

100% own Design
and own
Manufacturing

Units

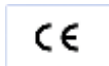
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**TOP and UNIQUE
TECHNOLOGY**

1. DAY BY DAY MODEL (D/D)	2. PROJECTS AND COMPLETE LABORATORIES	3. TECHNICAL EDUCATION TURN-KEY PROJECTS
4. EDIBON CLOUD LEARNING (ECL)	5. PILOT PLANTS AND CUSTOM MADE UNITS	6. COURSES



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

100% own Design
and own
Manufacturing

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

ELK= EDIBON Software Development KIT, Powered by NI LabVIEW™

Industrial SCADA Expansions

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

2.- AIDED Software:

ICAI= Interactive Computer Aided Instruction Software System (for "ANY" EDIBON unit)

FSS= Faults Simulation System (for any unit with SCADA)

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

21.6.- Control

22.- Electronics. KITS

22.1.- Service Units

22.2.- Basic Electronic Concepts

22.3.- Digital Electronics

22.4.- Basic Electricity Concepts

23.- Electronics. TRANSDUCERS AND SENSORS

24.- Electronics. CONTROL ELECTRONICS

25.- Electronics. DIGITAL ELECTRONICS

26.- Electronics. INDUSTRIAL ELECTRONICS

30.- COMMUNICATIONS

31.- Communications. ANALOG COMMUNICATIONS

32.- Communications. DIGITAL COMMUNICATIONS

33.- Communications. TELEPHONY

34.- Communications. APPLIED COMMUNICATIONS

35.- Communications. WI-FI

40.- ELECTRICITY

41.- Electricity. ELECTRICAL INSTALLATIONS

41.1.- AEL-1.1. Home Electrical Installations

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

43.1.1.- Control Data Acquisition and Software

43.2.- Motors (only motors)

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

44.1.- AEL-4.1. Transformers Construction

44.2.1.- Cut Away Electrical Motors

44.2.2.- Transparent and Functional Electrical Motors

44.3.- Constructions: Applications

45.1.- AEL-5.1. Generation Applications

45.2.- AEL-5.2. Distribution and Transmission Applications

45.3.- AEL-5.3. Loads Applications

45.4.- AEL-5.4. Protection Relays Applications

45.5.- AEL-5.5. Cybersecurity Applications

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

46.- Electricity. ALL ELECTRICITY MODULES AVAILABLE

50.- ENERGY

51.- Energy. SMART GRID AND POWER SYSTEMS

52.- Energy. GRIDS

52.1.- Cybersecurity

52.2.- Mechanical Generators

52.3.- Micro Grid Power System

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

57.5.- Fuell Cells

57.6.- Biofuells

57.7.- Sea

57.8.- Geothermal

58.- Energy. SAVING ENERGY

58.1.- Energy Utilization

58.2.- Energy Generation

60.- MECHATRONICS, AUTOMATION & COMPUMECHATRONICS

61.- Mechatronics. MECHATRONICS

61.1.- Control

61.1.1.- Theoretical-Practical Fundamentals

61.1.2.- Industrial System Applications

61.1.3.- Industrial Controllers

61.2.- Electronics

61.2.1.- Sensors & Electronic Instrumentation

61.2.2.- Power & Industrial Electronics

61.3.1.- Pneumatics

61.3.2.- Hydraulics

62.- Mechatronics. PLC AUTOMATION

62.1.- PLC Options

62.1.1.- AE-PLC

62.2.1.- Traffic & Parking

62.2.2.- Small Industrial Machines

62.2.3.- Small Industrial Systems

62.2.4.- Big Industrial System

62.2.5.- Simple Control Applications

62.2.6.- Industrial Control Applications

62.2.7.- Thermal Applications

62.2.8.- Electrical Machines Control

62.2.9.- Alarms / Current

62.3.- Instrumentation & Control

62.4.- PLC Workstations Applications

62.4.1.- Pieces Feeding Workstations Applications

62.4.2.- Processing Workstations Applications

62.4.3.- Rotary Table Workstations Applications

62.4.4.- Pieces Manipulator Workstations Applications

62.4.5.- Robotic Workstations Applications

62.4.6.- Pieces Identification Workstations Applications

62.4.7.- CNC Workstations Applications

62.4.8.- Storing Workstations Applications

62.5.- Industrial Applications

62.5.1.- Control Applications

62.5.2.- Renewable Energy Applications

62.5.3.- Power Applications

62.5.4.- Smart Grid Applications

62.6.- Flexible Manufacturing Systems (FMS)

62.6.1.- Systems

62.6.2.- Automation Software

63.- Mechatronics.PLC COMPUMECHATRONICS

63.1.- Electricity

63.10.- Environment

63.11.- Process Control

Products List Units

 100% own Design and
own Manufacturing

<p>63.2.- Energy</p> <p>63.3.- Renewable</p> <p>63.4.- Saving Energy</p> <p>63.5.- Mechanics</p> <p>63.6.- Fluid Mechanics</p> <p>63.7.- Thermodynamics & Thermotechnics</p> <p>63.8.- Chemical Engineering</p> <p>63.9.- Food & Water Technologies</p> <p>70.- MECHANICS</p> <p>71.- Mechanics. MECHANICAL ENGINEERING</p> <p>71.1.- Basic Concepts</p> <p>71.2.- Basic Units</p> <p>71.3.- Mechanisms</p> <p>71.4.- Dynamics</p> <p>71.5.- Vibrations</p> <p>71.6.- Friction</p> <p>71.7.- Tribology</p> <p>71.8.- Oscillations</p> <p>72.- Mechanics. AUTOMOTIVE ENGINEERING</p> <p>72.1.- Brakes and Clutches</p> <p>72.2.- Gears and Differentials</p> <p>72.3.- Transmissions</p> <p>72.4.- Engines Test Benches</p> <p>72.5.- Miscellaneous</p> <p>73.- Void</p> <p>74.- Mechanics. CIM</p> <p>75.- Mechanics. HYDROPNEUMATICS AND ROBOTICS</p> <p>75.1.- Oleohydraulics</p> <p>75.2.- Pneumatic</p> <p>75.3.- Hydropneumatic</p> <p>75.4.- Robotic</p> <p>76.- Void</p> <p>77.- Mechanics. STRENGTH OF MATERIALS</p> <p>77.1.- Photoelasticity (Traction, Flexion, Torsion, Bending, etc)</p> <p>77.2.- Traction. Flexion. Bending. Torsion</p> <p>77.3.- Fatigue. Hardness. Impact</p> <p>77.4.- Structures</p> <p>77.5.- Miscellaneous</p> <p>78.- Mechanics. MATERIALS</p> <p>78.1.- Foundry</p> <p>78.2.- Building</p> <p>78.3.- Testing</p> <p>79.- Mechanics. INSTALLATION AND MAINTENANCE</p> <p>79.1.- Cutaway Models</p> <p>79.2.- Disassembly Models</p> <p>79.3.- Installation and Maintenance Trainers</p> <p>80.- FLUID MECHANICS</p> <p>81.- Fluid Mechanics. BASIC CONCEPTS</p> <p>81.1.- Service Units</p> <p>81.2.- Fluid Concepts</p> <p>81.3.- General Fluid Applications</p> <p>81.4.- Hydraulic Laws</p> <p>81.5.- Hydraulic Demonstration</p> <p>81.6.- Pipes</p> <p>81.7.- Hydraulic Machines: Pumps</p> <p>81.8.- Hydraulic Machines: Turbines</p> <p>82.- Fluid Mechanics. DEMONSTRATION</p> <p>83.- Fluid Mechanics. PIPES</p> <p>84.- Fluid Mechanics. FLOW, PRESSURE AND METERS</p>	<p>84.1.- Flow</p> <p>84.2.- Pressure</p> <p>84.3.- Viscosity</p> <p>85.- Fluid Mechanics. HYDROLOGY</p> <p>86.- Fluid Mechanics. FLOW CHANNELS</p> <p>87.- Fluid Mechanics. HYDRAULIC MACHINES (Pumps. Turbines. Fans. Compressors)</p> <p>87.1.- Pumps</p> <p>87.2.- Turbines</p> <p>87.3.- Fans</p> <p>87.4.- Compressors</p> <p>88.- Fluid Mechanics. AERODYNAMICS</p> <p>89.2.- Disassembly Models</p> <p>90.- THERMODYNAMICS & THERMOTECNICS</p> <p>91.- Thermodynamics. HVAC (Refrigeration. Air Conditioning. Heat Pumps. Cooling Towers. Heating.)</p> <p>91.1.- Refrigeration</p> <p>91.2.- Air Conditioning</p> <p>91.3.- Heat Pumps</p> <p>91.4.- Cooling Towers</p> <p>91.5.- Heating</p> <p>92.- Thermodynamics. HEAT EXCHANGERS</p> <p>92.1.- Modular Basic options</p> <p>92.2.- Compact options</p> <p>93.- Thermodynamics. HEAT TRANSFER</p> <p>93.1.- Modular Basic options</p> <p>93.2.- Compact options</p> <p>94.- Thermodynamics. COMBUSTION. NOZZLES. STEAM</p> <p>94.1.- Combustion</p> <p>94.2.- Nozzles</p> <p>94.3.- Steam</p> <p>95.- Thermodynamics. ENGINES TEST BENCHES. GENERATORS. CALORIMETERS.</p> <p>95.1.- Engines Test Benches</p> <p>95.2.- Hybrid Test Benches</p> <p>95.3.- Generators</p> <p>95.4.- Calorimeters</p> <p>96.- Thermodynamics. THERMAL TURBINES</p> <p>97.- Thermodynamics. OIL EXTRACTION</p> <p>98.- Thermodynamic. SANITARY</p> <p>100.- PROCESS CONTROL</p> <p>101.- Process Control. FUNDAMENTALS</p> <p>101.1.- General Concepts</p> <p>101.2.- Sensors and Loops</p> <p>101.3.- Applications</p> <p>101.4.- Controllers and Field Bus</p> <p>102.- Process Control. INDUSTRIAL PROCESS CONTROL</p> <p>110.- CHEMICAL ENGINEERING</p> <p>111.- Chemical Engineering. BASIC UNIT OPERATIONS</p> <p>111.1.- Distillation</p> <p>111.2.- Absorption</p> <p>111.3.- Evaporation</p> <p>111.4.- Extraction</p> <p>112.- Chemical Engineering. GENERAL UNIT OPERATIONS</p> <p>112.1.- Mass Transfer</p> <p>112.2.- Adsorption</p> <p>112.3.- Physical Processes</p> <p>113.- Chemical Engineering. CHEMICAL REACTORS</p> <p>113.1.- Modular and Big Reactors</p> <p>113.2.- Modular and Small Reactors</p>
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- 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
 - 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: <u>Base Structure and Robot</u>
. FUB	Base Structure and Robot. (Common for all applications type "F"). <u>Sets (sensor + elements + control software) required for each application</u>
. 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. <u>EDIBON Cloud Learning</u>
- ECL	EDIBON Cloud Learning. <u>Software</u>
- ICAI	Interactive Computer Aided Instruction Software System.
- ELK	EDIBON Software Development KIT, Powered by NI LabVIEW™.

19 Additional options related with Physics
19.6 Physics. EXPANSIONS

3D	MINI-ESN	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

	<u>Power supplies</u>
. FACO	Power Supply.
. EBC100	Base Unit, with built-in power supply.

21.2 Basic Electronic Concepts

	<u>Modules</u>
. 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).
. M99-6	Motors, Generators and Controls Unit.

Data Acquisition and Virtual Instrumentation

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

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).

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).

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).

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).

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

Products List Units

 100% own Design and
own Manufacturing

<u>Assembly Kits</u>	
. 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.
<u>Data Acquisition and Virtual Instrumentation</u>	
- EDAS/VIS-0.25	EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

22.3 Digital Electronics

<u>Assembly Kits</u>	
. 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.
<u>Data Acquisition and Virtual Instrumentation</u>	
- EDAS/VIS-0.25	EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

22.4 Basic Electricity Concepts

<u>Assembly Kits</u>	
. 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.
<u>Data Acquisition and Virtual Instrumentation</u>	
- EDAS/VIS-0.25	EDIBON Data Acquisition System / Virtual Instrumentation System, (250.000 samples per second).

23 Electronics. TRANSDUCERS AND SENSORS

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

<u>Base Units</u>	
. BSPC	Computer Controlled Basic Unit.
. BSUB	Base Unit.

<u>Test Modules</u>	
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.

24 Electronics. CONTROL ELECTRONICS

- RYC	Computer Controlled Teaching Unit for the Study of Regulation and Control.
<u>Available application modules</u>	
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.

25 Electronics. DIGITAL ELECTRONICS

- TDS	Computer Controlled Teaching Unit for the Study of Digital Signal Processing.
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26 Electronics. INDUSTRIAL ELECTRONICS

<u>Power supplies</u>	
- 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.

29 Additional options related with Electronics

29.6 Electronics. EXPANSIONS

MINI-ESN	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.
 - 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).

32 Communications. DIGITAL COMMUNICATIONS

- LICOMBA Communications Laboratory:
 - Power supplies
 - . FACO Power Supply.
 - . EBC100 Base Unit, with built-in power supply.
 - . 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).

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 Computer Controlled Microwave Trainer.
 - Phones
 - EBL Bluetooth Trainer.
 - ETM Cellular Mobile Trainer.

35 Communications. WI-FI

- EDAS/VIS-WF EDIBON Data Acquisition System / Virtual Instrumentation System with WI-FI communication.

39 Additional options related with Communications
39.6 Communications. EXPANSIONS

- | | | | |
|----------|----------|-----|-----|
| MINI-ESN | 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

- AEL-1 **Electrical Installations Laboratory.**
 - 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).
 - AEL-DALI DALI Installations System Trainer.
 - Climatization
 - AEL-AD9A Heating Control Station.
 - AEL-AD9B Basic Heating Control Station.

41.2 AEL-1.2. Industrial Electrical Installations

- Workbenches
- . AEL-WBR Electrical Workbench (Rack).
- . AEL-WBC Electrical Workbench (Rail).
- Modules
- Industrial Control Engineering
- Manual Control Operations.
- Operations with Manual Commutators.
- Automatic Control Operations II.
- 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.

41.3 AEL-1.3. Professional Wiring Practices in Installations

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

Products List Units

 100% own Design and
own Manufacturing

	<u>Modules</u>	
	Cubicle and Panels Wiring Installations	- AEL-AI13-D
. AEL-AEBI	Assembly Exercises in Building Installations.	Modular Trainer of Electrotechnics (Transformers).
. AEL-AEBM	Assembly Exercises on Building Mains Feeds and Meter Cabinets.	<u>Generators/Motors Trainers</u>
. AEL-AESI	Assembly Exercises for Signals Electrical Installations.	A.C. Machines
. AEL-AESU	Assembly Exercises on Switching Units.	<u>General Machines Trainers</u>
. AEL-WCHS	Practices in Installations and Wiring of Hybrid Energy System.	Energy Efficiency in Electrical Motors.
. AEL-WCPV	Professional Practices in Wiring Installations and Commissioning of Photovoltaic System.	Electrical Machines Soft Starter.
. AEL-WTNT	Practices in Installations and Wiring of Network Systems.	Electrical Machines Control through Frequency Controller.
		Options to study:
		More than 9 motors available (see catalog)
		-
		- AEL-AI13
		Modular Trainer for Electrotechnics (RLC Circuits, Electrostatics, Motors, Transformers, Lighting).
		- AEL-AI13-C
		Modular Trainer for Electrotechnics (Motors).
		Options to study:
		More than 5 motors available (see catalog)
		-
		- 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.
		<u>Synchronous Machines Trainers</u>
		AEL-EEA
		Alternators Study Unit.
		- AEL-EGMG24
		Motor-Generator Group.
		<u>Asynchronous Machines Trainers</u>
		- AEL-ACEMT
		A.C. Electrical Motors Trainer.
		Options to study:
		More than 9 motors available (see catalog)
		-
		Options to study:
		More than 6 motors available (see catalog)
		-
		D.C. Machines
		- AEL-DCEMT
		D.C. Electrical Motors Trainer.
		<u>Faults Trainers</u>
		- AEL-ESAM
		Faults Simulation Trainer in Electrical Motors.
		- AEL-ESAT
		Faults Simulation Trainer in Transformers.
		- AEL-3.2.
		Electrical Machines Applications.
		<u>Generators/Motors Applications</u>
		A.C. Machines
		<u>Synchronous Machines</u>
		AEL-EEA
		Alternators Study Unit.
		- AEL-EGMG24
		Motor-Generator Group.
		<u>Asynchronous Machines</u>
		- AEL-ACEMA
		A.C. Electrical Motors Application.
		D.C. Machines
		- AEL-DCEMA
		D.C. Electrical Motors Application.
		- AEL-STMA
		Applications of Stepper Motors.
		- AEL-DCBRA
		DC Brushless Motor Application.
		43.1.1 Control Data Acquisition and Software
		- EM-SCADA
		Control and Data Acquisition System Software for Electrical Machines.
		- MUAD
		Electric Power Data Acquisition System.
		43.2 Motors (only motors)

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 Security Control System.
- . AEL-KNX4 KNX (EIB) Fire Alarm System.
- . AEL-KNX5 KNX (EIB) Position Control Systems.

Lighting

- . AEL-DALI DALI Installations System Trainer.

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).

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.

Products List Units

 100% own Design and
own Manufacturing

- EMT-E	Motors (Available several types of D.C. Motors and A.C. Motors). D.C. Motors	. REF	Fixed Resistance Module.
			<u>4. Motors, with couplings, connectors and motor support</u>
			D.C. Motors
- EMT1-E	D.C. Independent excitation motor-generator.	. EMT1	D.C. Independent Excitation Motor-Generator.
- EMT2-E	D.C. Series excitation motor-generator.	. EMT2	D.C. Series Excitation Motor-Generator.
- EMT3-E	D.C. Shunt excitation motor-generator.	. EMT3	D.C. Shunt Excitation Motor-Generator.
- EMT4-E	D.C. Compound excitation motor-generator.	. EMT4	D.C. Compound Excitation Motor-Generator.
- EMT5-E	D.C. Shunt-series compound excitation motor.	. EMT5	D.C. Shunt-Series Compound Excitation Motor.
- EMT12-E	Universal motor (single-phase).	. EMT12	Universal Motor (single-phase).
- EMT15-E	D.C. Permanent Magnet Motor.	. EMT15	D.C. Permanent Magnet Motor.
- EMT18-E	D.C. Brushless motor.	. EMT18	D.C. Brushless motor.
- EMT19-E	Stepper motor.	. EMT19	Stepper motor.
	A.C. Motors		A.C. Motors
- EMT6-E	A.C. Synchronous three-phase motor alternator.	. EMT6	A.C. Synchronous Three-Phase Motor Alternator.
- EMT6b-E	Permanent magnets synchronous three-phase generator (24 Vac).	. EMT6b	Permanent magnets synchronous three-phase generator (24 Vac).
- EMT7-E	Asynchronous three-phase motor of squirrel cage.	. EMT7	Asynchronous Three-Phase Motor of squirrel cage.
- EMT7b-E	Asynchronous three-phase motor of squirrel cage (4 poles).	. EMT7b	Asynchronous three-phase motor of squirrel cage (4 poles).
- EMT7c-E	Asynchronous three-phase motor of squirrel cage (8 poles).	. EMT7c	Asynchronous three-phase motor of squirrel cage (8 poles).
- EMT8-E	Asynchronous three-phase motor with wound rotor.	. EMT8	Asynchronous Three-Phase Motor with Wound Rotor.
- EMT9-E	Dahlander three-phase motor (two speeds).	. EMT9	Dahlander Three-Phase Motor (two speeds).
- EMT10-E	Asynchronous three-phase motor of two independent speeds.	. EMT10	Asynchronous Three-Phase Motor of two independent Speeds.
- EMT11-E	Asynchronous single-phase motor with starting capacitor.	. EMT11	Asynchronous Single-Phase Motor with Starting Capacitor.
- EMT12-E	Universal motor (single-phase).	. EMT12	Universal Motor (single-phase).
- EMT14-E	Repulsion motor, single-phase with short-circuited brushes.	. EMT14	Repulsion motor, single-phase with short-circuited brushes.
- EMT16-E	Asynchronous single-phase motor with starting and running capacitor.	. EMT16	Asynchronous Single-Phase Motor with Starting and Running Capacitor.
- EMT17-E	Three-phase motor of squirrel cage with "Y" connection.	. EMT17	Three-phase motor of squirrel cage with "Y" connection.
- EMT20-E	Asynchronous single-phase motor with split phase.	. EMT20	Asynchronous Single-Phase Motor with Split Phase.
- EMT21-E	Three-phase Reluctance motor.	. EMT21	Three-Phase Reluctance Motor.
- EMT22-E	Single-phase shaded pole motor.	. EMT22	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. <u>Electrical Machines Units</u>	. FRE-FE	Electronic Brake.
. EME	Electrical Machines Unit (Advance option).	. DI-FRE	Pendular Dynamo Brake.
. EME/M	Electrical Machines Unit (Intermediate option).	. FREND	Dynamo Brake 300 W.
. EME/B	Electrical Machines Unit (Basic option).	. FRENP	Magnetic Powder Brake.
. EAL	Network Analyzer Unit (AC).	. FREPR	Prony Brake.
. EALD	Network Analyzer Unit, with Computer Data Acquisition.	. FRECP	Eddy Current Brake.
. EALDG	Network Analyzer Unit, with Computer Data Acquisition+Oscilloscope Display.		<u>6. Transformers</u>
. EAL/DC	Network Analyzer Unit (DC).	. ETT	Three-phase and Single-phase Transformers Unit.
. EAM-VA	Analog Measurement Unit (4 voltmeters & 2 ammeters).	. TPPT	Three-phase Power Transformer Unit.
. MUAD	Electric Power Data Acquisition System.	. EMPTA	Auxiliary Transformer and Protection Module.
	<u>3. Loads</u>	. AUTR	Variable Auto-Transformer.
. RCL3R	Resistive, Inductive and Capacitive Loads Module.	. TRANS	Single-phase Transformer.
. IND	Inductance Module.		<u>7. DC Motor Speed Control</u>
. REV	Variable Resistance Module.	. VVCC	DC Motors Speed Controller.
. REV/T	Three-phase Variable Resistance Module.	. 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).

	<u>8. AC Motor Speed Control</u>	
. VVCA	AC Motor Speed Controller.	Transparent and functional DC shunt excitation motor-generator.
. VVCA/M	AC Motor Speed Controller (intermediate option).	Transparent and functional DC compound excitation motor-generator.
	<u>9. PLC</u>	Transparent and functional DC shunt-series compound excitation motor-generator.
. PLC-PI	PLC Module for the Control of Industrial Processes (for working with EDIBON Computer Controlled Teaching Units).	Transparent and functional AC synchronous three-phase motor alternator.
	<u>10. Tachogenerator</u>	Transparent and functional asynchronous three-phase motor of squirrel cage.
. TECNEL/T	Tachogenerator.	Transparent and functional asynchronous three-phase motor with wound rotor.
. TECNEL/TM	Hand Tachometer.	Transparent and functional Dahlander three-phase motor.
	<u>11, 12 and 13. Additional possibilities</u>	Transparent and functional asynchronous three-phase motor of two independent speeds.
- EM-SCADA	Control and Data Acquisition System Software for Electrical Machines.	Transparent and functional asynchronous single-phase motor with starting capacitor.
- MUAD	Electric Power Data Acquisition System.	Transparent and functional universal motor.
44.1 AEL-4.1. Transformers Construction		Transparent and functional repulsion motor, single-phase with short circuited brushes.
- AEL-EMT-KIT	Advanced Dissectable and Configurable Electrical Machines.	Transparent and functional asynchronous single-phase motor with starting and running capacitor.
- AEL-MGTC	Motor-Generator and Transformer Construction Application.	Transparent and functional asynchronous three-phase motor of squirrel cage with "Y" connection.
- AEL-TPTC	Three-Phase Transformer Construction Kit.	Transparent and functional asynchronous single-phase motor with split phase.
- AEL-DMG-KIT	Disassembly Motors-Generators Application.	Transparent and functional three-phase reluctance motor.
- AEL-DIM-KIT	4 Disassembly Induction Motors Kit.	Transparent and functional single-phase shaded pole motor.
44.2.1 Cut Away Electrical Motors		
	Cut away D.C. independent excitation motor-generator.	
	Cut away D.C. series excitation motor-generator.	
	Cut away D.C. shunt excitation motor-generator.	
	Cut away D.C. compound excitation motor-generator.	
	Cut away D.C. Shunt-series compound excitation motor.	
	Cut away A.C. synchronous alternator motor.	
	Cut away asynchronous three-phase motor of squirrel cage (single).	
	Cut away asynchronous three-phase motor of wound rotor.	
	Cut away Dahlander three-phase (two speeds).	
	Cut away asynchronous three phase motor of two independent speeds.	
	Cut away asynchronous single-phase motor with starting capacitor.	
	Cut away universal single-phase motor.	
	Cut away repulsion motor, single-phase with short-circuited brushes.	
	Cut away D.C. Permanent magnets motor.	
	Cut away asynchronous single-phase motor with starting condenser & working.	
	Cut away three-phase motor of squirrel cage with "Y" connection.	
	Cut away brushless motor.	
	Cut away stepping motor.	
	Cut away split phase motor.	
	Cut away three-phase reluctance motor.	
	Cut away shaded Pole motor.	
44.2.2 Transparent and Functional Electrical Motors		
	Transparent and Functional Motors Application.	
	Transparent and functional DC independent excitation motor-generator.	
	Transparent and functional DC series excitation motor-generator.	
		44.3 Constructions: Applications
		- ESCI Training System for Plug-in Components.
		45.1 AEL-5.1. Generation Applications
		- AEL-5 Power Systems and Smart Grid Technology Laboratory.
		- AEL-5.1. Generation Trainers.
		- AEL-MOSC Manual Operations of Synchronization Circuits.
		- AEL-EESD Advanced Digital Synchronization Trainer.
		- 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.
		- AEL-SAPV Stand-Alone Photovoltaic Application.
		- SAPUC Computer Controlled Stand-Alone Water Pumping Unit.
		- AEL-PHVG Photovoltaic Application with Connection to Grid.
		- AEL-FCLL Fuel Cell Energy Trainer.
		- AEL-SGSB Smart Grids Battery Storage System Application.
		- AEL-EPP Energy Power Plants Trainer.
		- AEL-HPPP Hydroelectric Power Plants Trainer with Pelton Turbine.
		- AEL-MEPD Marine Electrical Power Distribution System.
		- TDEGC Computer Controlled Diesel Engine Electricity Generator.
		- AEL-BSGC Computer Controlled Basic Smart Grid Application.
		- AEL-MGR Microgrid Series, formed by:
		45.2 AEL-5.2. Distribution and Transmission Applications
		- AEL-AE1A Aerial Line Model.

Products List Units

 100% own Design and
own Manufacturing

- 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.
- PSV-SCADA Power Systems SCADA Viewer.

45.3 AEL-5.3. Loads Applications

- AEL-MRPC Manual Reactive Power Compensation.
- AEL-ARPC Automatic Reactive Power Compensation.
- AEL-AE6 Energy Counters Control Trainer.
- AEL-EECFP Advanced Power Factor Compensation Application.
- AEL-APFC Single-phase Automatic Power Compensation.
- AEL-DLT Dynamic Loads Application.
- AEL-FUSG Final User Smart Grid System.
- AEL-FUSG-M Final User Smart Grid-Smart Meter Application.
- AEL-FUSG-E Final User Smart Grid-Smart Energy Application.
- AEL-FUSG-N Final User Smart Grid-Net Metering Application.
- AEL-FUSG-LO Smart Grid Loads.

45.4 AEL-5.4. Protection Relays Applications

- AEL-CTFP Current Transformer Fundaments for Protections Devices.
- AEL-VTFP Voltage Transformer Fundaments for Protections Devices.
- ERP Protection Relays Test.
- ERP-CBM Cybersecurity Module.
- 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.

45.5 AEL-5.5. Cybersecurity Applications

- 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).
- 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.
- 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.

46 Electricity. ALL ELECTRICITY MODULES AVAILABLE

See Catalog AEL-6

49 Additional options related with Electricity

49.6 Electricity Teaching Technics. EXPANSIONS

MINI-ESN	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 System.
- AEL-FUSG-M Final User Smart Grid-Smart Meter Application.
- AEL-FUSG-E Final User Smart Grid-Smart Energy Application.
- AEL-FUSG-N Final User Smart Grid-Net Metering Application.

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

Products List Units

 100% own Design and
own Manufacturing

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

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-BSGC Computer Controlled Basic Smart Grid Application.

53 Energy. GENERATION SYSTEMS

- TDEGC Computer Controlled Diesel Engine Electricity Generator.

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.

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.
 - SAPUC Computer Controlled Stand-Alone Water Pumping Unit.
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).

57.2 Solar Energy Collector

- ECESC Computer Controlled Focusing Solar Energy Collector.

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.

57.4 Wind

- Units with SCADA
- EEEEC Computer Controlled Wind Energy Unit.
 - 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.
 - SAPUC Computer Controlled Stand-Alone Water Pumping Unit.
Manual Units
 - EEE Wind Energy Unit.
 - MINI-EEE Wind Energy Basic Unit.

57.5 Fuel 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.

57.6 Biofuels

- 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.
 - EBMC/A Advanced Computer Controlled Biomass Process Unit.
Manual Units
 - EBEB Bioethanol Process Unit.
 - EBGB Biogas Process Unit.
 - EBDB Biodiesel Process Unit.

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.

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.

58 Energy. SAVING ENERGY
58.1 Energy Utilization
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.
- TORC/A Advanced Computer Controlled Organic Rankine Cycle Unit.
- TVCC Computer Controlled Combustion Laboratory Unit.
- TMSC Computer Controlled Stirling Motor.

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.
- EE-KIT Kit of Conversion and Consumption Simulation (AC).

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.

59 Additional options related with Energy
59.6 Energy. EXPANSIONS

PLC	MINI-ESN	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, AUTOMATION & COMPUMECHATRONICS

See section 64

61 Mechatronics. MECHATRONICS
61.1 Control
61.1.1 Theoretical-Practical Fundamentals

- RYC Computer Controlled Teaching Unit for the Study of Regulation and Control.
- RYC-BB Ball and Beam Module.
- RYC-BP Ball and Plate Control Module.
- RYC-C Flow Rate Control Module.
- RYC-CLM Magnetic Levitation Control Module.
- RYC-CP Position Control Module.
- RYC-I Luminosity Control Module.
- RYC-N Level Control Module.
- RYC-P Pressure Control Module.
- RYC-pH pH Control Module.
- RYC-PI Inverted Pendulum Control Module.
- RYC-SM DC Servo Motor Module.
- RYC-T Temperature Control Module.
- RYC-TAG Water Flow Temperature Control Module.
- RYC-TAR Air Flow Temperature Control Module.

61.1.2 Industrial System Applications

- UCP With Electronic Control Valve
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-C Set for Flow Process Control.
- 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.
- Pneumatic Control
- UCP-P Computer Controlled Process Control Unit for the study of Pressure (Air).
- 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.

Products List Units

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- 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:
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.
- 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).
- CBFSC Computer Controlled Fault Finding in Control Systems Unit.
- CTAC Computer Controlled Coupled Tanks System.
- CMDVC Computer Controlled Multivariable Control Unit for Vacuum Degassing.
- CMDAC Computer Controlled Multivariable Control Unit for Stirrer Tank.

61.1.3 Industrial Controllers

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

61.2 Electronics

61.2.1 Sensors & Electronic Instrumentation

- SAIT Transducers and Sensors
Transducers and Instrumentation Trainer.

- BSPC Computer Controlled Basic Unit.
- BSUB Base Unit.
- 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.
- TDS Computer Controlled Teaching Unit for the Study of Digital Signal Processing.
- CADDA Computer Controlled Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters.

61.2.2 Power & Industrial Electronics

- TECNEL Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTs). (Converters: DC/AC+AC/DC+DC/DC+AC/AC).
- SERIN/CA Computer Controlled Advanced Industrial Servosystems Trainer (for AC Motors).
- SERIN/CC Computer Controlled Advanced Industrial Servosystem Trainer (for DC Motors).

61.3.1 Pneumatics

- AE-NS Pneumatic and Electro-Pneumatic Trainer.
- AE-V Vacuum Technology Trainer.
- SAC Silent Air Compressor Unit.

61.3.2 Hydraulics

- AE-HD Oleo-Hydraulic and Electro-Hydraulic Trainer.
- HPU Hydraulic Power Unit.

62 Mechatronics. PLC AUTOMATION

62.1 PLC Options

62.1.1 AE-PLC

- AE-PLC-PAN PANASONIC PLC Trainer.
- AE-PLC-SIE SIEMENS PLC Trainer.
- AE-PLC-AB ALLEN BRADLEY PLC Trainer.
- AE-PLC-MIT MITSUBISHI PLC Trainer.
- AE-PLC-OMR OMRON PLC Trainer.

62.2.1 Traffic & Parking

- N-EM-CST Traffic Signal Control .
- N-EM-AV Car Parking .
- N-EM-AG2Z Two Zones Parking Garage .

62.2.2 Small Industrial Machines

- N-EM-CA Elevator Control.
- N-EM-CLA Automatic Washing Machine Control.
- N-EM-MB Drinks Machine.
- N-EM-MBC Hot Drinks Machine.

Products List Units

 100% own Design and
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- N-EM-CB Pump Control .
- N-EM-MA Embossing Machine .

62.2.3 Small Industrial Systems

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

62.2.4 Big Industrial System

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

62.2.5 Simple Control Applications

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

62.2.6 Industrial Control Applications

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

62.2.7 Thermal Applications

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

62.2.8 Electrical Machines Control

- N-EM-M Motor Control .
- N-EM-MPP Stepper Motor Control .

- N-EM-MET Star-Delta Connection .
- N-EM-MCETI Reversing Star-Delta Connection .
- N-EM-MD Dahlander Motor Circuit .
- N-EM-M2BS Motor with 2 separate Windings .
- N-EM-MAC Starting a Wound - Rotor Motor .

62.2.9 Alarms / Current

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

62.3 Instrumentation & Control

- PLC-BS1 Vibration & Deformation
Vibration and/or Deformation Test Module.
- PLC-BS2 Temperature
Temperature Test Module for PLC.
- PLC-BS3 Pressure
Pressure Test Module for PLC.
- PLC-BS4 Flow
Flow Test Module for PLC.
- PLC-BS5 Ovens
Ovens Test Module for PLC.
- PLC-BS6 Level
Liquid Level Test Module for PLC.
- PLC-BS7 Tachometer
Tachometers Test Module for PLC.
- PLC-BS8 Proximity
Proximity Test Module for PLC.
- PLC-BS9 Pneumatics
Pneumatic Test Module for PLC.
- PLC-BS10 Lights
Light Test Module for PLC.

62.4 PLC Workstations Applications

62.4.1 Pieces Feeding Workstations Applications

- AE-PLC-APS Pieces Feeder Workstation.
- AE-PLC-A Feeding Workstation for Pieces.
- AE-PLC-MA Multiple Pieces Feeder Workstation.
- AE-PLC-DS Pieces Distributor Workstation.

62.4.2 Processing Workstations Applications

- AE-PLC-M Mounting Workstation.
- AE-PLC-P Automatic Pressing Workstation.
- AE-PLC-AT Automatic Screw Workstation.
- AE-PLC-MEMB Bottling Workstation.
- AE-PLC-MET Labelling Workstation.
- AE-PLC-ST Drilling Workstation.
- AE-PLC-SMOLD Molding Workstation.
- AE-PLC-SCOR Cutting Workstation.
- AE-PLC-FT Filtration Workstation.
- AE-PLC-MS Mixing Workstation.
- AE-PLC-PHD Punching Workstation.
- AE-PLC-PR Processing Workstation.
- AE-PLC-FS Filling Workstation.
- AE-PLC-CRS Corking Workstation.
- AE-PLC-APB Bottle Opening Workstation.

- AE-PLC-CP Industrial Control Processes Workstation.

62.4.3 Rotary Table Workstations Applications

- AE-PLC-MR1 Rotary Table Workstation 1.
- AE-PLC-MR2 Rotary Table Workstation 2.
- AE-PLC-MR3 Rotary Table Workstation 3.
- AE-PLC-MR4 Rotary Table Workstation 4.

62.4.4 Pieces Manipulator Workstations Applications

- AE-PLC-MPS Pieces Manipulator Workstation.
- AE-PLC-T Linear Transport Workstation.
- AE-PLC-SPO Positioning Workstation.
- AE-PLC-MAE Electrical Handling Workstation.
- AE-PLC-MAN Pneumatic Handling Workstation.
- AE-PLC-CTCA AC Conveyor Belt Workstation.
- AE-PLC-CTCC CC Conveyor Belt Workstation.
- AE-PLC-MACT Pneumatic Handling and Conveyor Belt.

62.4.5 Robotic Workstations Applications

- AE-BR Robotic Arm Station.
- AE-SCA SCARA Arm Workstation.

62.4.6 Pieces Identification Workstations Applications

- AE-PLC-SIP Pieces Identification Workstation.
- AE-PLC-VS Quality Control Workstation.
- AE-PLC-CF Sorting Workstation.
- AE-PLC-SLB Ball Selection Workstation.
- AE-PLC-RFID RFID identification Workstation.
- AE-PLC-CPD Defective Pieces Sorter Workstation Application.

62.4.7 CNC Workstations Applications

- AE-CNCT CNC Turning Workstation.
- AE-CNCF CNC Milling Workstation.

62.4.8 Storing Workstations Applications

- AE-PLC-AL Storage Workstation.
- AE-PLC-ALT Buffer Workstation.
- AE-PLC-ALB Bottling Storage Workstation.
- AE-PLC-ALV Vertical Storage Workstation.

62.5 Industrial Applications

62.5.1 Control Applications

- AE-PLC-CPI Industrial Control Processes Application.
- AE-PLC-PH pH control Workstation.
- AE-PLC-AC Air pressure and flow control Workstation.
- AE-PLC-CN Flow and level control Workstation.
- AE-PLC-RT Temperature Regulation Application.
- AE-PLC-CS Traffic Light Control Application.
- AE-PLC-INV Greenhouse Application.
- AE-PLC-SE Elevator Control Application.
- AE-PLC-SPA Automatic Sectional Door Application.
- AE-PLC-SA Industrial Kneader Application.

62.5.2 Renewable Energy Applications

- AE-PLC-EF Photovoltaic Energy Application.

- AE-PLC-EE Wind Energy Application.

- AE-PLC-EST Solar Thermal Energy Application.
- AE-PLC-SH Hybrid Energy Application.
- AE-PLC-MEE Wind Turbine Trainer.

62.5.3 Power Applications

- AE-PLC-SP Power System Application.
- AE-PLC-ME Electrical Machines Application.

62.5.4 Smart Grid Applications

- AE-PLC-SM Smart Grid System Application.

62.6 Flexible Manufacturing Systems (FMS)

62.6.1 Systems

- AE-PLC-FMS1 Flexible Manufacturing System 1.
- AE-PLC-FMS2 Flexible Manufacturing System 2.
- AE-PLC-FMS3 Flexible Manufacturing System 3.
- AE-PLC-FMS4 Flexible Manufacturing System 4.
- AE-PLC-FMS5 Flexible Manufacturing System 5.
- AE-PLC-FMS6 Flexible Manufacturing System 6.
- AE-PLC-FMS7 Flexible Manufacturing System 7.
- AE-PLC-FMS8 Flexible Manufacturing System 8.
- AE-PLC-FMS9 Flexible Manufacturing System 9.
- AE-PLC-FMS10 Flexible Manufacturing System 10.
- AE-PLC-FMS11 Flexible Manufacturing System 11.
- AE-PLC-FMS12 Flexible Manufacturing System 12.
- AE-PLC-FMS13 Flexible Manufacturing System 13.
- AE-PLC-FMS14 Flexible Manufacturing System 14.

62.6.2 Automation Software

- AE-AS Automation System Simulation Software.

63 Mechatronics.PLC COMPUMECHATRONICS

63.1 Electricity

- AEL-1-PLC AEL-1 Electrical Installations
PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-1.
- AEL-2-PLC AEL-2 Home Automation System
PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-2.
- AEL-3-PLC AEL-3 Electrical Machines
PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-3.
- AEL-4-PLC AEL-4 Electromechanical Constructions
PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-4.
- AEL-5-PLC AEL-5 Power Systems and Smart Grid Technology
PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-5.

63.10 Environment

- ESHC(2x1m)-PLC Water Handling
PLC Module for the control of Industrial Processes (PLC-PI) to be used with ESHC(2x1m).
- PDFDC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDFDC.

**Products List
Units**

 100% own Design and
own Manufacturing

- PDDRC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDDRC.	. UCP-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control. With Pneumatic Control Valve
- PAHSC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PAHSC.	- UCPCN-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UCPCN.
- PDSC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDSC. Water Treatment	. UCPCN-UB	Base Unit (Common for all sets for process control type "UCPCN"). <u>Sets (sensor and elements + computer control software) used with base unit</u>
- PDAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDAC.	. UCPCN-T	Set for Temperature Process Control.
- PDANC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDANC.	. UCPCN-C	Set for Flow Process Control.
- PEFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PEFC.	. UCPCN-N	Set for Level Process Control.
- PEAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PEAC.	. UCPCN-PA	Set for Water Pressure Process Control.
- PEAIC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PEAIC.	. UCPCN-PH	Set for pH Process Control.
- POAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with POAC.	. UCPCN-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control. With Speed Controller
- PEAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PEAC.	- UCPCV-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UCPCV.
- EFLPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EFLPC.	. UCPCV-UB	Base Unit. (Common for all Sets for process control type "UCPCV"). <u>Sets (sensor and elements + computer control software) used with base unit</u>
- ROUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with ROUC.	. UCPCV-T	Set for Temperature Process Control.
- PCCAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PCCAC.	. UCPCV-C	Set for Flow Process Control.
- PPTAC/1-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPTAC/1.	. UCPCV-N	Set for Level Process Control.
- PPTAC/2-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPTAC/2.	. UCPCV-PA	Set for Pressure Process Control.
- PPDAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPDAC.	. UCPCV-PH	Set for pH Process Control.
- PFADC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PFADC.	. UCPCV-CT	Set for Conductivity and TDS (Total dissolved Solids) Process Control. With Electronic Control Valve + Pneumatic Control Valve + Speed Controller
- PPFAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPFAC.	- UCPCNCV-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UCPCNCV.
- PPBC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPBC.	. UCPCNCV-UB	Base Unit (Common for all Sets for process control type "UCPCNCV"). <u>Sets (sensor and elements + computer control software) used with base unit</u>
- PHCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PHCC. Pollution	. UCPCNCV-T	Set for Temperature Process Control.
- ECASC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with ECASC.	. UCPCNCV-C	Set for Flow Process Control.
- PSNC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PSNC.	. UCPCNCV-N	Set for Level Process Control.
- PSMC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PSMC.	. UCPCNCV-PA	Set for Water Pressure Process Control.
- PCGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PCGC.	. UCPCNCV-PH	Set for pH Process Control.
-		. UCPCNCV-CT	Set for Conductivity and TDS (Total dissolved solids) Process Control. Pneumatic Control
- PLGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PLGC.	- UCP-P-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UCP-P. Faults Finding
- EPIRC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPIRC.	- CBFSC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CBFSC.
63.11 Process Control		- CTAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CTAC.
	Applications	- CMDVC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CMDVC.
	With Electronic Control Valve	- CMDAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CMDAC. Industrial Systems
- UCP-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UCP.	- CPIC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CPIC.
. UCP-UB	Base Unit. (Common for all Sets for process control type "UCP"). <u>Sets (sensor and elements + computer control software) used with base unit</u>	- CPIC-C-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CPIC-C.
. UCP-T	Set for Temperature Process Control.	- CPIC-T-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CPIC-T.
. UCP-P	Computer Controlled Process Control Unit for the study of Pressure (Air).	- CPIC-N-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CPIC-N.
. UCP-N	Set for Level Process Control.	- CPIC-P-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CPIC-P.
. UCP-PA	Set for Water Pressure Process Control.		
. UCP-PH	Set for pH Process Control.		

Products List Units

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63.2 Energy

Modular Electrical and Smart Grid Power Systems

- AEL-MPSS-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-MPSS. Smart Grid "Final User"
- AEL-FUSG-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-FUSG. Grids
- TDEGC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TDEGC.
- MGRID-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MGRID.
- AEL-CPSS-02S-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-CPSS-02S.
- AEL-MGR-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-MGR.
- AEL-MGR-1-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-MGR-1.
- AEL-MGR-2-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-MGR-2.
- AEL-ESS-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-ESS.
- DC GRID-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with DC GRID.
- FACTS-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with FACTS.
- AEL-BSGC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-BSGC.

63.3 Renewable

Photovoltaic

- EESFC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EESFC.
- AEL-PHVG-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-PHVG.

Solar Thermal

- EESTC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EESTC.
- MINI-EESTC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MINI-EESTC.

Wind

- EEEEC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EEEEC.
 - AEL-WPT-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-WPT.
 - AEL-WPPI-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEL-WPPI.
 - MINI-EEEC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MINI-EEEC.
- Solar Energy Collector
- ECESC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with ECESC.
- Biofuels
- EBDC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EBDC.
- Sea
- EOMC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EOMC.
 - EMMC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EMMC.
 - ECMC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with ECMC.
 - ETMC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with ETMC.

Geothermal

- EG5C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EG5C.
- EG6C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EG6C.

63.4 Saving Energy

Energy Utilization

- THIBAR22C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THIBAR22C.
- SCE-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with SCE.

Energy Generation

- TPC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TPC.
- TFC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFC.
- TKC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TKC.
- TFAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFAC.
- HTRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTRC.
- HTIC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTIC.
- HTVC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTVC.

63.5 Mechanics

Mechanical Engineering

- MVCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MVCC.
 - MBMRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MBMRC.
 - MEVTC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with MEVTC.
- Strength of Materials
- EEFC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EEFC.
- Materials
- TIAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TIAC.
 - TDRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TDRC.
 - TEVC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TEVC.
- - TSCAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TSCAC.

63.6 Fluid Mechanics

Demonstration

- EGAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EGAC.
- Hydrology
- PDDRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PDDRC.
 - ESHC(4x2m)-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with ESHC(4x2m).

Flow Channels

- CFC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with CFC.
- CFGC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with CFGC.

Pumps, Turbines, Fans and Compressors

- PBOC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBOC.

Products List Units

 100% own Design and
own Manufacturing

<ul style="list-style-type: none"> - PB2C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PB2C. - PBCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBCC. - PBEC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBEC. - PBAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBAC. - PBRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBRC. - HMFAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HMFAC. - PBSPC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with PBSPC. - TPC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TPC. - TKC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TKC. - TFC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFC. - TFRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFRC. - HTRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTRC. - TFAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFAC. - HTIC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTIC. - HVCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HVCC. - HVAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HVAC. - HCCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HCCC. <p style="text-align: center; margin-left: 40px;">Aerodynamics</p> <ul style="list-style-type: none"> - TA50/250C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TA50/250C. - TA1200/1200-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TA1200/1200. - TA500/500-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TA500/500. <p style="text-align: center; margin-left: 40px;">Flow, Pressure and Meters</p> <ul style="list-style-type: none"> - HFCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with HFCC. 	<ul style="list-style-type: none"> - TSCAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TSCAC. - TEVC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TEVC. - THAR22C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THAR22C. - THIBAR22C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THIBAR22C. - THIBAR44C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THIBAR44C. - TAAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TAAC. - TARC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TARC. - TAAUC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TAAUC. - TACC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TACC. - TSAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TSAC. - THAAAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THAAAC. - THALAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THALAC. - THA2AC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THA2AC. - TBTC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TBTC. - TTEC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TTEC. - EACC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with EACC. - THAR2LC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THAR2LC. - THBLAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBLAC. - THBLLC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBLLC. - TRAMC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRAMC. - THARALC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THARALC. - THARL2C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THARL2C. - THARLLC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THARLLC. - THB2AC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THB2AC. - THBA2C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBA2C. - THB2LC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THB2LC. - THBAAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBAAC. - THBALC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBALC. - THBL2C-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THBL2C. <p style="text-align: center; margin-left: 40px;">Heat Exchangers</p> <ul style="list-style-type: none"> - TICC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TICC. - TIFCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TIFCC. - TIAAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TIAAC. - TIVAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TIVAC.
<p>63.7 Thermodynamics & Thermotechnics</p> <p style="margin-left: 20px;">HVAC. Heating, ventilation and air conditioning</p> <ul style="list-style-type: none"> - TCRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCRC. - TRAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRAC. - TPVC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TPVC. - TRRC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRRC. - TRCAC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRCAC. - TRCVC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRCVC. - TRCC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRCC. - THALAC/1-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with THALAC/1. - TPCC-PLC PLC Module for the Control of Industrial Processes (PLC-PI) to be used with TPCC. - TCPISC-PLC PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCPISC. 	

Products List Units

 100% own Design and
own Manufacturing

	Heat Transfer		
- TSTCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TSTCC.	- EPDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPDC.
- TCCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCCC.	- EDPDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EDPDC.
- TCLGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCLGC.	- EPAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPAC.
- TRTC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRTC.	- EDPAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EDPAC.
- TCLFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCLFC.	- EPFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPFC.
- TCEC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCEC.	- UELLC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UELLC.
- TFEC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFEC.	- EPDC/C-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPDC/C.
- TTLFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TTLFC.		General Unit Operations
- LFFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with LFFC.	- TTEC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TTEC.
- TCPGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCPGC.	- QALFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QALFC.
- TLBGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TLBGC.	- QSAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QSAC.
- TFLVC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFLVC.	- QCCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QCCC.
- TRLC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TRLC.	- QUCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QUCC.
- TSPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TSPC.		Chemical Reactors
- TFUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFUC.	- QRQC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QRQC.
- TEPGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TEPGC.		Chemical Process
	Combustion. Nozzles and Steam	- QCDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QCDC.
- TFTC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFTC.	- PSMC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PSMC.
- TCESC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCESC.	- TFUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFUC.
- TECMC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TECMC.	- EFLPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EFLPC.
- TEGVC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TEGVC.	- PFTC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PFTC.
	Engines Test Benches	- QEDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QEDC.
- TDEGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TDEGC.	- PPDAC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PPDAC.
	Thermal Turbines	- LFFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with LFFC.
- HTVC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with HTVC.	- TCEC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TCEC.
- TPTVC/20kW-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TPTVC/20kW.	- TFEC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFEC.
	Oil Extraction	- TTLFC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TTLFC.
- EOEUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EOEUC.	- SBANC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with SBANC.
- EFEUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EFEUC.	- SSPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with SSPC.
- THARA2C-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with THARA2C.	- PLGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PLGC.
		- EPIRC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EPIRC.

63.8 Chemical Engineering

	Basic Unit Operations
- UDCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UDCC.
- UDDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with UDDC.
- CAGC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CAGC.
- CAPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CAPC.

63.9 Food & Water Technologies

	Unit Operations
- PADC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PADC.
- PASC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PASC.
- ROUC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with ROUC.

Products List Units

 100% own Design and
own Manufacturing

- VPMC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with VPMC.
- TPCC-PLC	PLC Module for the Control of Industrial Processes (PLC-PI) to be used with TPCC.
- SBANC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with SBANC.
- SSPC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with SSPC.
- AEHC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEHC.
- AEDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEDC.
- EDLC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EDLC.
- QEDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with QEDC.
- TFDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with TFDC.
- EDSC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EDSC.
- AFPMC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with AFPMC.
- SDCC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with SDCC. Milk Process
- DSNC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with DSNC.
- EMANC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with EMANC.
- AUHTC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with AUHTC.
- CCDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with CCDC.
- PVQC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PVQC.
- IYDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with IYDC.
- RDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with RDC.
- AEQC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with AEQC.
- PADC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PADC.
- PASC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PASC.
- FQDC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with FQDC. Oil Extraction
- PACC-PLC	PLC Module for the control of Industrial Processes (PLC-PI) to be used with PACC.

69 Additional options related with Mechatronics

69.6 Mechatronics. EXPANSIONS

MINI-ESN	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. <u>Modules</u> Panel
. MECA1	Statics Experiments.
. MECA2	Load Elevation Mechanisms Experiments.
. MECA3	Transmissions Experiments.
. MECA4	Dynamics Experiments.
. MECA5	Friction Experiments.
. MECA6	Special Mechanisms Experiments.

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.
- MSDA	Unit to Study Simple Drives Assembly.
- MCDA	Unit to Study Combined Drives Assembly.
- MGTA	Unit to Study Gear Train Assembly. <u>Software</u>
- ICAI	Interactive Computer Aided Instruction Software System.

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.
- MBLU	Bar Linkages Unit.

71.4 Dynamics

	<u>Units with SCADA</u>
- 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.

71.5 Vibrations

Products List Units

 100% own Design and
own Manufacturing

- Units with SCADA
- MEVTC Computer Controlled Torsional Vibration Unit.
 - Manual Units
 - MVRE Vibration of Coil Spring Unit.
 - MVL Free Vibration Unit.
 - MVLFFree & Forced Vibration Unit.
 - MEVLB Unit for studying Free Vibration of a Bar.

71.6 Friction

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

71.7 Tribology

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

71.8 Oscillations

- MSHU Simple Harmonic Motion Unit.

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.

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.

72.3 Transmissions

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

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.

72.5 Miscellaneous

- MEE Geared Lifting Machine.
- MSH Simple Hydraulic System.

- MGE Gear Generation Unit.

73 Void

74 Mechanics. CIM

- AE-PLC-FMS1 Flexible Manufacturing System 1.

75 Mechanics. HYDROPNEUMATICS AND ROBOTICS

75.1 Oleohydraulics

- AE-HD Oleo-Hydraulic and Electro-Hydraulic Trainer.
- Software
- AE-AS Automation System Simulation Software.

75.2 Pneumatic

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

75.2.1 Accessories

- AE-PLC-APS Pieces Feeder Workstation.
- AE-PLC-MPS Pieces Manipulator Workstation.
- Software
- AE-AS Automation System Simulation Software.

75.3 Hydropneumatic

- AE-PLCA-P Automatic Pressing System.
- Software
- AE-AS Automation System Simulation Software.

75.4 Robotic

- AE-BR Robotic Arm Station.
- AE-PLCA-AL Storage System.
- AE-PLCA-T Linear Transport System.
- Software
- AE-AS Automation System Simulation 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.

77.2 Traction. Flexion. Bending. Torsion

- EEU/20KN Universal Material Testing Unit-20KN.
- EEFGR Creep Testing Unit, without masses (1 of SET C).
- MVV Unsymmetrical Cantilever Unit.
- MUP Universal Buckling Unit.

Products List Units

 100% own Design and
own Manufacturing

- 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.
- MTU Tensile Tester Unit.

77.3 Fatigue. Hardness. Impact

Units with SCADA

- EEFC Computer Controlled Fatigue Testing Unit.
Manual Units
- EEF Fatigue Testing Unit.
- EEIC Charpy and Izod Impact Testing Unit.
- EEDB Brinell Hardness Testing Unit.
- EBVR Brinell, Vickers & Rockwell Hardness Testing Unit.

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.

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.

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.

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.

78.3 Testing

79 Mechanics. INSTALLATION AND MAINTENANCE

79.1 Cutaway Models

- CMTM Cutaway Models of Transmission of Motion Units.
- WGCM Unit to Study a Worm Gear Cutaway Model.
- MGCM Unit to Study a Mitre Gear Cutaway Model.
- SGCM Unit to Study a Spur Gear Cutaway Model.
- SGCM/2 Unit to Study a Two-Stage Spur Gear Cutaway Model.
- PGCM Unit to Study a Planetary Gear Cutaway Model.
- BDCM Unit to Study a Variable Speed Trapezoidal Belt Drive Cutaway Model.
- CGCM Unit to Study a Control Gear Cutaway Model.
- DCCM Unit to Study a Multiple-Disc Clutch Cutaway Model.
- BCM Unit to Study a Bearing Cutaway Model.

79.2 Disassembly Models

- SJBA Unit to Study a Shaft with Journal Bearings Assembly.
- HJBA Unit to Study a Hydrodynamic Journal Bearing Assembly.
- SGA Spur Gear Assembly Unit.
- CGA Combined Gear Assembly Unit.
- AMP Assembly and Maintenance of Pumps.
- AMCP Assembly and Maintenance of a Centrifugal Pump Unit.
- AMMCP Assembly and Maintenance of a Multistage Centrifugal Pump Unit.
- AMSP Assembly and Maintenance of a Screw Pump Unit.
- AMDP Assembly and Maintenance of a Diaphragm Pump Unit.
- AMPP Assembly and Maintenance of a Piston Pump Unit.
- AMLCP Assembly and Maintenance of an In-Line Centrifugal Pump Unit.
- AMGP Assembly and Maintenance of a Gear Pump Unit.

79.3 Installation and Maintenance Trainers

- AD SG Unit to Study the Alignment of Drives, Shafts and Gears.
- MDUC Computer Controlled Machine Diagnosis Unit.
- VMSC Computer Controlled Unit to Study Vibrations in Machine Supporting Structures.
- MSCT Screw Joint Testing Unit.
- MSLG Unit to Study Lathe Gears.
- MDSU Basic Unit of Mechanical Drive Systems.

79.6 Mechanics. EXPANSIONS

- | | | | |
|-----|----------|------|-----|
| PLC | MINI-ESN | ESN | ECL |
| EWB | ELK | ICAI | FSS |
| DAS | | | |

Products List Units

 100% own Design and
own Manufacturing

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.

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.

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.

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 length.
 - 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.

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.

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.

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.

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.

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).
- PVFA Pipes, Valves and Fittings Assembly Unit.
- AMCP Assembly and Maintenance of a Centrifugal Pump Unit.

Products List Units

 100% own Design and
own Manufacturing

- ASV Assembly of a Shut-Off Valve Unit.
- MRST Measurement and Regulation Station Trainer.
- GHST Gas Home Supply Trainer.

84 Fluid Mechanics. FLOW, PRESSURE AND METERS

84.1 Flow

- Units with SCADA
- HFCC Computer Controlled Flow of Compressible Fluids Unit.
 - FPCC Computer Controlled Unit to Study Flow through Packed Columns.
Manual Units
 - FMDU Flow Meters Demonstration Unit.
 - HECA Air Flow Studies Unit.

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 length.
- HMM-V500 Multimanometer with 8 manometric tubes of 500 mm length, vertical position.
- HMM-V500-12 Multimanometer with 12 manometric tubes of 500 mm length, 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.

84.3 Viscosity

- HVB Falling Sphere Viscometer and Drag Coefficient.

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).

86 Fluid Mechanics. FLOW CHANNELS

- Units with SCADA
- CFC Computer Controlled Flow Channels (section: 80 x 300 mm).
 - CFGC Computer Controlled Flow Channels.
Manual Units
 - CF Flow Channels (section: 80 x 300 mm).
 - CFG Flow Channels.
 - 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).

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 Alignment and Study Bench.

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.

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.

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.

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.

Products List Units

 100% own Design and
own Manufacturing

- Aerodynamics. ADVANCED
Units with SCADA
- TA1200/1200 Computer Controlled Aerodynamic Tunnel, 1200x1200 mm.
 - TA500/500 Computer Controlled Water tunnel, 500x500 mm.

89 Fluid Mechanics. INSTALLATION AND MAINTENANCE

89.2 Disassembly Models

- AMP Assembly and Maintenance of Pumps.
- AMCP Assembly and Maintenance of a Centrifugal Pump Unit.
- AMMCP Assembly and Maintenance of a Multistage Centrifugal Pump Unit.
- AMSP Assembly and Maintenance of a Screw Pump Unit.
- AMDP Assembly and Maintenance of a Diaphragm Pump Unit.
- AMPP Assembly and Maintenance of a Piston Pump Unit.
- AMLCP Assembly and Maintenance of an In-Line Centrifugal Pump Unit.
- AMGP Assembly and Maintenance of a Gear Pump Unit.

89.6 Fluid Mechanics. EXPANSIONS

- | | | | |
|------|----------|------|-----|
| PLC | MINI-ESN | 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

- Basic Units
- TIR Introduction to Refrigeration Unit.
 - TSCR Simple Compression Refrigeration Circuit Unit.
Refrigeration. MAIN CYCLES
Units with SCADA
 - TCRC Computer Controlled Refrigeration Cycle Demonstration Unit.
 - 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.
Manual Units
 - TRD2PC Two Doors Domestic Refrigeration System Trainer.
 - TCRCT Compression Refrigeration Unit with Different Capillary Tubes.
 - THER Heat Exchangers in the Refrigeration Unit.
- Refrigeration. MAINTENANCE AND FAULTS
Units with SCADA
- TCFR Computer Controlled Capacity Control and Faults in Refrigeration Systems Unit.
Manual Units
 - TAMR Assembly and Maintenance in Refrigeration Systems Unit.
 - TECR Electrical Connection of Refrigerant Compressors Unit.
 - T/KIT3 Recovery – Evacuating and Charging Module.
 - TEIR Electrical Installations in Refrigeration Systems Unit.
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.
Chilled Water
 - TERA/A Refrigeration Water Recirculation Advanced Unit.
 - TERA Refrigeration Water Recirculation 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 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)).
 - 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
 - TRAMC Computer Controlled Refrigeration and Air Conditioning Modular Unit.
 - 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)).

Products List Units

 100% own Design and
own Manufacturing

- THARA2C	Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (air) and two evaporators (water and air)).		91.3 Heat Pumps
- THARLLC	Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (water) and one evaporator (water)).		Heat Pumps + Air Conditioning + Refrigeration
- THARALC	Computer Controlled Refrigeration and Air Conditioning Unit (one condenser (air) and one evaporator (water)).		<u>Units with SCADA</u>
- THAR2LB	Refrigeration and Air Conditioning Unit (two condensers (water and air) and one evaporator (water)).		- THIBAR22C Computer Controlled Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THARL2B	Refrigeration and Air Conditioning Unit (one condenser (water) 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)).
- THARA2B	Refrigeration and Air Conditioning Unit (one condenser (air) and two evaporators (water and air)).		Manual Units
- THARLLB	Refrigeration and Air Conditioning Unit (one condenser (water) and one evaporator (water)).		- THIBAR22B Heat Pump + Air Conditioning + Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air)).
- THARALB	Refrigeration and Air Conditioning Unit (one condenser (air) and one evaporator (water)).		- 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)).
91.2 Air Conditioning			Heat Pumps. CONVENTIONAL
	Air Conditioning. MAIN CYCLES		<u>Units with SCADA</u>
- TAAC	Computer Controlled Air Conditioning Laboratory Unit.		- THB22C Computer Controlled Heat Pump Unit (two condensers (water and air) and two evaporators (water and air)).
- TARC	Computer Controlled Recirculating Air Conditioning Unit.		- THB2LC Computer Controlled Heat Pump Unit (two condensers (water and air) and one evaporator (water)).
- TAAB	Air Conditioning Laboratory Unit.		- THBL2C Computer Controlled Heat Pump Unit (one condenser (water) and two evaporators (water and air)).
- TARB	Recirculating Air Conditioning Unit.		- THBA2C Computer Controlled Heat Pump Unit (one condenser (air) and two evaporators (water and air)).
	Air Conditioning. SPECIAL APPLICATIONS		- THBLLC Computer Controlled Heat Pump Unit (one condenser (water) and one evaporator (water)).
- TAAUC	Computer Controlled Automobile Air Conditioning Trainer.		- THBALC Computer Controlled Heat Pump Unit (one condenser (air) and one evaporator (water)).
- TACC	Computer Controlled Air Conditioning Unit with Climatic Chamber and Water Chiller.		- THB2AC Computer Controlled Heat Pump Unit (two condensers (water and air) and one evaporator (air)).
- TAAU	Automobile Air Conditioning Trainer.		- THBLAC Computer Controlled Heat Pump Unit (one condenser (water) and one evaporator (air)).
	Air Conditioning. INDUSTRIAL SYSTEMS		- THBAAC Computer Controlled Heat Pump Unit (one condenser (air) and one evaporator (air)).
- TSAC	Computer Controlled Air Conditioning System with Climatic Chamber.		Manual Units
- TACS	Split Air Conditioner Unit.		- THB22B Heat Pump Unit (two condensers (water and air) and two evaporators (water and air)).
- TSCAC	Computer Controlled Air Duct Systems Unit.		- THB2LB Heat Pump Unit (two condensers (water and air) and one evaporator (water)).
	Air Aconditioning. MAINTENANCE AND FAULTS		- THBL2B Heat Pump Unit (one condenser (water) and two evaporators (water and air)).
- TEFA	Electrical Faults in Air Conditioning Systems		- THBA2B Heat Pump Unit (one condenser (air) and two evaporators (water and air)).
	Air Conditioning. SEVERAL EVAPORATOR AND CONDENSER OPTIONS		- THBLLB Heat Pump Unit (one condenser (water) and one evaporator (water)).
- THAAAC	Computer Controlled Air Conditioning Unit (one condenser (air) and one evaporator (air)).		- THBALB Heat Pump Unit (one condenser (air) and one evaporator (water)).
- THALAC	Computer Controlled Air Conditioning Unit (one condenser (water) and one evaporator (air)).		- THB2AB Heat Pump Unit (two condensers (water and air) and one evaporator (air)).
- THA2AC	Computer Controlled Air Conditioning Unit (two condensers (water and air) and one evaporator (air)).		- THBLAB Heat Pump Unit (one condenser (water) and one evaporator (air)).
	Manual Units		- THBAAB Heat Pump Unit (one condenser (air) and one evaporator (air)).
- THAAAB	Air Conditioning Unit (one condenser (air) and one evaporator (air)).		Heat Pumps. SPECIAL
- THALAB	Air Conditioning Unit (one condenser (water) and one evaporator (air)).		<u>Units with SCADA</u>
- THA2AB	Air Conditioning Unit (two condensers (water and air) and one evaporator (air)).		- TBTC Computer Controlled Thermo-Electric Heat Pump.

Products List Units

 100% own Design and
own Manufacturing

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

91.4 Cooling Towers

Units with SCADA
- TTEC Computer Controlled Bench Top Cooling Tower.
Manual Units
- TTEB Bench Top Cooling Tower.

91.5 Heating

Units with SCADA
- EACC Computer Controlled Hot Water Production and Heating Teaching Unit.
- TEHSC Computer Controlled Unit to Study the Efficiency of a Heating System.
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.
- IGHT Instantaneous Gas Heater Trainer.
- GBT Forced Air Gas Burner Trainer.

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.

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.

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.

93.2 Compact options

Basic Options
Radiation
Units with SCADA
- TRTC Computer Controlled Thermal Radiation and Light Radiation Unit.

Products List Units

 100% own Design and
own Manufacturing

	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.
	<u>Advanced Options</u>
	Boiling
	<u>Units with SCADA</u>
- 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
	<u>Units with SCADA</u>
- 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.

94 Thermodynamics. COMBUSTION. NOZZLES. STEAM

94.1 Combustion

	<u>Units with SCADA</u>
- TVCC	Computer Controlled Combustion Laboratory Unit.
- TVPLC	Computer Controlled Flame Propagation and Stability Unit.

94.2 Nozzles

	<u>Units with SCADA</u>
- TFTC	Computer Controlled Nozzle Performance Test Unit.
	Manual Units
- TPT	Nozzle Pressure Distribution Unit.

94.3 Steam

	<u>Units with SCADA</u>
- TCESC	Computer Controlled Separating and Throttling Calorimeter.
- TECMC	Computer Controlled Marcet Boiler Unit.
- TEGVC	Computer Controlled Steam Generation Unit.
- TSMC	Computer Controlled Steam Motor and Energy Conversion 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).

95 Thermodynamics. ENGINES TEST BENCHES. GENERATORS. CALORIMETERS.

95.1 Engines Test Benches

	<u>Units with SCADA</u>
- 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.

95.2 Hybrid Test Benches

	<u>Units with SCADA</u>
- TMHC	Computer Controlled Test Bench for Hybrid Engine.

95.3 Generators

	<u>Units with SCADA</u>
- TMSC	Computer Controlled Stirling Motor.
- TORC	Computer Controlled Organic Rankine Cycle Unit.
- TORC/A	Advanced Computer Controlled Organic Rankine Cycle Unit.
- TDEGC	Computer Controlled Diesel Engine Electricity Generator.
	Manual Units
- TMSB	Stirling Motor.

95.4 Calorimeters

	<u>Units with SCADA</u>
- TBMC-CG	Computer Controlled Exhaust Gas Calorimeter.
	Manual Units
- TBMC-AGE	Exhaust Gas Analyzer.
- PFGA	Portable Flue Gas Analyzer.

96 Thermodynamics. THERMAL TURBINES

	<u>Units with SCADA</u>
- 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.

Products List Units

 100% own Design and
own Manufacturing

- TTVC Computer Controlled Steam Turbine.
- TPTVC/1.5kW Computer Controlled 1.5 kW Steam Power Plant.
- TPTVC/20kW Computer Controlled Steam Power Plant Adjustable up to 20 kW.
- RETU Refrigeration Tower Unit.
- HTVC Computer Controlled Solar/Heat Source Vapour Turbine.

97 Thermodynamics. OIL EXTRACTION

Units with SCADA

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

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.

99 Additional options related with Thermodynamics & Thermotechnics

99.6 Thermodynamics & Thermotechnics. EXPANSIONS

- | | | | |
|-----|----------|------|-----|
| PLC | MINI-ESN | 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 Base 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.

101.2 Sensors and Loops

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

101.3 Applications

Products List Units

 100% own Design and
own Manufacturing

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.

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).

109 Additional options related with Process Control

109.6 Process Control. EXPANSIONS

PLC	MINI-ESN	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.

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.

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).

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.

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.

112.2 Adsorption

Units with SCADA

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

112.3 Physical Processes

Units with SCADA

- QCCC Computer Controlled Cracking Column.
 - QUCC Computer Controlled Crystallization Unit.
- Manual Units
- QUCCB Crystallization Unit.

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.

Products List Units

 100% own Design and
own Manufacturing

- 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.

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.

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.

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.

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.

114.3 Solvent

- Units with SCADA
- QEDC Computer Controlled Batch Solvent Extraction and Desolventising Unit.

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.

114.5 Food Technology

- Units with SCADA
- SBANC Computer Controlled Tray Drier.
 - SSPC Computer Controlled Spray Drier.
 - SDCC Computer Controlled Spray Dryer and Chiller Unit.
- Manual Units
- SSPB Spray Drier.

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.

115 Chemical Engineering. MASS TRANSFER

- Units with SCADA
- TTEC Computer Controlled Bench Top Cooling Tower.
 - FPCC Computer Controlled Unit to Study Flow through Packed Columns.

119 Additional options related with Chemical Engineering

119.6 Chemical Engineering. EXPANSIONS

PLC	MINI-ESN	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

Products List Units

 100% own Design and
own Manufacturing

121.1 Basic Units Operations

	Pasteurizers <u>Units with SCADA</u>
- PADC	Computer Controlled Teaching Autonomous Pasteurization Unit.
- PASC	Computer Controlled Laboratory Pasteuriser.
	Driers <u>Units with SCADA</u>
- SBANC	Computer Controlled Tray Drier.
- SSPC	Computer Controlled Spray Drier.
- SDCC	Computer Controlled Spray Dryer and Chiller Unit.
	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.

121.2 General Pilot Plants

	<u>Units with SCADA</u>
- 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.

122 Food Technology. MILK PROCESS

	<u>Units with SCADA</u>
- 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.

123 Food Technology. OIL PROCESS

	<u>Units with SCADA</u>
- PACC	Computer Controlled Continuous Cycle Oil Production Plant.

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	MINI-ESN	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

	<u>Units with SCADA</u>
- 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.
- RHU	Rainfall Hydrographs Unit.

131.2 Moisture

	<u>Units with SCADA</u>
- PAHSC	Computer Controlled Soil Moisture Suction Sand Unit.

Products List Units

 100% own Design and
own Manufacturing

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.

131.3 Sedimentation

Units with SCADA

- PDSC Computer Controlled Sedimentation Tank.
- #### Manual Units
- PDS Sedimentation Tank.
 - ESED Sedimentation Study Unit.
 - SPFB Sedimentation, Precipitation and Flocculation Unit.

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.

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.

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.

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.

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 Hydrocyclone.

133 Environment. POLLUTION

133.1 Ground Pollution

Units with SCADA

- ECASC Computer Controlled Subterranean Water Pollution Unit.

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.

139 Additional options related with Environment

139.6 Environment. EXPANSIONS

PLC	MINI-ESN	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.
- BIUTECH 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.
- EDILAB-ELEC1 Electrolyzer (3 NI/h).
- EDILAB-ELEC2 Electrolyzer (60 NI/h).

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.

149 Additional options related with Biomedical Engineering
149.6 Biomedical Engineering. EXPANSIONS

PLC	MINI-ESN	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.

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

183 LabVIEW Kits

- ELK EDIBON Software Development KIT, Powered by NI LabVIEW™.

Used with all EDIBON units using 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.
 - QEDC Computer Controlled Batch Solvent Extraction and Desolventising Unit.
 - 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

- 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".

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

Products List Units

100% own Design and
own Manufacturing

-
- APS12 Hybrid Software
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, AUTOMATION & 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