE Real Applications working with all AE-PLCB's

Sensors

- AE-PLCB-BS1 Vibration and/or Deformation Test Module.
- AE-PLCB-BS2 Temperature Test Module.
- AE-PLCB-BS3 Pressure Test Module.
- AE-PLCB-BS4 Flow Test Module.
- AE-PLCB-BS5 Ovens Test Module.
- AE-PLCB-BS6 Liquid Level Test Module.
- AE-PLCB-BS7 Tachometers Test Module.
- AE-PLCB-BS8 Proximity Test Module.
- AE-PLCB-BS9 Pneumatic Test Module.
- AE-PLCB-BS10 Light Test Module.

61.4 EDIBON UNITS USING SCADA Applications (SCADA + PLC)

See section 64

61.5 All PLC's Brands available

- AE-PLCB-PA Panasonic.
- AE-PLCB-AB Alan Brandley.
- AE-PLCB-SIE Siemens.
- AE-PLCB-OM Omron.
- AE-PLCB-MIT Mitsubishi.
- AE-PLCB-OTH Others.

61.5.1 Siemens Basic Configurations

- AE-PLCE-SIE-1200 Basic Siemens PLC trainer.

62 Mechatronics. ADVANCED PLC's CONCEPTS

62.1 AE-PLCA. Advanced PLC Trainers Modules

- N-ALI02 Domestic Main Power Supply.
- N-PLC PLC Module.
- N-ESA Analog Input and Output Module.
- N-MT Test Module.
- N-HMI PLC Human Machine Interface Module.

Optionals

- N-GSM GSM communication module.
- N-MOD Modem communication module.
- N-WS WEB Server communication module.
- N-SV Servomotor module.

62.2 EMULATION modules working with all AE-PLCA's

Traffic and Parking

- N-PLC-CST Traffic Signal Control.

- N-PLC-AV Car Parking.
- N-PLC-AG2Z Two Zones Parking Garage.

Small Industrial Machines

- N-PLC-CA Elevator Control Module.
- N-PLC-CLA Automatic Washing Machine Control Module.
- N-PLC-MB Drinks Machine Module.
- N-PLC-MBC Hot Drinks Machine Module.
- N-PLC-CB Pump Control.
- N-PLC-MA Embossing Machine.

Simple Industrial Systems

- N-PLC-ST Drilling System.
- N-PLC-SBAR Dirty-Water Pump System.
- N-PLC-SBP Pump System (Pressure).
- N-PLC-SL Cleaning System.
- N-PLC-SALL Automatic Filling System.
- N-PLC-SBT Conveyor Belts System.
- N-PLC-SCCT Conveyor Charging System.
- N-PLC-SCA Canalization System.
- N-PLC-SDT Pipe Bending System.
- N-PLC-PAE Automatic Stamping Press.

Big Industrial Systems

- N-PLC-PLLT Filling Process of Tanks.
- N-PLC-SCC Collecting Belt Conveyor.
- N-PLC-MCC Mails Allocation Machine.
- N-PLC-RAC Compressed Air Network.
- N-PLC-TC Coal Treatment.
- N-PLC-PELE Packing Line and Bottling Plant.

Simple Control Applications

- N-PLC-CA2P Two-Doors Access Control.
- N-PLC-CI Fire Control.
- N-PLC-CP Proximity Control (security).
- N-PLC-CCO Sluice Gate Control.
- N-PLC-CNC Level and Flow Control.
- N-PLC-CNTA Water Tower Level Control.
- N-PLC-CF Photo Control.
- N-PLC-CMM Molding Machine Control.
- N-PLC-CPOS Position Control.
- N-PLC-CS Silo Control.
- N-PLC-CACV Vehicle Feeding & Loading Control.

Complex Industrial Control Applications

- N-PLC-ACC Feeding and Loading Control.
- N-PLC-CML Liquids Mixing Control.
- N-PLC-CME Mixer Control.
- N-PLC-CR Reactor Control Module.
- N-PLC-CCP Count and Position Control.
- N-PLC-CL Rolling Mill Control.
- N-PLC-CTRA Workcell Application.
- N-PLC-CTI Tower Lighting Control Module.

Thermal Applications

- N-PLC-AC Buffer Storage.
- N-PLC-RT Temperature Regulation.
- N-PLC-CSC Heating System Control.
- N-PLC-CSV Ventilation System Control.

Electrical Machines Control (Motors)

- N-PLC-M Motor Control.
- N-PLC-MPP Stepper Motor Control.
- N-PLC-MET Star-Delta Connection.
- N-PLC-MCETI Reversing Star-Delta Connection.
- N-PLC-MD Dahlander Motor Circuit.
- N-PLC-M2BS Motor with 2 separate Windings.
- N-PLC-MAC Starting a Wound - Rotor Motor.

Alarms / Current

- N-PLC-AN Annunciator.
- N-PLC-SLU Running Lights.
- N-PLC-CPR Reactive Current Compensation.
- N-PLC-MCI Reversing Contactor.

62.3 AE-PLCA INDUSTRIAL PROCESS Applications

- AE-PLCA-CPI Industrial Control Process System.
- AE-PLCA-PQ Chemical Control Process System.
- AE-PLCA-SE Elevator Control System.
- AE-PLCA-CS Traffic Light Control System.
- AE-PLCA-NS Pneumatic and Electro-Pneumatic Training System.
- AE-PLCA-ME Electrical Machines.
- AE-PLCA-INV GreenHouse System.
- AE-PLCA-CIM Computer Integrated Manufacturing.
- AE-PLCA-APS Pieces Feeder.
- AE-PLCA-MPS Pieces Manipulator.

62.4 AE-PLCA ENERGY Applications

- AE-PLCA-EF Photovoltaic Energy.
- AE-PLCA-EE Wind Energy.
- AE-PLCA-EST Solar Thermal Energy.
- AE-PLCA-SH Hybrid Energy System.
- AE-PLCA-SP Power System.
- AE-PLCA-SM Smart Grid System.

62.5 AE-PLCA MOTION Applications

- AE-PLCA-SIP Pieces Identification System.
- AE-PLCA-MEMB Bottling Process System.
- AE-PLCA-MET Labelling Process System.
- AE-PLCA-ST Drilling System.
- AE-PLCA-SPO Positioning System.
- AE-PLCA-SMOLD Molding System.
- AE-PLCA-SCOR Cutting System.
- AE-PLCA-V Vacuum Trainer.

62.6 EDIBON UNITS USING SCADA Applications. Industrial Configurations (SCADA + PLC)

See section 64

62.7 All PLC's Brands available

- AE-PLCA-PA Panasonic.
- AE-PLCA-AB Alan Brandley.
- AE-PLCA-SIE Siemens.
- AE-PLCA-OM Omron.
- AE-PLCA-MIT Mitsubishi.
- AE-PLCA-OTH Others.

62.7.1 Siemens Advanced Configurations

- AE-PLCE-SIE-1500 Advanced Siemens PLC trainer.

63 Void

64 Mechatronics. COMPUMECHATRONICS

64.1 Compumechatronics / SCADA

CMT1. All EDIBON Units using SCADA in the following areas are compumechatronics units:

10 PHYSICS
20 ELECTRONICS
30 COMMUNICATIONS
40 ELECTRICITY
50 ENERGY
60 MECHATRONICS & COMPUMECHATRONICS
70 MECHANICS
80 FLUID MECHANICS
90 THERMODYNAMICS & THERMOTECHNICS
100 PROCESS CONTROL
110 CHEMICAL ENGINEERING
120 FOOD & WATER TECHNOLOGIES
130 ENVIRONMENT
140 BIOMEDICAL ENGINEERING

64.2 Compumechatronics / Real Industrial Configurations

CMT2. All EDIBON Units using SCADA + PLC Control in the following areas are "real industrial configurations". They can use AE-PLCA:

10 PHYSICS
20 ELECTRONICS
30 COMMUNICATIONS
40 ELECTRICITY
50 ENERGY
60 MECHATRONICS & COMPUMECHATRONICS
70 MECHANICS
80 FLUID MECHANICS
90 THERMODYNAMICS & THERMOTECHNICS
100 PROCESS CONTROL
110 CHEMICAL ENGINEERING
120 FOOD & WATER TECHNOLOGIES
130 ENVIRONMENT
140 BIOMEDICAL ENGINEERING

65 Mechatronics. CONTROL

65.1 Regulation and Control Applications

- RYC — Computer Controlled Teaching Unit for the Study of Regulation and Control.
- RYC/B — Basic Teaching Unit for the Study of Regulation and Control.

Software

- ICAI-COMPU — Interactive Computer Aided Instruction Software System for Mechatronics & Compumechatronics.
- FSS-COMPU — Faults Simulation System for Mechatronics & Compumechatronics.

65.2 Control Applications

- EPID/T — Industrial Regulation Trainer, PID type (Temperature).
- CECI — Industrial Controllers Trainer.
- CRCI — Industrial Controllers Networking.
- CEAB — Trainer for Field Bus Applications.
- CEAC — Controller Tuning Trainer.

65.3 Process Control Applications

- UCP-P — Computer Controlled Process Control Unit for the study of Pressure (Air).
- CTAC — Computer Controlled Coupled Tanks System.

Software

- ICAI-COMPU — Interactive Computer Aided Instruction Software System for Mechatronics & Compumechatronics.
- FSS-COMPU — Faults Simulation System for Mechatronics & Compumechatronics.

65.4 Systems Applications

- SCE — Computer Controlled Generating Stations Control and Regulation Simulator.
- SBB — Ball and Beam System.
- CPVM — DC Motor Position and Speed Control.

Software

- ICAI-COMPU — Interactive Computer Aided Instruction Software System for Mechatronics & Compumechatronics.
- FSS-COMPU — Faults Simulation System for Mechatronics & Compumechatronics.

69 Additional options related with Mechatronics

69.6 Mechatronics. EXPANSIONS

ESN ECL EWB ICAI
FSS

69.7 Other units related with Mechatronics . See sections:

- 20 - 40 - 50 - 70 - 80 - 90 - 100 - 120 - 130

70 MECHANICS (Mechanics. Automotive. Strength of Materials. Materials. Etc.)

71 Mechanics. MECHANICAL ENGINEERING

71.1 Basic Concepts

- LIMEBA — Basic Mechanics Integrated Laboratory.

Modules
Panel

. MECA1 — Statics Experiments.
. MECA2 — Load Elevation Mechanisms Experiments.
. MECA3 — Transmissions Experiments.
. MECA4 — Dynamics Experiments.
. MECA5 — Friction Experiments.
. MECA6 — Special Mechanisms Experiments.

Software

- ICAI-MECH — Interactive Computer Aided Instruction Software System for Mechanics.

71.2 Basic Units

- MTSF — Worm and Wheel Unit.

- MRYE1 Wheel and Axle Unit .
- MRYE2 Wheel and Differential Axle Unit .
- MDC Differential-Crownwheel and Pinion.
- MAE Acceleration of Geared System Unit.
- MCD Thin Cylinder Unit.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.3 Mechanisms

- MBD Slider Crank Mechanism.
- MYE Scotch Yoke Mechanism.
- MBM1 Slotted Link Mechanism.
- MBM2 Whitworth Quick Return Mechanism.
- MCA Four Bar Chain Mechanism.
- MME Geneva Stop Mechanism.
- MAC Coupling Mechanism.
- MUN Hook's Joint Mechanism.
- MEX Cam and Follower Mechanism.
- MBI Crank Mechanism.
- MDA Ackermann Steering Mechanism.
- MMEL Winch Mechanism.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.4 Dynamics

Units with SCADA

- MVCC Computer Controlled Critical Speed Investigation Unit.
- MBMRC Computer Controlled Balance of Reciprocating Masses Unit.

Manual Units

- MEER Whirling of Shafts Unit.
- MEAL Cam Analysis Unit.
- MDFC Coriolis Force Demonstration Unit.
- MFCE Centrifugal Force Unit .
- MGI Gyroscope.
- MED Static and Dynamic Balancing Unit.
- MES Simple Balancing Unit.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.5 Vibrations

Units with SCADA

- MEVTC Computer Controlled Torsional Vibration Unit.

Manual Units

- MVRE Vibration of Spiral Spring Unit.
- MVL Free Vibration Unit.
- MVLF Free & Forced Vibration Unit.
- MEVLB Unit for studying Free Vibration of a Bar.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.6 Friction

- MCF Belt Friction Unit.
- MEF Friction Study Unit.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.7 Tribology

- MPCO Journal Bearing Unit.
- MEMT Tribology Modular Trainer.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

71.8 Oscillations

- MSHU Simple Harmonic Motion Unit.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.

72 Mechanics. AUTOMOTIVE ENGINEERING

72.1 Brakes and Clutches

- MFT Drum Brake System.
- MFD Disk Brake.
- MFF Braking and Accelerating Forces Unit.
- MEM Plate Clutch.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH Faults Simulation System for Mechanics.
- ELK-MECH EDIBON LabVIEW KIT for Mechanics.

72.2 Gears and Differentials

- MCC Gearbox.
- MTE1 Epicyclic Gear Unit (1 element).
- MTE2 Epicyclic Gear Unit (2 elements).
- MTE3 Epicyclic Gear Unit (3 elements).
- MESE Geared Systems Study Unit.
- MDC Differential-Crownwheel and Pinion.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH Faults Simulation System for Mechanics.
- ELK-MECH EDIBON LabVIEW KIT for Mechanics.

72.3 Transmissions

- MEC Overdrive Unit.
- MBW Borg-Warner Automatic Transmission.
- MDC Differential-Crownwheel and Pinion.

Software

- ICAI-MECH Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH Faults Simulation System for Mechanics.
- ELK-MECH EDIBON LabVIEW KIT for Mechanics.

72.4 Engines Test Benches

Units with SCADA

- TBMC3 Computer Controlled Test Bench for Single-Cylinder Engines, 2.2 kW.
- TBMC8 Computer Controlled Test Bench for Single-Cylinder Engines, 7.5 kW.
- TBMC12 Computer Controlled Test Bench for Single-Cylinder and Two-Cylinders Engines, 11 kW.

- TBMC75	Computer Controlled Test Bench for Four-Cylinders Engines, 75 kW.
- TBMC-CG	Computer Controlled Exhaust Gas Calorimeter.
- TMHC	Computer Controlled Test Bench for Hybrid Engine.
	Manual Units
- TBMC-AGE	Exhaust Gas Analyzer.
	Software
- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

72.5 Miscellaneous

- MEE	Geared Lifting Machine.
- MSH	Simple Hydraulic System.
- MGE	Gear Generation Unit.
	Software
- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

73 Void

74 Mechanics. CIM

. AE-PLCA-CIM	Computer Integrated Manufacturing.

75 Mechanics. HYDROPNEUMATICS AND ROBOTICS

75.1 Oleohydraulics

. AE-PLCA-HD	Oleo-Hydraulic and Electro-Hydraulic Training System.
	Software
- AE-PLCA-AS	Automation Systems Simulator Software.

75.2 Pneumatic

. AE-PLCA-A	Feeding Module for Pieces.
. AE-PLCA-M	Mounting Module.
. AE-PLCA-MRB	Basic Rotary Table Module.
. AE-PLCA-MRA	Advanced Rotary Table Module.
. AE-PLCA-AT	Automatic Screw Module.
. AE-PLCA-NS	Pneumatic and Electro-Pneumatic Training System.
. AE-PLCA-V	Vacuum Trainer.

75.2.1 Accessories

. AE-PLCA-APS	Pieces Feeder.
. AE-PLCA-MPS	Pieces Manipulator.
	Software
- AE-PLCA-AS	Automation Systems Simulator Software.

75.3 Hydropneumatic

. AE-PLCA-P	Automatic Pressing Module.
	Software
- AE-PLCA-AS	Automation Systems Simulator Software.

75.4 Robotic

. AE-PLCA-BR	Robotic Arm Module.
. AE-PLCA-AL	Storage Module.
. AE-PLCA-T	Linear Transport Module.
	Software
- AE-PLCA-AS	Automation Systems Simulator Software.

76 Void

77 Mechanics. STRENGTH OF MATERIALS

77.1 Photoelasticity (Traction, Flexion, Torsion, Bending, etc)

- EFO	Photoelasticity Unit.
- EFOC	Photoelasticity Unit with Strain Gauges Measurements System.
- EFOV	Photoelasticity Unit with Artificial Vision System.
	Software
- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

77.2 Traction. Flexion. Bending. Torsion

- EEU/20KN	Universal Material Testing Unit-20KN.
- EEFCR	Creep Testing Unit.
- MVV	Unsymmetrical Cantilever Unit.
- MUP	Universal Buckling Unit.
- MTP	Twist and Bend Machine.
- MFV	Beam Deflection Unit.
- MTB	Torsion Unit.
- MFLT	Strut Buckling Unit.
- MDB	Deflection of Curved Bars Unit.
- MMF	Shear Force and Bending Momentum Unit.
- MOT	Torsional Oscillations Unit.
- MELH	Unit for studying Hooke´s Law.
	Software
- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

77.3 Fatigue. Hardness. Impact

	Units with SCADA
- EEFC	Computer Controlled Fatigue Testing Unit.
	Manual Units
- EEF	Fatigue Testing Unit.
- EEICI	Charpy and Izod Impact Testing Unit.
- EEDB	Brinell Hardness Testing Unit.
- EBVR	Brinell, Vickers & Rockwell Hardnees Testing Unit.
	Software
- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

77.4 Structures

- MFPG	Unit for studying Forces in a Jib Crane.
- MEMB2	Unit for studying Equilibrium of Moments on a Two Arm Lever.
- MVS	Suspension Bridge Unit.

- MARP	Parabolic Arch Unit.
- MART	Three-Hinged Arch Unit.
- MFBS	Unit for Studying Forces in a Simple Bar Structure.
- MFCS1	Unit for studying Forces in Different Single Plane Trusses.
- MFCS2	Unit for studying Forces in an Overdeterminate Truss.
- MFCS3	Unit for studying Deformation of Trusses.
- MFL	Two Hinged Arch Unit.
- MPO	Portal Frame Unit.

Software

- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

77.5 Miscellaneous

- MEGE	Strain Gauge Training Unit.
- MFGE	Unit for determining the Gauge Factor of Strain Gauges.
- MEPE	Simple Stability Problems Study Unit.
- MDLE	Unit for studying Methods to Determine the Elastic Line.
- MBU	Universal Bench Mounted Frame.

Software

- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

78 Mechanics. MATERIALS

78.1 Foundry

- MCAM	Bell Casting Basic Training Set.
- MCLA	Foundry, Building-up Training Set 1.
- MCEN	Centrifugal Casting, Building-up Training Set 2.

Software

- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

78.2 Building

Units with SCADA

- TIAC	Computer Controlled Acoustic Impedance Tube/Acoustic Insulation Test Unit.
- TDRC	Computer Controlled Noise Control Demonstration Unit.
- TEVC	Computer Controlled Ventilation Trainer.
- TCMC	Computer Controlled Thermal Conductivity of Building and Insulating Materials Unit.
- TSCAC	Computer Controlled Air Duct Systems Unit.

Software

- ICAI-MECH	Interactive Computer Aided Instruction Software System for Mechanics.
- FSS-MECH	Faults Simulation System for Mechanics.
- ELK-MECH	EDIBON LabVIEW KIT for Mechanics.

78.3 Testing

79 Additional options related with Mechanics

79.6 Mechanics. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	DAS

79.7 Other units related with Mechanics . See sections:

- 10 - 60 - 80 - 90 - 100 - 180 - 201

80 FLUID MECHANICS (Fluid Mechanics. Hydraulic Machines.Aerodynamics.Etc)

81 Fluid Mechanics. BASIC CONCEPTS

- LIFLUBA	Basic Fluids Mechanics Integrated Laboratory.

81.1 Service Units

. FME00	Hydraulics Bench.
. FME00/B	Basic Hydraulic Feed System.

81.2 Fluid Concepts

. FME02	Flow over Weirs.
. FME04	Orifice Discharge.
. FME14	Free and Forced Vortex.
. FME34	Fluid Statics and Manometry.
. FME35	Fluid Properties.
. FME36	Rotameter.

Data Acquisition

- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.

Software

- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.3 General Fluid Applications

. FME01	Impact of a Jet.
. FME08	Hydrostatic Pressure.
. FME10	Dead Weight Calibrator.
. FME11	Metacentric Height.
. FME26	Depression Measurement System (vacuum gauge).
. FME32	Pitot Static Tube Module.

Data Acquisition

- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.

Software

- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.4 Hydraulic Laws

. FME03	Bernoulli's Theorem Demonstration.
. FME22	Venturi, Bernoulli and Cavitation Unit.
. FME06	Osborne - Reynolds' Demonstration.
. FME31	Horizontal Osborne-Reynolds Demonstration.
. FME24	Unit for the Study of Porous Beds in Venturi Tubes (Darcy´s Equation).

. FME33	Pascal´s Module.
	Data Acquisition
- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.5 Hydraulic Demonstration

. FME09	Flow Visualization in Channels.
. FME20	Laminar Flow Demonstration.
. FME30	Vortex Flow Meter.
. FME15	Water Hammer.
. FME19	Cavitation Phenomenon Demonstration.
. FME25	Flow channel, 1 m lenght.
. FME18	Flow Meter Demonstration.
. FME17	Orifice and Free Jet Flow.
	Data Acquisition
- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.6 Pipes

. FME05	Energy Losses in Bends.
. FME07	Energy Losses in Pipes.
. FME23	Basic Pipe Network Unit.
	Data Acquisition
- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.7 Hydraulic Machines: Pumps

. FME12	Series/Parallel Pumps.
. FME13	Centrifugal Pump Characteristics.
	Data Acquisition
- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

81.8 Hydraulic Machines: Turbines

. FME27	Axial Flow Turbine.
. FME16	Pelton Turbine.
. FME28	Francis Turbine.
. FME29	Kaplan Turbine.
. FME21	Radial Flow Turbine.
	Data Acquisition
- BDAS	Basic Data Adquisition System from computer and Sensors for being used with EDIBON FME series.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

82 Fluid Mechanics. DEMONSTRATION

	Units with SCADA
- EGAC	Computer Controlled Water Hammer Unit.
	Manual Units
- BHI	Hydrostatics Bench & Fluid Properties.
- LFA	Laminar Flow Visualization and Analysis Unit.
- UVF	Hydrogen Bubble Flow Visualization Unit.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.

83 Fluid Mechanics. PIPES

	Units with SCADA
- AFTC	Computer Controlled Fluid Friction in Pipes, with Hydraulics Bench (FME00).
- AMTC	Computer Controlled Pipe Network Unit, with Hydraulics Bench (FME00).
	Manual Units
- AFT	Fluid Friction in Pipes Unit, with Hydraulics Bench (FME00).
- AFT/B	Fluid Friction in Pipes Unit, with Basic Hydraulics Feed System (FME00/B).
- AFT/P	Fluid Friction in Pipes Unit.
- AMT	Pipe Network Unit, with Hydraulics Bench (FME00).
- AMT/B	Pipe Network Unit, without Hydraulics Bench (FME00).
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID	Faults Simulation System for Fluid Mechanics.
- ELK-FLUID	EDIBON LabVIEW KIT for Fluid Mechanics.

84 Fluid Mechanics. FLOW, PRESSURE and METERS

84.1 Flow

	Units with SCADA
- HFCC	Computer Controlled Flow of Compressible Fluids Unit.
	Manual Units
- FMDU	Flow Meters Demonstration Unit.
- HECA	Air Flow Studies Unit.
	Software
- ICAI-FLUID	Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID	Faults Simulation System for Fluid Mechanics.
- ELK-FLUID	EDIBON LabVIEW KIT for Fluid Mechanics.

84.2 Pressure

- HMM	Manometers & Multimanometers (several types):
	Available Manometers & Multimanometers
- HMM-W500	U-Shape Double Manometer.
- HMM-U1000	U-Shape Manometer.
- HMM-I1000	Inclined Multimanometer with 20 manometric tubes of 250 mm lenght.
- HMM-V500	Multimanometer with 8 manometric tubes of 500 mm lenght, vertical position.
- HMM-V500-12	Multimanometer with 12 manometric tubes of 500 mm lenght, vertical position.
- HMM-4B	4 Bourdon type Manometers Unit.
- HEMP	Pressure Measurement Unit.
- HCMP	Precision Pressure Gauge Calibrator.
- TMCP	Pressure Measurement and Calibration Unit.

- SCSP — Pressure Sensors Calibration System.
- HSMAP — Air Pressure Maintained Water System Trainer.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

84.3 Viscosity

- HVB — Falling Sphere Viscometer and Drag Coefficient.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

85 Fluid Mechanics. HYDROLOGY

Units with SCADA

- PDDRC — Computer Controlled Unit for Transient Drainage Processes in Storage Reservoirs.
- ESHC(4x2m) — Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2 m).
- ESHC(2x1m) — Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1 m).

Manual Units

- ESH(2x1m) — Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1 m).

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

86 Fluid Mechanics. FLOW CHANNELS

Units with SCADA

- CFC — Computer Controlled Flow Channels (section: 80 x 300 mm). (Several lengths).
- CFGC — Computer Controlled Flow Channels (section: 300 x 450 mm). (Several lengths).

Manual Units

- CF — Flow Channels (section: 80 x 300 mm). (Several lengths).
- CFG — Flow Channels (section: 300 x 450 mm). (Several lengths).
- CAS — Sediment Transport Demonstration Channel.
- HVFLM-2 — Mobile Bed and Flow Visualisation Unit (working section: 2000x610 mm).
- HVFLM-4 — Mobile Bed and Flow Visualisation Unit (working section: 4000x610 mm).

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

87 Fluid Mechanics. HYDRAULIC MACHINES (Pumps. Turbines. Fans. Compressors)

87.1 Pumps

Units with SCADA

- PBOC — Computer Controlled Multipump Testing Bench.
- PB2C — Computer Controlled Multipump Testing Bench.
- PBCC — Computer Controlled Centrifugal Pump Bench.
- PBSPC — Computer Controlled Series/Parallel Pumps Bench.
- PBEC — Computer Controlled Gear Pump Bench.
- PBAC — Computer Controlled Axial Pump Bench.
- PBRC — Computer Controlled Piston Pump Bench.
- HMFAC — Computer Controlled Axial Flow Turbomachines Unit.

Manual Units

- PBCB — Centrifugal Pump Bench.
- PBSPB — Series/Parallel Pumps Bench.
- PBEAB — Pumps Alignement and Study Bench.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

87.2 Turbines

Hydraulic Turbines (conventional)

Units with SCADA

- TPC — Computer Controlled Pelton Turbine.
- TFC — Computer Controlled Francis Turbine.
- TKC — Computer Controlled Kaplan Turbine.

Hydraulic Turbines (special)

Units with SCADA

- TFRC — Computer Controlled Radial Flow Turbine.
- TFAC — Computer Controlled Axial Flow Turbine.
- HTRC — Computer Controlled Experimental Reaction Turbine.
- HTIC — Computer Controlled Experimental Impulse Turbine.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

87.3 Fans

Units with SCADA

- HVCC — Computer Controlled Centrifugal Fan Teaching Trainer.
- HVAC — Computer Controlled Axial Fan Teaching Trainer.

Manual Units

- HVCB — Centrifugal Fan Teaching Trainer.
- HVAB — Axial Fan Teaching Trainer.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.
- ELK-FLUID — EDIBON LabVIEW KIT for Fluid Mechanics.

87.4 Compressors

Units with SCADA

- HCCC — Computer Controlled Centrifugal Compressor Demonstration Unit.
- HCDEC — Computer Controlled Two-Stage Compressor Test Unit.
- HCRC — Computer Controlled Reciprocating Compressor Unit.

Software

- ICAI-FLUID — Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID — Faults Simulation System for Fluid Mechanics.

- ELK-FLUID EDIBON LabVIEW KIT for Fluid Mechanics.

88 Fluid Mechanics. AERODYNAMICS

Aerodynamics. BASIC

Units with SCADA

- TA50/250C Computer Controlled Aerodynamic Tunnel, 50 x 250 mm.

Manual Units

- TA50/250 Aerodynamic Tunnel, 50x250 mm.

Aerodynamics. ADVANCED

Units with SCADA

- TA1200/1200 Computer Controlled Aerodynamic Tunnel, 1200x1200 mm.
- TA500/500 Computer Controlled Water tunnel, 500x500 mm.

Software

- ICAI-FLUID Interactive Computer Aided Instruction Software System for Fluid Mechanics.
- FSS-FLUID Faults Simulation System for Fluid Mechanics.
- ELK-FLUID EDIBON LabVIEW KIT for Fluid Mechanics.

89 Additional options related with Fluid Mechanics

89.6 Fluid Mechanics. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	BDAS

89.7 Other units related with Fluid Mechanics . See sections:

- 10 - 20 - 60 - 70 - 80 - 90 - 100 - 110 - 130 - 180 - 201

90 THERMODYNAMICS & THERMOTECHNICS

91 Thermodynamics. HVAC (Refrigeration. Air Conditioning. Heat Pumps. Cooling Towers. Heating.)

91.1 Refrigeration

Refrigeration. MAIN CYCLES

Units with SCADA

- TRAC Computer Controlled Absorption Refrigeration Unit.
- TPVC Computer Controlled Vortex Tube Refrigerator Unit.

Manual Units

- TCRB Refrigeration Cycle Demonstration Unit.

Refrigeration. SPECIAL APPLICATIONS

Units with SCADA

- TRRC Computer Controlled Refrigeration Unit with Refrigeration and Freezing Chamber.
- TRCAC Computer Controlled Unit for the Study of a Refrigeration Circuit with Variable Load.
- TRCVC Computer Controlled Vapour-Compression Refrigeration Unit.
- THALAC/1 Computer Controlled Multiple Compressor Refrigeration Control.
- THARA2C/1 Computer Controlled Capacity Control Methods in Refrigeration.
- THARA2C/2 Computer Controlled Double Chamber Refrigerator Module.
- TRCC Computer Controlled Refrigeration Unit with Open Compressor.
- TCRC Computer Controlled Refrigeration Cycle Demonstration Unit.

Manual Units

- TRD2PC Two Doors Domestic Refrigeration System Trainer.

Freezers, Cooling and Ventilation

Units with SCADA

- TPCC Computer Controlled Contact Plate Freezer.
- TCPISC Computer Controlled Cooling Plant with Ice Store.
- TEVC Computer Controlled Ventilation Trainer.

Manual Units

- TRAF Water Chilled Recirculating Unit.

Refrigeration + Air Conditioning + Heat Pump

Units with SCADA

- THIBAR22C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THIBAR44C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (four condensers (water and air) and four evaporators (water and air)).
- THAR22C Computer Controlled Heat Pump, Refrigeration and Air Conditioning Unit (two condensers (water and air) and two evaporators (water and

Manual Units

- THIBAR22B Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THIBAR44B Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (four condensers (two of water and two of air) and four evaporators (two of water and two of air)).
- THAR22B Heat Pump, Refrigeration and Air Conditioning Unit (two condensers (water and air) and two evaporators (water and air)).

Refrigeration + Air Conditioning

Units with SCADA

- THAR2LC Computer Controlled Refrigeration and Air Conditioning Unit (two Condensers (water and air) and one evaporator (water)).
- THARL2C Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (water) and two evaporators (water and air)).
- THARA2C Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (air) and two evaporators (water and air)).
- THARLLC Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (water) and one evaporator (water)).
- THARALC Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (air) and one evaporator (water)).

Manual Units

- THAR2LB Refrigeration and Air Conditioning Unit (two condensers (water and air) and one evaporator (water)).
- THARL2B Refrigeration and Air Conditioning Unit (one condenser (water) and two evaporators (water and air)).
- THARA2B Refrigeration and Air Conditioning Unit (one condenser (air) and two evaporators (water and air)).
- THARLLB Refrigeration and Air Conditioning Unit (one condenser (water) and one evaporator (water)).
- THARALB Refrigeration and Air Conditioning Unit (one condenser (air) and one evaporator (water)).

Software

- ICAI-THERM Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.

- FSS-THERM Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

91.2 Air Conditioning

Air Conditioning. CYCLES

Units with SCADA

- TAAC Computer Controlled Air Conditioning Laboratory Unit.
- TARC Computer Controlled Recirculating Air Conditioning Unit.
- TAAUC Computer Controlled Automobile Air Conditioning Trainer.
- TACC Computer Controlled Air Conditioning Unit with Climatic Chamber and Water Chiller.
- TSAC Computer Controlled Air Conditioning System with Climatic Chamber.
- TSCAC Computer Controlled Air Duct Systems Unit.

Manual Units

- TAAB Air Conditioning Laboratory Unit.
- TARB Recirculating Air Conditioning Unit.
- TAAU Automobile Air Conditioning Trainer.

Air Conditioning. SEVERAL EVAPORATOR AND CONDENSER OPTIONS

Units with SCADA

- THAAAC Computer Controlled Air Conditioning Unit (one condenser (air) and one evaporator (air)).
- THALAC Computer Controlled Air Conditioning Unit (one condenser (water) and one evaporator (air)).
- THA2AC Computer Controlled Air Conditioning Unit (two condensers (water and air) and one evaporator (air)).

Manual Units

- THAAAB Air Conditioning Unit (one condenser (air) and one evaporator (air)).
- THALAB Air Conditioning Unit (one condenser (water) and one evaporator (air)).
- THA2AB Air Conditioning Unit (two condensers (water and air) and one evaporator (air)).

Software

- ICAI-THERM Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

91.3 Heat Pumps

Heat Pumps + Air Conditioning + Refrigeration

Units with SCADA

- THIBAR22C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THIBAR44C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (four condensers (water and air) and four evaporators (water and air)).

Manual Units

- THIBAR22B Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THIBAR44B Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (four condensers (two of water and two of air) and four evaporators (two of water and two of air)).

Heat Pumps (Conventional)

Units with SCADA

- THB22C Computer Controlled Heat Pump Unit (two condensers (water and air) and two evaporators (water and air)).
- THB2LC Computer Controlled Heat Pump Unit (two condensers (water and air) and one evaporator (water)).
- THBL2C Computer Controlled Heat Pump Unit (one condenser (water) and two evaporators (water and air)).
- THBA2C Computer Controlled Heat Pump Unit (one ondenser (air) and two evaporators (water and air)).
- THBLLC Computer Controlled Heat Pump Unit (one condenser (water) and one evaporator (water)).
- THBALC Computer Controlled Heat Pump Unit (one condenser (air) and one evaporator (water)).
- THB2AC Computer Controlled Heat Pump Unit (two condensers (water and air) and one evaporator (air)).
- THBLAC Computer Controlled Heat Pump Unit (one condenser (water) and one evaporator (air)).
- THBAAC Computer Controlled Heat Pump Unit (one condenser (air) and one evaporator (air)).

Manual Units

- THB22B Heat Pump Unit (two condensers (water and air) and two evaporators (water and air)).
- THB2LB Heat Pump Unit (two condensers (water and air) and one evaporator (water)).
- THBL2B Heat Pump Unit (one condenser (water) and two evaporators (water and air)).
- THBA2B Heat Pump Unit (one condenser (air) and two evaporators (water and air)).
- THBLLB Heat Pump Unit (one condenser (water) and one evaporator (water)).
- THBALB Heat Pump Unit (one condenser (air) and one evaporator (water)).
- THB2AB Heat Pump Unit (two condensers (water and air) and one evaporator (air)).
- THBLAB Heat Pump Unit (one condenser (water) and one evaporator (air)).
- THBAAB Heat Pump Unit (one condenser (air) and one evaporator (air)).

Heat Pumps (Special)

Units with SCADA

- TBTC Computer Controlled Thermo-Electric Heat Pump.

Manual Units

- TBCF Bomb Calorimeter Set for Testing Calorific Value of Fuels.

Software

- ICAI-THERM Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

91.4 Cooling Towers

Units with SCADA

- TTEC Computer Controlled Bench Top Cooling Tower.

Manual Units

- TTEB Bench Top Cooling Tower.

Software

- ICAI-THERM Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM Faults Simulation System for Thermodynamics & Thermotechnics.

- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

91.5 Heating

	Units with SCADA
- EACC	Computer Controlled Hot Water Production and Heating Teaching Unit.
	Manual Units
- TEDT	Thermal Expansion Training Unit.
- TGAC	Hot Water Generator Unit.
- TEV3V	Three-Way Mixing Valve Training Unit.
- TEV4V	Four-Way Mixing Valve Training Unit.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

92 Thermodynamics. HEAT EXCHANGERS

92.1 Modular Basic options

	Units with SCADA
- TICC	Computer Controlled Heat Exchangers Training System.
	Base Service Unit
- TIUS	Base Service Unit (Common for all available Heat Exchangers type "TI").
	Heat Exchangers
- TITC	Concentric Tube Heat Exchanger.
- TITCA	Extended Concentric Tube Heat Exchanger.
- TIPL	Plate Heat Exchanger.
- TIPLA	Extended Plate Heat Exchanger.
- TICT	Shell & Tube Heat Exchanger.
- TIVE	Jacketed Vessel Heat Exchanger.
- TIVS	Coil Vessel Heat Exchanger.
- TIFT	Turbulent Flow Heat Exchanger.
- TICF	Cross Flow Heat Exchanger.
	Manual Units
- TICB	Heat exchanger Training System.
	Base Service Unit
- TIUSB	Base Service Unit. (Common for all available Heat Exchangers type "TI..B").
	Heat Exchangers
- TITCB	Concentric Tube Heat Exchanger.
- TITCAB	Extended Concentric Tube Heat Exchanger.
- TIPLB	Plate Heat Exchanger.
- TIPLAB	Extended Plate Heat Exchanger.
- TICTB	Shell & Tube Heat Exchanger.
- TIVEB	Jacketed Vessel Heat Exchanger.
- TIVSB	Coil Vessel Heat Exchanger.
- TIFTB	Turbulent Flow Heat Exchanger.
- TICFB	Cross Flow Heat Exchanger.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

92.2 Compact options

	Units with SCADA
- TIFCC	Computer Controlled Cross Flow Heat Exchanger.
- TIAAC	Computer Controlled Water-to-Air Heat Exchanger Unit.
- TIVAC	Computer Controlled Steam to Water Heat Exchanger.
	Manual Units
- TIFCB	Cross Flow Heat Exchanger.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

93 Thermodynamics. HEAT TRANSFER

93.1 Modular Basic options

	Units with SCADA
- TSTCC	Computer Controlled Heat Transfer Series.
	Control Interface for Heat Transfer Series
- TSTCC/CIB	Control Interface for Heat Transfer Series (common for all available modules type "TXC").
	Modules
- TXC/CL	Linear Heat Conduction Module.
- TXC/CR	Radial Heat Conduction Module.
- TXC/RC	Radiation Heat Transfer Module.
- TXC/CC	Combined Free and Forced Convection and Radiation Module.
- TXC/SE	Extended Surface Heat Transfer Module.
- TXC/ER	Radiation Errors in Temperature Measurement Module.
- TXC/EI	Unsteady State Heat Transfer Module.
- TXC/LG	Thermal Conductivity of Liquid and Gas Module.
- TXC/FF	Free and Forced Convection Heat Transfer Module.
- TXC/TE	Three Axes Heat Transfer Module.
- TXC/MM	Metal to Metal Heat Transfer Module.
- TXC/TC	Ceramic Heat Transfer Module.
- TXC/TI	Insulating Material Heat Transfer Module.
	Manual Units
- TSTCB	Heat Transfer Series.
	Modules
- TXC/CLB	Linear Heat Conduction Module.
- TXC/CRB	Radial Heat Conduction Module.
- TXC/RCB	Radiation Heat Transfer Module.
- TXC/CCB	Combined Free and Forced Convection and Radiation Module.
- TXC/SEB	Extended Surface Heat Transfer Module.
- TXC/ERB	Radiation Errors in Temperature Measurement Module.
- TXC/EIB	Unsteady State Heat Transfer Module.
- TXC/LGB	Thermal Conductivity of Liquid and Gas Module.
- TXC/FFB	Free and Forced Convection Heat Transfer Module.
- TXC/TEB	Three Axes Heat Transfer Module.
- TXC/MMB	Metal to Metal Heat Transfer Module.
- TXC/TCB	Ceramic Heat Transfer Module.

- TXC/TIB	Insulating Material Heat Transfer Module.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

93.2 Compact options

	Basic Options
	Radiation
	Units with SCADA
- TRTC	Computer Controlled Thermal Radiation and Light Radiation Unit.
	Heat Conduction
- TCCC	Computer Controlled Heat Conduction Unit.
	Conductivity
- TCLGC	Computer Controlled Thermal Conductivity of Liquids and Gases Unit.
	Convection
- TCLFC	Computer Controlled Free and Forced Convection Heat Transfer Unit.
	Manual Units
- TMT	Temperature Measurement Unit.
- TEMT	Temperature Measurement Training Unit.
	Advanced Options
	Boiling
	Units with SCADA
- TCEC	Computer Controlled Boiling Heat Transfer Unit.
- TFEC	Computer Controlled Flow Boiling Demonstration Unit.
	Manual Units
- TCEB	Boiling Heat Transfer Unit.
- TFEB	Flow Boiling Demonstration Unit.
	Fluidisation
- TTLFC	Computer Controlled Fluidisation and Fluid Bed Heat Transfer Unit.
- LFFC	Computer Controlled Fixed and Fluidised Bed Unit.
	Manual Units
- TTLFB	Fluidisation and Fluid Bed Heat Transfer Unit.
- LFF	Fixed and Fluidised Bed Unit.
	Special options
	Units with SCADA
- TCPGC	Computer Controlled Film and Dropwise Condensation Unit.
- TLBGC	Computer Controlled Gas Laws Unit (Boyle and Gay-Lussac Laws).
- TFLVC	Computer Controlled Laminar/Viscous Flow Heat Transfer Unit.
- TRLC	Computer Controlled Recycle Loops Unit.
- TSPC	Computer Controlled Saturation Pressure Unit.
- TFUC	Computer Controlled Continuous and Batch Filtration Unit.
- TEPGC	Computer Controlled Expansion Processes of a Perfect Gas Unit.
- TCMC	Computer Controlled Thermal Conductivity of Building and Insulating Materials Unit.
	Manual Units
- TCPGB	Film and Dropwise Condensation Unit.
- TFLVB	Laminar/Viscous Flow Heat Transfer Unit.
- TRLB	Recycle Loops Unit.
- TFUB	Continuous and Batch Filtration Unit.
- TMCP	Pressure Measurement and Calibration Unit.
- TMHA	Air Humidity Measurement Unit.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

94 Thermodynamics. COMBUSTION. NOZZLES. STEAM

94.1 Combustion

	Units with SCADA
- TVCC	Computer Controlled Combustion Laboratory Unit.
- TVPLC	Computer Controlled Flame Propagation and Stability Unit.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

94.2 Nozzles

	Units with SCADA
- TFTC	Computer Controlled Nozzle Performance Test Unit.
	Manual Units
- TPT	Nozzle Pressure Distribution Unit.
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

94.3 Steam

	Units with SCADA
- TPTVC	Computer Controlled Steam Power Plant.
- TCESC	Computer Controlled Separating and Throttling Calorimeter.
- TECMC	Computer Controlled Marcet Boiler Unit.
- TEGVC	Computer Controlled Steam Generation Unit.
	Manual Units
- TGV	Steam Generator (3 kW).
- TGV/6KW	Steam Generator (6 kW).
- TGV-6KWA	Steam Generator (6 kW) (for high pressures and high temperatures).
	Software
- ICAI-THERM	Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM	Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM	EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

95 Thermodynamics. ENGINES TEST BENCHES. GENERATORS. CALORIMETERS.

95.1 Engines Test Benches

Units with SCADA

- TBMC3 — Computer Controlled Test Bench for Single-Cylinder Engines, 2.2 kW.
- TBMC8 — Computer Controlled Test Bench for Single-Cylinder Engines, 7.5 kW.
- TBMC12 — Computer Controlled Test Bench for Single-Cylinder and Two-Cylinders Engines, 11 kW.
- TBMC75 — Computer Controlled Test Bench for Four-Cylinders Engines, 75 kW.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

95.2 Hybrid Test Benches

Units with SCADA

- TMHC — Computer Controlled Test Bench for Hybrid Engine.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

95.3 Generators

Units with SCADA

- TMSC — Computer Controlled Stirling Motor.
- TORC — Computer Controlled Organic Rankine Cycle Unit.
- TDEGC — Computer Controlled Diesel Engine Electricity Generator.

Manual Units

- TMSB — Stirling Motor.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

95.4 Calorimeters

Units with SCADA

- TBMC-CG — Computer Controlled Exhaust Gas Calorimeter.

Manual Units

- TBMC-AGE — Exhaust Gas Analyzer.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

96 Thermodynamics. THERMAL TURBINES

Units with SCADA

- TGDEC — Computer Controlled Two -Shaft Gas Turbine.
- TGDEPC — Computer Controlled Two-Shaft Gas Turbine/ Jet Engine.
- TGFAC — Computer Controlled Axial Flow Gas Turbine/ Jet Engine.
- TTVC — Computer Controlled Steam Turbine.
- HTVC — Computer Controlled Solar/Heat Source Vapour Turbine.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

97 Thermodynamics. OIL EXTRACTION

Units with SCADA

- EOEUC — Computer Controlled Oil Extraction Unit.
- EFEUC — Computer Controlled Fracking Extraction Unit.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

98 Thermodynamic. SANITARY

- TEIS — Sanitary Fittings Training Unit.
- TIAP — Drinking Water Installation Unit.
- TPAP — Protection of Drinking Water Training Unit.
- TELT — Pipe Cleaning Training Unit.
- TSID — Sewerage System Unit.

Software

- ICAI-THERM — Interactive Computer Aided Instruction Software System for Thermodynamics & Thermotechnics.
- FSS-THERM — Faults Simulation System for Thermodynamics & Thermotechnics.
- ELK-THERM — EDIBON LabVIEW KIT for Thermodynamics & Thermotechnics.

99 Additional options related with Thermodynamics & Thermotechnics

99.6 Thermodynamics & Thermotechnics. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

99.7 Other units related with Thermodynamic & Thermotechnics . See sections:

- 10 - 20 - 40 - 50 - 60 - 70 - 80 - 100 - 110 - 120 - 180 - 201

100 PROCESS CONTROL

101 Process Control. FUNDAMENTALS

101.1 General Concepts

- RYC — Computer Controlled Teaching Unit for the Study of Regulation and Control.
- SAIT — Transducers and Instrumentation Trainer.
- BS — Modular System for the Study of Sensors:

Base Units

. BSPC — Computer Controlled Basic Unit.
. BSUB — Basic Unit.

Test Modules

. BS1	Vibrations and/or Deformations Test Module.
. BS2	Temperature Test Module.
. BS3	Pressure Test Module.
. BS4	Flow Test Module.
. BS5	Ovens Test Module.
. BS6	Liquid level Test Module.
. BS7	Tachometer Test Module.
. BS8	Proximity Test Module.
. BS9	Pneumatic Test Module.
. BS10	Light Test Module.

Software

- ICAI-PROCESS	Interactive Computer Aided Instruction Software System for Process Control.
- FSS-PROCESS	Faults Simulation System for Process Control.
- ELK-PROCESS	EDIBON LabVIEW KIT for Process Control.

101.2 Sensors and Loops

With Electronic Control Valve

- UCP	Computer Controlled Process Control System (with electronic control valve).
. UCP-UB	Base Unit. (Common for all Sets for process control type "UCP").

Sets (sensor and elements + computer control software) used with base unit

. UCP-T	Set for Temperature Process Control.
. UCP-P	Computer Controlled Process Control Unit for the study of Pressure (Air).
. UCP-N	Set for Level Process Control.
. UCP-PA	Set for Water Pressure Process Control.
. UCP-PH	Set for pH Process Control.
. UCP-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control.

With Pneumatic Control Valve

- UCPCN	Computer Controlled Process Control System (with pneumatic control valve).
. UCPCN-UB	Base Unit (Common for all sets for process control type "UCPCN").

Sets (sensor and elements + computer control software) used with base unit

. UCPCN-T	Set for Temperature Process Control.
. UCPCN-C	Set for Flow Process Control.
. UCPCN-N	Set for Level Process Control.
. UCPCN-PA	Set for Water Pressure Process Control.
. UCPCN-PH	Set for pH Process Control.
. UCPCN-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control.

With Speed Controller

- UCPCV	Computer Controlled Process Control System (with speed controller).
. UCPCV-UB	Base Unit. (Common for all Sets for process control type "UCPCV").

Sets (sensor and elements + computer control software) used with base unit

. UCPCV-T	Set for Temperature Process Control.
. UCPCV-C	Set for Flow Process Control.
. UCPCV-N	Set for Level Process Control.
. UCPCV-PA	Set for Pressure Process Control.
. UCPCV-PH	Set for pH Process Control.
. UCPCV-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control.

With Electronic Control Valve + Pneumatic Control Valve + Speed Controller

- UCPCNCV	Computer Controlled Process Control System (with electronic control valve+pneumatic control valve+speed controller), formed by:
. UCPCNCV-UB	Base Unit (Common for all Sets for process control type "UCPCNCV").

Sets (sensor and elements + computer control software) used with base unit

. UCPCNCV-T	Set for Temperature Process Control.
. UCPCNCV-C	Set for Flow Process Control.
. UCPCNCV-N	Set for Level Process Control.
. UCPCNCV-PA	Set for Water Pressure Process Control.
. UCPCNCV-PH	Set for pH Process Control.
. UCPCNCV-CT	Set for Conductivity and TDS (Total dissolved solids) Process Control.

Pneumatic Control

- UCP-P	Computer Controlled Process Control Unit for the study of Pressure (Air).

Faults Finding

- CBFSC	Computer Controlled Fault Finding in Control Systems Unit.

Software

- ICAI-PROCESS	Interactive Computer Aided Instruction Software System for Process Control.
- FSS-PROCESS	Faults Simulation System for Process Control.
- ELK-PROCESS	EDIBON LabVIEW KIT for Process Control.

101.3 Applications

Units with SCADA

- CTAC	Computer Controlled Coupled Tanks System.
- CMDVC	Computer Controlled Multivariable Control Unit for Vaccum Degassing.
- CMDAC	Computer Controlled Multivariable Control Unit for Stirrer Tank.

Software

- ICAI-PROCESS	Interactive Computer Aided Instruction Software System for Process Control.
- FSS-PROCESS	Faults Simulation System for Process Control.
- ELK-PROCESS	EDIBON LabVIEW KIT for Process Control.

101.4 Controllers and Field Bus

- CECI	Industrial Controllers Trainer.
- CRCI	Industrial Controllers Networking.
- CEAB	Trainer for Field Bus Applications.
- CEAC	Controller Tuning Trainer.

102 Process Control. INDUSTRIAL PROCESS CONTROL

Units with SCADA

- CPIC	Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (Flow, Temperature, Level and Pressure).
- CPIC-C	Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (only Flow).
- CPIC-T	Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (only Temperature).
- CPIC-N	Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (only Level).
- CPIC-P	Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (only Pressure).

Software

- ICAI-PROCESS	Interactive Computer Aided Instruction Software System for Process Control.
- FSS-PROCESS	Faults Simulation System for Process Control.
- ELK-PROCESS	EDIBON LabVIEW KIT for Process Control.

109 Additional options related with Process Control

109.6 Process Control. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

109.7 Other units related with Process Control . See sections:

- 10 - 20 - 40 - 50 - 60 - 70 - 80 - 90 - 110 - 120 - 130 - 140 - 180 - 201

110 CHEMICAL ENGINEERING

111 Chemical Engineering. BASIC UNIT OPERATIONS

111.1 Distillation

Units with SCADA

- UDCC — Computer Controlled Continuous Distillation Unit.
- UDDC — Computer Controlled Batch Distillation Unit.

Manual Units

- UDCB — Continuous Distillation Unit.
- UDDB — Batch Distillation Unit.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

111.2 Absorption

Units with SCADA

- CAGC — Computer Controlled Gas Absorption Column.
- CAPC — Computer Controlled Wetted Wall Gas Absorption Column.

Manual Units

- CAG — Gas Absorption Column.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

111.3 Evaporation

Units with SCADA

- EPAC — Computer Controlled Rising Film Evaporator.
- EPDC — Computer Controlled Falling Film Evaporator. (Accessory to EPAC).
- EPDC/C — Computer Controlled Falling Film Evaporator.
- EDPAC — Computer Controlled Double Effect Rising Film Evaporator.
- EDPDC — Computer Controlled Double Effect Falling Film Evaporator. (Accessory to EDPAC).
- EPFC — Computer Controlled Thin Film Evaporator.

Manual Units

- EPAB — Rising Film Evaporator.
- EPDB — Falling Film Evaporator (Accessory for EPAB).
- EDPAB — Double Effect Rising Film Evaporator.
- EDPDB — Double Effect Falling Film Evaporator. (Accessory for EDPAB).

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

111.4 Extraction

Units with SCADA

- UELLC — Computer Controlled Liquid-Liquid Extraction Unit.
- UESLC — Computer Controlled Solid-Liquid Extraction Unit.

Manual Units

- UELL — Liquid-Liquid Extraction Unit.
- UESLB — Solid-Liquid Extraction Unit.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

112 Chemical Engineering. GENERAL UNIT OPERATIONS

112.1 Mass Transfer

Units with SCADA

- QDTLC — Computer Controlled Liquid Mass Transfer and Diffusion Coefficient Unit.
- QDTGC — Computer Controlled Gaseous Mass Transfer and Diffusion Coefficient Unit.
- TTEC — Computer Controlled Bench Top Cooling Tower.

Manual Units

- QDTL — Liquid Mass Transfer and Diffusion Coefficient Unit.
- QDTG — Gaseous Mass Transfer and Diffusion Coefficient Unit.
- TTEB — Bench Top Cooling Tower.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

112.2 Adsorption

Units with SCADA

- QALFC — Computer Controlled Fixed Bed Adsorption Unit.
- QSAC — Computer Controlled Adsorptive Air Drying Unit.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

112.3 Physical Processes

Units with SCADA

- QCCC — Computer Controlled Cracking Column.
- QUCC — Computer Controlled Crystallization Unit.

Manual Units

- QUCB — Crystallization Unit.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

113 Chemical Engineering. CHEMICAL REACTORS

113.1 Modular and Big Reactors

Units with SCADA

- QRQC Computer Controlled Chemical Reactors Training System.

Base Service Unit (common for the Chemical Reactors)

- QRUBI Base-Service Unit.

Chemical Reactors Available

- QRIA Isothermal Reactor with Stirrer.
- QRIA/D Isothermal Reactor with Stirrer and Distillation.
- QRFT Tubular Flow Reactor.
- QRAD Adiabatic and Isothermal Reactor.
- QRSA Reactors with Stirrer in Series.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

113.2 Modular and Small Reactors

Units with SCADA

- QRC Computer Controlled Chemical Reactors Trainer.

Service Unit (common for the Chemical Reactors)

- QUSC Service Unit.

Chemical Reactors Available

- QRCAC Continuous Stirred Tank Reactor.
- QRTC Tubular Flow Reactor.
- QRDC Batch Reactor.
- QRSC Stirred Tank Reactors in Series.
- QRLC Laminar Flow Reactor.
- QRPC Plug Flow Reactor.

Manual Units

- QR Chemical Reactors Trainer.

Service Unit (common for the Chemical Reactors)

- QUS Service Unit.

Chemical Reactors Available

- QRCA Continuous Stirred Tank Reactor.
- QRT Tubular Flow Reactor.
- QRD Batch Reactor.
- QRS Stirred Tank Reactors in Series.
- QRL Laminar Flow Reactor.
- QRP Plug Flow Reactor.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

113.3 Compact Reactors

Units with SCADA

- QRCC Computer Controlled Catalytic Reactors.
- QREC Computer Controlled Batch Enzyme Reactor.
- QRALC Computer Controlled Airlift Reactor.

Manual Units

- QRCB Catalytic Reactors.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

114 Chemical Engineering. CHEMICAL PROCESS

114.1 Physical-Chemical Process

Units with SCADA

- QCDIC Computer Controlled Disc Centrifuge.
- PSMC Computer Controlled Magnetic Separation Unit.

Manual Units

- EMLS Liquid/Solid Mixing Unit.
- EEC Corrosion Study Unit.
- ESED Sedimentation Study Unit.
- QMS Solids Handling Study Unit.
- EII Ion Exchange Unit.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

114.2 Filtering

Units with SCADA

- TFUC Computer Controlled Continuous and Batch Filtration Unit.
- EFLPC Computer Controlled Deep Bed Filter Unit.
- PFTC Computer Controlled Drum Cell Filter.

Manual Units

- TFUB Continuous and Batch Filtration Unit.
- EFLP Deep Bed Filter Unit.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

114.3 Solvent

Units with SCADA

- QEDC Computer Controlled Batch Solvent Extraction and Desolventising Unit.

Software

- ICAI-CHEM Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM Faults Simulation System for Chemical Engineering.
- ELK-CHEM EDIBON LabVIEW KIT for Chemical Engineering.

114.4 Heat Transfer

Units with SCADA

- LFFC — Computer Controlled Fixed and Fluidised Bed Unit.
- TCEC — Computer Controlled Boiling Heat Transfer Unit.
- TFEC — Computer Controlled Flow Boiling Demonstration Unit.
- TTLFC — Computer Controlled Fluidisation and Fluid Bed Heat Transfer Unit.

Manual Units

- LFF — Fixed and Fluidised Bed Unit.
- TCEB — Boiling Heat Transfer Unit.
- TFEB — Flow Boiling Demonstration Unit.
- TTLFB — Fluidisation and Fluid Bed Heat Transfer Unit.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

114.5 Food Technology

Units with SCADA

- SBANC — Computer Controlled Tray Drier.
- SSPC — Computer Controlled Spray Drier.

Manual Units

- SSPB — Spray Drier.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

114.6 Environment

Units with SCADA

- PLGC — Computer Controlled Gas Washing Processing Plant.
- PPDAC — Computer Controlled Water Demineralization and Processing Plant.
- EPIRC — Computer Controlled Pyrolysis Unit.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

115 Chemical Engineering. MASS TRANSFER

- TTEC — Computer Controlled Bench Top Cooling Tower.

Software

- ICAI-CHEM — Interactive Computer Aided Instruction Software System for Chemical Engineering.
- FSS-CHEM — Faults Simulation System for Chemical Engineering.
- ELK-CHEM — EDIBON LabVIEW KIT for Chemical Engineering.

119 Additional options related with Chemical Engineering

119.6 Chemical Engineering. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

119.7 Other units related with Chemical Engineering . See sections:

- 20 - 30 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 120 - 130 - 180 - 201

120 FOOD & WATER TECHNOLOGIES

121 Food Technology. UNIT OPERATIONS

121.1 Basic Units Operations

Pasteurizers

Units with SCADA

- PADC — Computer Controlled Teaching Autonomous Pasteurization Unit.
- PASC — Computer Controlled Laboratory Pasteuriser.

Driers

Units with SCADA

- SBANC — Computer Controlled Tray Drier.
- SSPC — Computer Controlled Spray Drier.

Manual Units

- SSPB — Spray Drier.

Miscellaneous

- ROUC — Computer Controlled Reverse Osmosis/Ultrafiltration Unit.
- VPMC — Computer Controlled Multipurpose Processing Vessel.
- TPCC — Computer Controlled Contact Plate Freezer.

Software

- ICAI-FOOD — Interactive Computer Aided Instruction Software System for Food & Water Technologies.
- FSS-FOOD — Faults Simulation System for Food & Water Technologies.
- ELK-FOOD — EDIBON LabVIEW KIT for Food & Water Technologies.

121.2 General Pilot Plants

Units with SCADA

- AEHC — Computer Controlled Hydrogenation Unit.
- AEDC — Computer Controlled Deodorizing Unit.
- TFDC — Computer Controlled Teaching Frigorific Tank.
- EDLC — Computer Controlled Teaching Unit for Packing Liquids.
- EDSC — Computer Controlled Teaching Machine for Putting into a Container Solids.
- QEDC — Computer Controlled Batch Solvent Extraction and Desolventising Unit.
- AFPMC — Computer Controlled Plate and Frame Filter Press.

Manual Units

- MINI-LAB — Laboratory Homogeniser.

Software

- ICAI-FOOD — Interactive Computer Aided Instruction Software System for Food & Water Technologies.
- FSS-FOOD — Faults Simulation System for Food & Water Technologies.
- ELK-FOOD — EDIBON LabVIEW KIT for Food & Water Technologies.

122 Food Technology. MILK PROCESS

Units with SCADA

- DSNC — Computer Controlled Teaching Cream Separator.

- EMANC	Computer Controlled Butter Maker Teaching Unit.
- PADC	Computer Controlled Teaching Autonomous Pasteurization Unit.
- PASC	Computer Controlled Laboratory Pasteuriser.
- AUHTC	Computer Controlled UHT Unit.
- CCDC	Computer Controlled Teaching Curdling Tank.
- PVQC	Computer Controlled Teaching Cheese Press.
- IYDC	Computer Controlled Teaching Yogurt Incubator.
- RDC	Computer Controlled Teaching Cottage Cheese Maker.
- AEQC	Computer Controlled Cheese Vat.
- FQDC	Computer Controlled Teaching Cheese Melter.
Manual Units	
- DSN	Teaching Cream Separator.
- EMAN	Butter Maker Teaching Unit.
Software	
- ICAI-FOOD	Interactive Computer Aided Instruction Software System for Food & Water Technologies.
- FSS-FOOD	Faults Simulation System for Food & Water Technologies.
- ELK-FOOD	EDIBON LabVIEW KIT for Food & Water Technologies.

123 Food Technology. OIL PROCESS

Units with SCADA	
- PACC	Computer Controlled Continuous Cycle Oil Production Plant.
Software	
- ICAI-FOOD	Interactive Computer Aided Instruction Software System for Food & Water Technologies.
- FSS-FOOD	Faults Simulation System for Food & Water Technologies.
- ELK-FOOD	EDIBON LabVIEW KIT for Food & Water Technologies.

124 Food Technology. PILOT PLANTS

- LE00	Process Plant for Dairy Products with Scada-Net System "ESN".
- CA00	Process Plant for Meat with Scada-Net System "ESN".
- CI00	Process Plant for Citrus Fruits with Scada-Net System "ESN".
- FR00	Process Plant for Fruits with Scada-Net System "ESN".
- VE00	Process Plant for Vegetables with Scada-Net System "ESN".
- AS00	Process Plant for Seeds Oil with Scada-Net System "ESN".
- AC00	Process Plant for Olive Oil with Scada-Net System "ESN".
- TO00	Process Plant for Tomatoes with Scada-Net System "ESN".
- UV00	Process Plant for Grapes with Scada-Net System "ESN".
- CE00	Process Plant for Cereals with Scada-Net System "ESN".

129 Additional options related with Food Technology

129.6 Food Technology. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

129.7 Other units related with Food Technology . See sections:

- 20 - 50 - 60 - 70 - 80 - 90 - 100 - 110 - 180 - 190 - 201

130 ENVIRONMENT

131 Environment. WATER HANDLING

131.1 Hydrology

Units with SCADA	
- ESHC(4x2m)	Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2 m).
- ESHC(2x1m)	Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1 m).
- PDFDC	Computer Controlled Drainage and Seepage Tank.
- PDDRC	Computer Controlled Unit for Transient Drainage Processes in Storage Reservoirs.
Manual Units	
- ESH(2x1m)	Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1 m).
- PDFD	Drainage and Seepage Tank.
- HVFLM-2	Mobile Bed and Flow Visualisation Unit (working section: 2000x610 mm).
- HVFLM-4	Mobile Bed and Flow Visualisation Unit (working section: 4000x610 mm).
- PTSA	Soil/Water Model Tank.
- EFAS	Ground Water Flow Unit.
Software	
- ICAI-ENVIRON	Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON	Faults Simulation System for Environment.
- ELK-ENVIRON	EDIBON LabVIEW KIT for Environment.

131.2 Moisture

Units with SCADA	
- PAHSC	Computer Controlled Soil Moisture Suction Sand Unit.
Manual Units	
- PAHS	Soil Moisture Suction Sand Unit.
- PL	Demonstration Lysimeter.
- PPD	Drain Permeameter.
- PEIF	Filterability Index Unit.
- PEFP	Permeability/Fluidisation Studies Unit.
- PEDI	Demonstration Infiltration Unit.
Software	
- ICAI-ENVIRON	Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON	Faults Simulation System for Environment.
- ELK-ENVIRON	EDIBON LabVIEW KIT for Environment.

131.3 Sedimentation

Units with SCADA	
- PDSC	Computer Controlled Sedimentation Tank.
Manual Units	
- PDS	Sedimentation Tank.
- ESED	Sedimentation Study Unit.
Software	
- ICAI-ENVIRON	Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON	Faults Simulation System for Environment.

- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

132 Environment. WATER TREATMENT

132.1 Digesters

Units with SCADA

- PDAC Computer Controlled Aerobic Digester.
- PDANC Computer Controlled Anaerobic Digester.

Manual Units

- PDA Aerobic Digester.
- PDAN Anaerobic Digester.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

132.2 Flocculation and Aeration

Units with SCADA

- PEFC Computer Controlled Flocculation Test Unit.
- PEAIC Computer Controlled Aeration Unit.

Manual Units

- PEF Flocculation Test Unit.
- PEAI Aeration Unit.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

132.3 Water Treatment Unit Operations

Units with SCADA

- EFLPC Computer Controlled Deep Bed Filter Unit.
- ROUC Computer Controlled Reverse Osmosis/Ultrafiltration Unit.
- PCCAC Computer Controlled Water Quality Control Unit.
- POAC Computer Controlled Advanced Oxidation Unit.
- PEAC Computer Controlled Adsorption Unit.

Manual Units

- EFLP Deep Bed Filter Unit.
- EII Ion Exchange Unit.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

132.4 Water Treatment Plants

Units with SCADA

- PPDAC Computer Controlled Water Demineralization and Processing Plant.
- PPTAC/1 Computer Controlled Water Treatment Plant 1.
- PPTAC/2 Computer Controlled Water Treatment Plant 2.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

132.5 Dirty Water

Units with SCADA

- PFADC Computer Controlled Dissolved Air Flotation Unit.
- PPFAC Computer Controlled Activated Sludge Process Unit.
- PPBC Computer Controlled Biofilm Process Unit.
- PHCC Computer Controlled Hydrocylone.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

133 Environment. POLLUTION

133.1 Ground Pollution

Units with SCADA

- ECASC Computer Controlled Subterranean Water Pollution Unit.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

133.2 Air Pollution

- PSNC Computer Controlled Gas Flow Classification Unit.
- PSMC Computer Controlled Magnetic Separation Unit.
- PCGC Computer Controlled Gas Cyclone.
- PFTC Computer Controlled Drum Cell Filter.
- PLGC Computer Controlled Gas Washing Processing Plant.
- EPIRC Computer Controlled Pyrolysis Unit.
- TVCC Computer Controlled Combustion Laboratory Unit.
- TVPLC Computer Controlled Flame Propagation and Stability Unit.

Software

- ICAI-ENVIRON Interactive Computer Aided Instruction Software System for Environment.
- FSS-ENVIRON Faults Simulation System for Environment.
- ELK-ENVIRON EDIBON LabVIEW KIT for Environment.

139 Additional options related with Environment

139.6 Environment. EXPANSIONS

PLC	ESN	ECL	EWB
ELK	ICAI	FSS	

139.7 Other units related with Environment . See sections:

- 23 - 50 - 60 - 72 - 78 - 80 - 90 - 100 - 110 - 180 - 190 - 201

140 BIOMEDICAL ENGINEERING

141 Biomedical. BIOMEDICAL APPLICATION

Units with SCADA

- BIADC Computer Controlled Biomedical Auditory and Diagnostic Teaching Unit.

- BIUTEC	Computer Controlled Biomedical Ultrasound Thermal Effects Teaching Unit.
- BIHBPC	Computer Controlled Biomedical Human Biosignals and Parameters Teaching Unit.
- BICSC	Computer Controlled Biomedical Circulatory System Teaching Unit.
- BISBC	Computer Controlled Biomedical Spirometry and Breath Teaching Unit.
- BIERC	Computer Controlled Biomedical Electric Response Teaching Unit.
	Manual Units
- BIMAG	Biomedical Magnetotherapy Teaching Unit.
- BIMTE	Biomedical Microwave Thermal Effects Teaching Unit.
- BIPBS	Biomedical Patient Biosignals Simulator.
- QRCB-IF	Flow Injection Analysis (FIA) Unit.
- BLIO	Freeze Dryer.
	Software
- ICAI-BIOMED	Interactive Computer Aided Instruction Software System for Biomedical Engineering.
- FSS-BIOMED	Faults Simulation System for Biomedical Engineering.
- ELK-BIOMED	EDIBON LabVIEW KIT for Biomedical Engineering.

142 Biomedical. BIOMEDICAL ENGINEERING CONCEPTS

See complete laboratory 14HE and 14TV

143 Biomedical. BIOMECHANICS

144 Biomedical. INDUSTRIAL BIOMEDICAL WITH SCADA

	Units with SCADA
- BIEV	Computer Controlled Steam Sterilizer.
	Software
- ICAI-BIOMED	Interactive Computer Aided Instruction Software System for Biomedical Engineering.
- FSS-BIOMED	Faults Simulation System for Biomedical Engineering.
- ELK-BIOMED	EDIBON LabVIEW KIT for Biomedical Engineering.

149 Additional options related with Biomedical Engineering

149.6 Biomedical Engineering. EXPANSIONS

PLC ESN ECL EWB
ELK ICAI FSS

149.7 Other units related with Biomedical Engineering . See sections:

- 10 - 20 - 40 - 50 - 60 - 70 - 80 - 90 - 100 - 110

180 GENERAL APPLICATIONS SYSTEM

181 EDIBON Scada-Net Systems

- ESN	EDIBON Scada-Net Systems.

The ESN can be used with units using SCADA of only one area or units using SCADA from several areas

182 EDIBON Cloud Learning

- ECL	EDIBON Cloud Learning.

Application with all EDIBON units using SCADA

183 LabVIEW Kits

- ELK	EDIBON LabVIEW KIT.

Used with all EDIBON units usiong SCADA

184 USB Kits

- EUK	EDIBON USB KIT.

Replace any computer when using SCADA

189 Additional options related with General Applications System

189.6 General Applications System. EXPANSIONS

189.7 Other units related with General Applications System . See sections:

- 10 - 20 - 30 - 40 - 50 - 70 - 80 - 90 - 100 - 110 - 120 - 130 - 140

190 PILOT PLANTS

110 CHEMICAL ENGINEERING

114.3 Solvent

- QEDC	Computer Controlled Batch Solvent Extraction and Desolventising Unit.

120 FOOD & WATER TECHNOLOGIES

121.1 Basic Units Operations

- PADC	Computer Controlled Teaching Autonomous Pasteurization Unit.

121.2 General Pilot Plants

- AEHC	Computer Controlled Hydrogenation Unit.
- AEDC	Computer Controlled Deodorizing Unit.
- TFDC	Computer Controlled Teaching Frigorific Tank.
- EDLC	Computer Controlled Teaching Unit for Packing Liquids.
- EDSC	Computer Controlled Teaching Machine for Putting into a Container Solids.
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- AFPMC	Computer Controlled Plate and Frame Filter Press.
- MINI-LAB	Laboratory Homogeniser.

123 Food Technology. OIL PROCESS

- PACC	Computer Controlled Continuous Cycle Oil Production Plant.

124 Food Technology. PILOT PLANTS

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- UV00	Process Plant for Grapes with Scada-Net System "ESN".
- CE00	Process Plant for Cereals with Scada-Net System "ESN".

200 SOFTWARE PACKAGES

201 Software Packages

- ICAI	Interactive Computer Aided Instruction Software System.
- FSS	Faults Simulation System.

202 Special Software Packages used with:

202.1 Strength of Materials. PHOTOELASTICITY (Traction, Flexion, Torsion, Bending, etc)

Special Software

- EFOC	Photoelasticity Unit with Strain Gauges Measurements System.

202.2 Energy. SMART GRID AND POWER SYSTEMS

Hybrid Software

- APS12	Advanced Mechanical, Electrical and Smart Grid Power Systems (Utilities).

Products List
Units

100%, own Design and own Manufacturing

Complete Laboratories

PHYSICS
- 1SE. Secondary Education
- 1AD. Advanced Physics Laboratory

ELECTRONICS
- 2TV. Technical and Vocational Education Electronics Laboratory
- 2HE. Higher Education Electronics Laboratory

COMMUNICATIONS
- 3TV. Technical and Vocational Education Telecommunications Laboratory
- 3HE. Higher Education Telecommunications Laboratory

ELECTRICITY
- 4TV. Technical and Vocational Education Electricity Laboratory
- 4HE. Higher Education Electricity Laboratory

ENERGY
- 5TV. Technical and Vocational Education Energy Laboratory
- 5HE. Higher Education Energy Laboratory
- 5TC. Energy Training Center
- 5RTV. Technical and Vocational Education Renewable Energy Laboratory
- 5RHE. Higher Education Renewable Energy Laboratory

MECHATRONICS & COMPUMECHATRONICS
- 6TV. Technical and Vocational Education Automation and Systems Laboratory
- 6HE. Higher Education Automation and Systems Laboratory

MECHANICS
- 7TV. Technical and Vocational Education Mechanics and Materials Laboratory
- 7HE. Higher Education Mechanics and Materials Laboratory

FLUID MECHANICS
- 8TV. Technical and Vocational Education Fluid Mechanics Laboratory
- 8HE. Higher Education Fluid Mechanics Laboratory

THERMODYNAMICS & THERMOTECHNICS
- 9TV. Technical and Vocational Education Thermodynamics and Thermotechnics Laboratory
- 9HE. Higher Education Thermodynamics and Thermotechnics Laboratory

PROCESS CONTROL
- 10TV. Technical and Vocational Education Process Control Laboratory
- 10HE. Higher Education Process Control Laboratory
- 10PCTC. Process Control and Maintenance Training Center
- 10RC. Regulation, Control and Process Control Laboratory

CHEMICAL ENGINEERING
- 11TV. Technical and Vocational Education Chemical Engineering Laboratory
- 11HE. Higher Education Chemical Engineering Laboratory
- 11PTC. Petroleum Training Center

FOOD & WATER TECHNOLOGIES
- 12TV. Technical and Vocational Education Food Technology Laboratory
- 12HE. Higher Education Food Technology Laboratory
- 12PP. Food Technology Pilot Plants

ENVIRONMENT
- 13TV. Technical and Vocational Education Environment Laboratory
- 13HE. Higher Education Environment Laboratory

Turn-Key Projects with Edibon Soft Financing

- For Higher Technical Education, Public and Private Institutions, Universities, Institutes of Technology, Engineering Schools, etc ...
- Technical and Vocational Training Centers

Custom made Units