About Us

Our mission is to provide the proper technological tools for easy, quick and effective training.

Who we are

- A great team
- more than 120 highly qualified professionals
- more than 50 design engineers
...all at your service!

Our customers

In more than 150 countries

Contact us:
+34 91.619.93.63
edibon@edibon.com
EDIBON offers the most advanced worldwide technology in the field of engineering and technical teaching equipment market.

**Own R&D**

- 100% own design
- 100% own manufacturing
- 100% own quality control

**High Quality certificates**

**Main Quality Certificates**

- ISO 9001
- ISO 14001
- OHSAS 18001
- EMAS
- CE

**Other Quality Certificates:**

**Our technology**

**SCADA**

- Supervisory · Control · And · Data Acquisition

**SOFTWARE**

- Interactive Computer Aided Instruction Software System

**DATA ACQUISITION**

- Faults Simulation System
- Data Acquisition Software

- Classroom Manager
- Student Labsoft
- Practices
- Calculations
- Graphics
- Results

Details in pages: 101, 102, 103 and 104
### Products

#### Teaching Units

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- FSS ................................................................. p.101
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- SCADA+PLC (Real Industrial Systems) ....................... p.102
- LabVIEW Kits ...................................................... p.102
- USB Kits ............................................................. p.102
- EDIBON Mini SCADA-NET Systems ............................ p.103
- EDIBON Cloud Learning ......................................... p.104

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ALL EDIBON Business Models

- "DAY BY DAY" (D/D)
- PROJECTS AND COMPLETE LABORATORIES
- TECHNICAL EDUCATION TURN KEY PROJECTS (TKP)
- PILOT PLANTS AND CUSTOM MADE UNITS
- EDIBON CLOUD LEARNING (ECL)
- COURSES

Details in pages: from 105 to 112
11. 3D Physics (three-dimensions)

**Computer Controlled Three Dimensions (3D) Physics Systems**

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

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

**Some 3D Results**

(in two and three dimensions)

More information: www.edibon.com>products>physics
All units in this area using SCADA can additionally use:

**SOFTWARE**

- Interactive Computer Aided Instruction Software System
- Classroom Manager
- Student Labsoft

**SCADA**

- Supervisory Control and Data Acquisition

**MULTIPOST OPTIONS**

- ESN
- EDIBON SCADA-NET (many units, many students)

**TECHNICAL DISTANCE LEARNING**

- ECL
- EDIBON Cloud Learning (units in one city, students in other cities)

**3D**

- EDIBON Three Dimensions System

**Electronic White Board (EWB)**

Details in pages: 101, 102, 103 and 104
21. Electronics. BASIC CONCEPTS

Basic Electronics and Electricity Laboratory, with SCADA

NEW

22. Electronics. KITS

Basic Electronics and Electricity Assembly Kits

23. Electronics. TRANSUCERS AND SENSORS

24. Electronics. CONTROL ELECTRONICS

25. Electronics. DIGITAL ELECTRONICS

26. Electronics. INDUSTRIAL ELECTRONICS

20. Electronics

Basic Electronic Concepts

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

Modules

Digital Electronics

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

Basic Electricity Concepts

M5  Power Supplies
M1  Direct Current (DC) Circuits
M2  Alternating Current (AC) Circuits
M16  Electric Networks
M17  Electromagnetism
M18  Three-phase Circuits

Electronic Applications

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

Control

RCB  Basic Teaching Unit for the Study of Regulation and Control
M47  Rotational Speed & Position Control

Electronics. BASIC CONCEPTS

Electronics. KITS

Electronics. TRANSDUCERS AND SENSORS

Electronics. CONTROL ELECTRONICS

Electronics. DIGITAL ELECTRONICS

Electronics. INDUSTRIAL ELECTRONICS

www.edibon.com
23. Electronics. TRANSDUCERS AND SENSORS

**SAIT**  
Transducers and Instrumentation Trainer

**BS**  
Modular System for the Study of Sensors

**SCSP**  
Pressure Sensors Calibration System

Complete Applications

**SPC**  
Weighing System, with Computer Data Acquisition

**CADDAA**  
Computer Controlled Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters

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

**NEW**

Available application modules

- 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

**BSPC**  
Computer Controlled Basic Unit

**BSUB**  
Base Unit

**BS1**  
Vibration 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

**NEW**

www.edibon.com
25. Electronics. DIGITAL ELECTRONICS

TDs Computer Controlled Teaching Unit for the Study of Digital Signal Processing

26. Electronics. INDUSTRIAL ELECTRONICS

TECNEL Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTS)

Other available units:
- AEL-WPT Wind Power Application with Permanent Magnets Synchronous Generator
- AEL-WPPI Wind Power Plants with Induction Generator Application
ELECTRONICS EXPANSIONS

All units in this area using SCADA can additionally use:

SOFTWARE
Interactive Computer Aided Instruction Software System

- Classroom Manager
- Student Labsoft
  Practices Calculations Graphics Results

Faults Simulation System

Data Acquisition Software

DATA ACQUISITION

SCADA

Control Interface included in the Unit

Supervisory
Control
And
Data
Acquisition

MULTIPOST OPTIONS
SCADA-NET

EDIBON Cloud Learning units in one city, students in other cities

EDIBON SCADA-NET
many units, many students

TECHNICAL DISTANCE LEARNING

EDIBON Cloud Learning

Electronic White Board (E WB)

Electronic White Board

Details in pages: 101, 102, 103 and 104
Communications

31. Communications. ANALOG COMMUNICATIONS
32. Communications. DIGITAL COMMUNICATIONS
33. Communications. TELEPHONY

31. Communications. ANALOG COMMUNICATIONS
32. Communications. DIGITAL COMMUNICATIONS

LICOMBA
Communications Laboratory

NEW

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

Analog Communications
Modules
EMDA/A Analog Modulations Trainer

Digital Communications
Modules
EDICOM6 Optical Fibre Transmission and Reception
EMDA/D Digital Modulations Trainer
EMDA/P Pulse Modulations Trainer

CODITEL
Telephony Systems Trainer

33. Communications. TELEPHONY

EDIBON SCADA System
Supervisory Software

NEW

34. Communications. APPLIED COMMUNICATIONS

Trainers
EGPS GPS Trainer
ELT Transmission Lines Trainer
EANC Computer Controlled Antenna Trainer
ESA Satellite Trainer
EMIC Computer Controlled Microwave Trainer

EBL Bluetooth Trainer
ETM Cellular Mobile Trainer
ERA Radar Trainer
ELAN Lan Trainer

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

35. Communications. WI-FI

NEW
COMMUNICATIONS EXPANSIONS

Area 30

All units in this area using SCADA can additionally use:

- Classroom Manager
- Student Labsoft
- Faults Simulation System
- Data Acquisition Software

Details in pages: 101, 102, 103 and 104
**AEL-1** Electrical Installations Laboratory

**41. Electricity. ELECTRICAL INSTALLATIONS**

**NEW**

**Climatization Applications**
- AEL-AD9A: Heating Control Application
- AEL-AD9B: Basic Heating Control Application

**Lighting and Control Applications**
- AEL-AD13: Entry Phone Application
- AEL-AD14: Audio and Video Entry Phone Application
- AEL-AD6A: Luminosity Control Application
- AEL-AD6B: Basic Luminosity Control Application
- AEL-AD24: Position Switches Application
- AEL-AD5: Lighting Application with Timer Switch
- AEL-AI13-E: Electrotechnics Application focused on Lighting
- AEL-AE4: Differential Automatic Switches Application

**Indoor Electrical Installations**
- Industrial Control Engineering Applications
  - AEL-CM1: Logical Control Operations Application
  - AEL-CM2: Application of Manual Starters and Velocity Commutators with Asynchronous Motors
  - AEL-CM3: Automatic Control Operations II Application
  - AEL-CM4: Automatic Control Operations with Contactors and Sensors IV Application
  - AEL-MED: Industrial Installations Monitoring Application

**Faults Applications**
- AEL-AD33: Single-Phase Installations Faults Application
- AEL-AD33T: Three-phase Installations Faults Application

**Relays Applications**
- AEL-AE5: Protection Relays Control Application

**Loads Applications**
- AEL-A113-A: Electrotechnics Application Focused on RLC Circuits
Compact Electrical Module

Wireless Applications

Wireless Intrusion Detection Application (RF)

KNX/EIB Applications

Building Automation and Control Networks BacNet Application

DALI Installations Application

KNX/EIB Security Control Application

KNX/EIB Heating Control Application

KNX/EIB Lighting Control Application

KNX/EIB Shutter Control Application

Building Automation and Control Networks BacNet Application

Building Automation and Control Networks BacNet Application

KNX/EIB Energy Management Application

System Support N-ALA02

Module Support

Home Automation General Applications

Remote Control Application Via Telephone

Movement and Sound Detection Application

AEL-AD3A Fire Alarm Advanced Application

AEL-AD1B Robbery Alarm Application

AEL-AD3B Fire Alarm Application

AEL-AD15A Position Control Advanced Application

AEL-AD2S5A Control Application for Home Electric Service through the telephone

AEL-AD22 Flooding Control Application

AEL-AD30 Gas and Smoke Detection Application

Wireless Intrusion Detection Application (RF)

AEL-AD1A Robbery Alarm Advanced Application

AEL-AD15B Position Control Application

AEL-AD25A Position Control Application

AEL-AD23 Position Control Application

AEL-AD28B Advanced Home Automation Application with ZigBee Wireless Protocol

AEL-AD28C Home Automation Application with ZigBee Wireless Protocol

AEL-AD28D Complete Home Automation Application with ZigBee Wireless Protocol
43. Electricity. ELECTRICAL MACHINES

43.1 Electrical Machines Modular Complete Applications

AEL-3 Electrical Machines Laboratory

43.2 Motors Applications

AC Electrical Motors Applications

AEL-EEEM Energy Efficiency in Electrical Motors Application
AEL-EMSS Electrical Machines Starters Application
AEL-EMCF Electrical Machines Control through Frequency Controller Application
AEL-AI13 Modular Application for Electrical Machines (RC Circuits, Electrostatics, Motors, Transformers, Lighting)
AEL-AI13-C Modular Application for Electrical Machines (Motors)
AEL-EMRP Electrical Machines Relays Protection Application
AEL-SERIN/CA-1kV Computer Controlled Advanced Industrial Servo System Application 1kW (for AC Motors)
AEL-MMRT Motor Management Relays Application
AEL-PRTS Protective Relaying Application
AEL-ACEMT AC Electrical Motors Application (Some options to study: more than 9 motors available)
AEL-ACINA Applications of AC Three-Phase Induction Motor of Squirrel Cage
AEL-ACDTA Application of AC Dahlander Three-Phase Induction Motor
AEL-ACWRA Application of AC Three-Phase Induction Motor of Wound Rotor
AEL-ACLA Application of AC Linear Motor Operations
AEL-ACRLA Application of AC Three-Phase Reluctance Motor
AEL-ACSPA Applications of Asynchronous Single-Phase Motor with Split Phase
AEL-AI12 Modular Application (AC Motors)
AEL-ACMA Applications of Asynchronous Single-Phase Motor (Some options to study: more than 5 motors available)
AEL-EAAA Alternators Study Application
AEL-EMG24 Motor-Generator Group

DC Electrical Motors Applications

AEL-DCEMT DC Electrical Motors Applications (Some options to study: more than 5 motors available)
AEL-DCSHT DC Shunt Excitation Motor Application
AEL-DCMEA Application of DC Series Excitation Motor
AEL-DCSHA Applications of DC Shunt Excitation Motor
AEL-DCOEA Applications of DC Compound Excitation Motor
AEL-DCEPA Applications of DC Separately Excited Motor
AEL-DCEGA Applications of DC Generators
AEL-DCPMA Applications of DC Permanent Magnet Motor
AEL-DCBRA DC Brushless Motor Application
AEL-DCEMS DC Electrical Motors Applications (Some options to study: more than 6 motors available)
AEL-UMA Universal Motor Application
AEL-STMA Stepper Motor Application

Electrical Motors Faults Applications

AEL-ESAM Faults Simulation Application in Electrical Motors
AEL-ESAT Faults Simulation Application in Transformers

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

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

Motors D.C.

EMT1 D.C. Independent Excitation Motor-Generator
EMT2 D.C. Series Excitation Motor-Generator
EMT3 D.C. Shunt Excitation Motor-Generator
EMT4 D.C. Compound Excitation Motor-Generator
EMT5 D.C. Shunt-Series Compound Excitation Motor
EMT12 Universal Motor (single-phase)
EMT15 D.C. Permanent Magnet Motor
EMT18 D.C. Brushless Motor
EMT19 Stepper Motor

Motors A.C.

EMT6 A.C. Synchronous Three-Phase Motor Alternator
EMT6B Permanent magnets synchronous three-phase generator (24 Vac)
EMT7 Asynchronous Three-Phase Motor of squirrel cage
EMT7B Asynchronous three-phase motor of squirrel cage (4 poles)
EMT7C Asynchronous three-phase motor of squirrel cage (8 poles)
EMT8 Asynchronous Three-Phase Motor with Wound Rotor
EMT9 Three-phase Motor with one independent speed
EMT10 Asynchronous Three-Phase Motor of two independent speeds
EMT11 Asynchronous Single-Phase Motor with Starting Capacitor
EMT14 Repulsion motor, single-phase with short-circuited brushes
EMT16 Asynchronous Single-Phase Motor with Starting and Running Capacitor
EMT17 Three-phase motor of squirrel cage with "Y" connection
EMT20 Asynchronous Single-Phase Motor with Split Phase
EMT21 Three-Phase Reluctance Motor
EMT22 Single-Phase Shaded Pole Motor
44. Electricity. ELECTROMECHANICAL CONSTRUCTIONS

AEL-4 Electromechanical Construction Laboratory

**Transformers Construction**

- **Dissectable and Configurable Electrical Motors Application**
  - AEL-EMT-KIT: Advanced Dissectable and Configurable Electrical Machines
  - AEL-MGTC: Motors, Generators and Transformers Construction Application
  - AEL-TPTC: Three-Phase Transformer Construction Application

- **Disassembly Motors**
  - AEL-DMG-KIT: Disassembly Motors-Generators Application
  - AEL-DIM-KIT: 4 Disassembly Induction Motors Application

**Electrical Motors Construction**

- **Cut Away Electrical Motors**
  - EMT1-S: Cut away DC independent excitation motor-generator
  - EMT2-S: Cut away DC series excitation motor-generator
  - EMT3-S: Cut away DC shunt excitation motor-generator
  - EMT4-S: Cut away DC compound excitation motor-generator
  - EMT5-S: Cut away DC shunt-series compound excitation motor
  - EMT6-S: Cut away AC synchronous three-phase motor alternator
  - EMT7-S: Cut away asynchronous three-phase motor of squirrel cage (single)
  - EMT8-S: Cut away asynchronous three-phase motor with wound rotor
  - EMT9-S: Cut away Dahlander three-phase motor
  - EMT10-S: Cut away asynchronous three-phase motor of two independent speeds
  - EMT11-S: Cut away asynchronous single-phase motor with starting capacitor
  - EMT12-S: Cut away universal single-phase motor
  - EMT14-S: Cut away repulsion motor, single-phase with short circuited brushes
  - EMT15-S: Cut away DC permanent magnet motor
  - EMT16-S: Cut away asynchronous single-phase motor with starting and running capacitor
  - EMT17-S: Cut away asynchronous three-phase motor of squirrel cage with "Y" connection
  - EMT18-S: Cut away DC Brushless motor
  - EMT19-S: Cut away stepper motor
  - EMT20-S: Cut away asynchronous single-phase motor with split phase
  - EMT21-S: Cut away three-phase reluctance motor
  - EMT22-S: Cut away single-phase shaded pole motor

- **Transparent and Functional Electrical Motors**
  - AEL-FTM: Transparent and Functional Motors Application
  - AEL-EMT1-T: Transparent and functional DC independent excitation motor-generator
  - AEL-EMT2-T: Transparent and functional DC series excitation motor-generator
  - AEL-EMT3-T: Transparent and functional DC shunt excitation motor-generator
  - AEL-EMT4-T: Transparent and functional DC compound excitation motor-generator
  - AEL-EMT5-T: Transparent and functional DC shunt-series compound excitation motor-generator
  - AEL-EMT6-T: Transparent and functional AC synchronous three-phase motor alternator
  - AEL-EMT7-T: Transparent and functional asynchronous three-phase motor of squirrel cage (single)
  - AEL-EMT8-T: Transparent and functional asynchronous three-phase motor with wound rotor
  - AEL-EMT9-T: Transparent and functional Dahlander three-phase motor (two speeds)
  - AEL-EMT10-T: Transparent and functional asynchronous three-phase motor of two independent speeds
  - AEL-EMT11-T: Transparent and functional asynchronous single-phase motor with starting capacitor
  - AEL-EMT12-T: Transparent and functional universal single-phase motor
  - AEL-EMT14-T: Transparent and functional repulsion motor, single-phase with short circuited brushes
  - AEL-EMT16-T: Transparent and functional asynchronous single-phase motor with starting and running capacitor
  - AEL-EMT17-T: Transparent and functional asynchronous three-phase motor of squirrel cage with "Y" connection
  - AEL-EMT20-T: Transparent and functional asynchronous single-phase motor with split phase
  - AEL-EMT21-T: Transparent and functional three-phase reluctance motor
  - AEL-EMT22-T: Transparent and functional single-phase shaded pole motor

**Wiring & Construction of Motors, Generators and Transformers**

- AEL-DMG-KIT: Disassembly Motors-Generators Application
- AEL-TPTC: Three-Phase Transformer Construction Application
- AEL-DIM-KIT: 4 Disassembly Induction Motors Application

**NEW**

- INSIDE Electrical Motors
- AEL-FTM
- AEL-EMT1-T
- AEL-EMT2-T
- AEL-EMT3-T
- AEL-EMT4-T
- AEL-EMT5-T
- AEL-EMT6-T
- AEL-EMT7-T
- AEL-EMT8-T
- AEL-EMT9-T
- AEL-EMT10-T
- AEL-EMT11-T
- AEL-EMT12-T
- AEL-EMT14-T
- AEL-EMT16-T
- AEL-EMT17-T
- AEL-EMT20-T
- AEL-EMT21-T
- AEL-EMT22-T

www.edibon.com
Power Systems and Smart Grid Technology Laboratory

Basic Load Controller Applications
- AEL-MRPC: Manual Reactive Power Compensation Application
- AEL-ARPC: Automatic Reactive Power Compensation Application
- AEL-AE6: Energy Counters Control Trainer
- AEL-ECPF: Advanced Power Factor Compensation Application
- AEL-APFC: Single-phase Automatic Power Factor Compensation Application
- AEL-DLT: Dynamic Loads Application

Advanced Loads Control
- AEL-FUSG: Final User Smart Grid Application
- AEL-FUSG-M: Final User Smart Grid-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

Protection Systems for Transmission and Distribution Lines
- AEL-TPT-01: Overcurrent Time Protection Relay Application for Lines
- AEL-TPT-02: Directional Overcurrent Protection Relay Application for Transmission Lines
- AEL-TPT-03: Overvoltage and Undervoltage Protection Relay Application
- AEL-TPT-04: Directional Power Protection Relay Application
- AEL-TPT-05: Earth-Fault Voltage Protection Relay Application
- AEL-TPT-06: Parallel Transmission Lines Protection Relay Application
- AEL-TPT-07: High Speed Distance Protection Relay Application

Cybersecurity Applications
- N-EAL: Cybersecurity Application
- ERP-CBM: Cybersecurity Application

Power Generation and Renewable Energies Applications
- AEL-MOSC: Manual Synchronization Application
- AEL-EESD: Automatic Digital Synchronization Application

Wind Energy Applications
- AEL-WPP: Wind Power Plants with Double Feed Induction Generator Application
- AEL-WPT: Wind Power Application with Permanent Magnets Synchronous Generator
- AEL-WPPi: Wind Power Plants with Induction Generator Application

Photovoltaic Energy Applications
- AEL-SAPV: Stand-Alone Photovoltaic Application
- SAPUC: Computer Controlled Stand-Alone Water Pumping Application
- AEL-PHVG: Photovoltaic Application with Connection to Grid

Fuel Cell Energy Applications
- AEL-FCLL: Fuel Cell Energy Application
- AEL-SGSB: Smart Grids Battery Storage Application

Power Plants Applications
- AEL-EPP: Energy Power Plants Application
- AEL-HPPP: Hydroelectric Power Plants Application with Pelton Turbine
- AEL-MEPD: Marine Electrical Power Distribution Application
- TDEGC: Computer Controlled Diesel Engine Electrical Generator Application

Basic Smart Grid Power Systems
- AEL-BSG: Basic Smart Grid Application
- AEL-BSGC: Computer Controlled Smart Grids Application

Microgrid Series
- AEL-MGR: Micro-Grids Power Application

Distribution and Transmission Applications
- AEL-AE1A: Aerial Line Model Application
- AEL-TI-01: Analysis of Three-phase Power Lines Application
- AEL-TI-02: Distribution Transformer with Motor Regulation Application

Protection Relays Applications
- AEL-CTFP: Current Transformer Fundaments Application for Protections Devices
- AEL-VTFP: Voltage Transformer Fundaments Application for Protection Devices
- AEL-ERP: Protection Relays Test Application
- ERP-CBM: Cybersecurity Application
- Protection Systems for Generators
- AEL-GPRE: Generator Protection Relay Application

Available "Smart Grid Power Systems"
- APS12: Advanced Mechanical, Electrical and Smart Grid Power Systems (Utilities)
- AEL-MPSS: Modular Electrical and Smart Grid Power Systems (Utilities)
- AEL-MPSS-015: Complete Smart Grid Power Systems, with Automatic Control Generation, Transmission Line, Loads and Protection Relays, with SCADA
- AEL-MPSS-025: Complete Smart Grid Power Systems, with Automatic Control Generation, Transmission Line and Loads, with SCADA
- AEL-MPSS-035: Complete Smart Grid Power Systems, with Manual Control Generation, Transmission Line and Loads, with SCADA
- AEL-CPSS-015: Smart Grid Power Systems Application, with Automatic Control Generation, Transmission Line and Loads, with SCADA
- AEL-CPSS-025: Smart Micro-Grids Power Systems Application, with Automatic Control Generation and Loads, with SCADA
- AEL-CPSS-035: Smart Grid Power Systems Application with Two parallel Generators, Two Distribution Lines and Loads, with SCADA
All units in this area using SCADA can additionally use:

Details in pages: 101, 102, 103 and 104
51. Energy. SMART GRID AND POWER SYSTEMS

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

486 variables can be controlled

Mechanical Power plants and Energy system with SCADA II

HUB II Screen 1
Main menu screen

HUB II Screen 2
Mains Power Plant Control Loops Simulation

HUB II Screen 3
General state Power Plant diagram

55. Energy. CBERSECURITY

56. Energy. HIGH VOLTAGE

57. Energy. RENEWABLE ENERGIES

58. Energy. SAVING ENERGY
Available Power Plants and Energy Systems Simulation with SCADA

HUB I Screen 1
Main menu screen

HUB I Screen 2
Electrical SCADA operation screen

HUB I Screen 3
Power plant simulator one line diagram management screen

All these SCADA Power Plants can be linked to the Electrical SCADA

Other available units:
ERP-CBM Cybersecurity Application
51. Energy. SMART GRID AND POWER SYSTEMS

AEL-MPSS Modular Electrical and Smart Grid Power Systems (Utilities)

1. Generation Systems

Automatic Control Generation Systems Options
- AEL-GCA-P-02S: Generation System with Automatic Control of Synchronous Generator, Synchronization and Protection Relays, with SCADA
- AEL-GCA-P-02S: Generation System with Automatic Control of Synchronous Generator and Synchronization, with SCADA

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

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

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

2. Transmission/Distribution Systems

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

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

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

3. Loads Systems

Loads Systems

Conventional Loads options
- AEL-C-P-02S: Loads Systems with Automatic Power Factor Compensation and Protection Relays, with SCADA
- AEL-C-P-03S: Loads Systems with Manual Power Factor Compensation and Protection Relays, with SCADA

Special Loads options
- AEL-C-03S: Complex Load, Power Consumption Measurement and Peak Load Monitoring, with SCADA

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

Additional Generation Systems Options
- AEL-GAD-01S: Pumping Power Plant, with SCADA
- AEL-GAD-03S: Automatic Generation System with Two Parallel Generators, with SCADA
- AEL-GAD-04S: Hydroelectric Power Plant, with SCADA

Loads Systems with Automatic Power Factor Compensation and Protection Relays, with SCADA

Loads Systems with Manual Power Factor Compensation and Protection Relays, with SCADA

Isolated Grid Studies
- AEL-GCM-P-01S: Generation System with Manual Control of Synchronous Generator in an Isolated Grid, with SCADA

Generation System with Automatic Control of Synchronous Generator, Synchronization and Protection Relays, with SCADA

Generation System with Manual Control of Synchronous Generator in an Isolated Grid, with SCADA

Complete Smart Grid Power Systems, with Automatic Control Generation, Transmission Line and Loads, with SCADA

Complete Smart Grid Power Systems, with Manual Control Generation, Transmission Line and Loads, with SCADA

Other available units:
- ERP-CBM: Cybersecurity Application
- TDEGC: Computer Controlled Diesel Engine Electrical Generator Application

285 variables can be controlled in MPSS unit
AEL-FUSG Final User Smart Grid Application

Measurement details, load profiles, monthly billing, immediate profiles, daily billing

This screen shows a home virtual plan with the devices distribution

Instantaneous measurements, power demand threshold

This screen shows the virtual devices programming

AEL-FUSG works:
- stand alone and / or
- with APS12 unit
- with MPSS unit
52. Energy. GRIDS

52.1 Cibersecurity

ERP-CBM Cybersecurity Application

52.2 Mechanical Generators

TDEGC Computer Controlled Diesel Engine Electrical Generator Application

52.3 Micro Grid Power System

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

Other available units:

AEL-ESS Electrical Synchronization Systems Series
DC GRID Direct Current Grids
FACTS Flexible Alternate Current Transmission Systems
AEL-BSGC Computer Controlled Smart Grids Application

53. Energy. GENERATION SYSTEMS

TDEGC Computer Controlled Diesel Engine Electrical Generator Application

(for more Generation Systems see: AEL-5, AEL-MPSS)

54. Energy. PROTECTION RELAYS UNITS

ERP Protection Relays Test Application

Protection Relays 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 Application

55. Energy. CIBERSECURITY

ERP-CBM Cybersecurity Application

56. Energy. HIGH VOLTAGE

HVLS High Voltage Laboratory System

Other available unit:
**57. Energy, RENEWABLE ENERGIES**

### 57.1 Photovoltaic

**EESFC** Computer Controlled Photovoltaic Solar Energy Unit

**AEL-PHV** Photovoltaic Application with Connection to Grid

Other available unit:

**SAPUC** Computer Controlled Stand-Alone Water Pumping Application

### 57.2 Solar Energy Collector

**ECESC** Computer Controlled Focusing Solar Energy Collector

### 57.3 Solar Thermal

**EESTC** Computer Controlled Thermal Solar Energy Unit

### 57.4 Wind

**EEEC** Computer Controlled Wind Energy Unit

**AEL-WPP** Wind Power Plants with Double Feed Induction Generator Application

Other available unit:

**AEL-WPPI** Wind Power Plants with Induction Generator Application

**SAPUC** Computer Controlled Stand-Alone Water Pumping Unit

### 57.5 Fuell Cells

**EC6C** Computer Controlled PEM Fuel Cell Advanced Unit
57.6 Biofuells

**EBEC** Computer Controlled Bioethanol Process Unit

**EBGC** Computer Controlled Biogas Process Unit

**EBDC** Computer Controlled Biodiesel Process Unit

**EBMC/A** Advanced Computer Controlled Biomass Process Unit

57.7 Sea

**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

**EG5C** Computer Controlled Geothermal (low enthalpy) Energy Unit

**EG6C** Computer Controlled Geothermal (high enthalpy) Energy Unit
58. Energy. SAVING ENERGY

58.1 Energy Utilization

**THIBAR22C**
Computer Controlled Heat Pump • Air Conditioning • Refrigeration Unit with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air))

**TORC**
Computer Controlled Organic Rankine Cycle Unit

**TVCC**
Computer Controlled Combustion Laboratory Unit

**TMSC**
Computer Controlled Stirling Motor

**SCE**
Computer Controlled Generating Stations Control and Regulation Simulator

**TORC/A**
Advanced Computer Controlled Organic Rankine Cycle Unit

**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)

TFRC  Computer Controlled Radial Flow Turbine

HTRC  Computer Controlled Experimental Reaction Turbine

HTIC  Computer Controlled Experimental Impulse Turbine

TFAC  Computer Controlled Axial Flow Turbine

HTVC  Computer Controlled Solar/Heat Source Vapour Turbine

Thermal Turbines

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
ENERGY EXPANSIONS

All units in this area using SCADA can additionally use:

SOFTWARE

- Interactive Computer Aided Instruction Software System
  - Classroom Manager
  - Student Labsoft
    - Practices
    - Calculations
    - Graphics
    - Results
- Faults Simulation System

SCADA

- Supervisory Control and Data Acquisition
- Multi-post Options SCADA-NET
- Industrial Control Application

EDIBON SCADA-NET
- many units, many students

EDIBON Cloud Learning
- units in one city, students in other cities

TECHNICAL DISTANCE LEARNING

Details in pages: 101, 102, 103 and 104
61. Mechatronics. MECHATRONICS

61.1 Control

Theoretical-Practical Fundamentals

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

Available application modules

- 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-P1 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

EDIBON SCADA System and PID CONTROL

Control Interface Included in the Unit

Data Acquisition Board Supplementary Software

ELECTRICITY
ENERGY
RENEWABLE ENERGY
SAVING ENERGY
MECHANICS
FLUID MECHANICS
THERMODYNAMICS & THERMOLOGY
CHEMICAL ENGINEERING
FOOD & WATER TECHNOLOGIES
ENVIRONMENT
PROCESS CONTROL

MECHATRONICS, AUTOMATION & COMPUMECHATRONICS

MECHATRONICS

- CONTROL
  - Theoretical Practical Fundamentals
  - Industrial System Applications
  - Industrial Controllers

- ELECTRONICS
  - Sensors & Electronic Instrumentation
  - Power & Industrial Electronics

- HYDRAULICS & PNEUMATICS
  - Pneumatics
  - Hydraulics

PLC AUTOMATION

- PLC OPTIONS
  - AE-PLC

- HARDWARE EMULATORS
  - Traffic & Parking
  - Small Industrial Systems
  - Simple Control Applications
  - Electrical Machines Control
  - Alarms/Current

- INSTRUMENTATION & CONTROL
  - Vibration & Deformation
  - Level
  - Temperature
  - Flow
  - Pneumatics
  - Light

- PLC WORKSTATIONS APPLICATIONS
  - Pieces Feeding Workstation Applications
  - Pieces Manipulator Workstation Applications
  - CNC Workstation Applications
  - Control Applications
  - Renewable Energy Applications
  - Power Applications
  - Smart Grid Applications

- INDUSTRIAL APPLICATIONS
  - Power Applications
  - Industrial Applications
  - Simple Control Applications
  - Industrial Control Applications
  - Temperature Applications
  - Temperature Level Applications
  - Electrical Machines Control

- FLEXIBLE MANUFACTURING SYSTEM (FMS)
  - Control Applications
  - Renewable Energy Applications
  - Power Applications
  - Smart Grid Applications

- PROCESS CONTROL
  - Small Industrial Systems
  - Pressure Alarms/Current
  - Industrial Control Applications

more information:
www.edibon.com/products/mechatronics
UCPCNV Computer Controlled Process Control System (with electronic control valve + pneumatic control valve + speed controller), formed by:

- **Control Interface**
- **Data Acquisition Board**
- **EDIBON SCADA System and PID CONTROL**

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

Available versions:
- **UCP** Computer Controlled Process Control System (with electronic control valve)
- **UCPCN** Computer Controlled Process Control System (with pneumatic control valve)
- **UCPCV** Computer Controlled Process Control System (with speed controller)
- **UCP-P** Computer Controlled Process Control Unit for the study of Pressure (Air)

CPIC Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (Flow, Temperature, Level and Pressure)

Available versions:
- **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)
**CTAC** Computer Controlled Coupled Tanks System

**CECI** Industrial Controllers Trainer

**CRCI** Industrial Controllers Networking

**CEAB** Trainer for Field Bus Applications

**CEAC** Controller Tuning Trainer

**61.2 Electronics**

**SAIT** Transducers and Instrumentation Trainer

**BS** Modular System for the Study of Sensors

**TDS** Computer Controlled Teaching Unit for the Study of Digital Signal Processing

**CADD** Computer Controlled Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters

**Other available units:**

- **CBFSC** Computer Controlled Fault Finding in Control Systems Unit
- **CMDVC** Computer Controlled Multivariable Control Unit for Vacuum Degassing
- **CMDAC** Computer Controlled Multivariable Control Unit for Stirrer Tank

**Industrial Controllers**

**Sensors & Electronic Instrumentation**

**Accessories**

- **BSPC** Computer Controlled Basic Unit
- **BSUB** Base Unit
- **BS1** Vibration 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

**Other available units:**

- **CBFSC** Computer Controlled Fault Finding in Control Systems Unit
- **CMDVC** Computer Controlled Multivariable Control Unit for Vacuum Degassing
- **CMDAC** Computer Controlled Multivariable Control Unit for Stirrer Tank
Power & Industrial Electronics

TECNEL

Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTs)
(Converters: DC/AC+AC/DC+DC/AC+AC/AC)

EDIBON SCADA System

Data Acquisition Board
Supervisory Software

SERIN/CA

Computer Controlled Advanced Industrial Servosystem Trainer (for AC Motors)

EDIBON SCADA System

Data Acquisition Board
Supervisory Software

SERIN/CC

Computer Controlled Advanced Industrial Servosystem Trainer (for DC Motors)

EDIBON SCADA System

Data Acquisition Board
Supervisory Software

61.3 Hydraulics & Pneumatics

Pneumatics

AE-NS
Pneumatic and Electro-Pneumatic Trainer

AE-V
Vacuum Technology Trainer

SAC
Silent Air Compressor Unit

Hydraulics

AE-HD
Oleo-Hydraulic and Electro-Hydraulic Trainer

HPU
Hydraulic Power Unit

EDIBON SCADA System

Data Acquisition Board
Supervisory Software
62. Mechatronics. PLC AUTOMATION

62.1 PLC Options

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

62.2 Hardware Emulators

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

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
N-EM-CB    Pump Control
N-EM-MA    Embossing Machine

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

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

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

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

Vibration & Deformation
PLC-BS1  Vibration and/or Deformation Test Module

Temperature
PLC-BS2  Temperature Test Module for PLC

Pressure
PLC-BS3  Pressure Test Module for PLC

Flow
PLC-BS4  Flow Test Module for PLC

Ovens
PLC-BS5  Ovens Test Module for PLC

Level
PLC-BS6  Liquid Level Test Module for PLC

Tachometer
PLC-BS7  Tachometers Test Module for PLC

Proximity
PLC-BS8  Proximity Test Module for PLC

Pneumatics
PLC-BS9  Pneumatic Test Module for PLC

Lights
PLC-BS10 Light Test Module for PLC
62.4 PLC Workstations Applications

**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

**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-FS: Filling Workstation
- AE-PLC-CRS: Corking Workstation
- AE-PLC-APB: Bottle Opening Workstation
- AE-PLC-CP: Industrial Control Processes Workstation

**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

62.5 Industrial Applications

**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-IN: Greenhouse Application
- AE-PLC-SE: Elevator Control Application
- AE-PLC-SPA: Automatic Sectional Door Application
- AE-PLC-SA: Industrial Kneader Application

**Renewable Energy Applications**
- AE-PLC-EE: 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

**Power Applications**
- AE-PLC-SP: Power System Application
- AE-PLC-ME: Electrical Machines Application

**Smart Grid Applications**
- AE-PLC-SM: Smart Grid System Application

62.6 Flexible Manufacturing Systems (FMS)

**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

**Automation Software**
- AE-AS: Automation System Simulation Software
PLC MODULE FOR THE CONTROL OF INDUSTRIAL PROCESSES (PLC-PI) TO BE USED WITH MANY SCADA UNITS:

63.1 Electricity

63.2 Energy

63.3 Renewable

63.4 Saving Energy

63.5 Mechanics

63.6 Fluid Mechanics

63.7 Thermodynamics & Thermotechnics

63.8 Chemical Engineering

63.9 Food & Water Technologies

63.10 Environment

63.11 Process Control
MECHATRONICS, AUTOMATION & COMPUNECHATRONICS EXPANSIONS

All units in this area using SCADA can additionally use:

**SOFTWARE**

- Interactive Computer Aided Instruction Software System (ICAI)
- Classroom Manager
- Student Labsoft (Practices, Calculations, Graphics, Results)
- Faults Simulation System (FSS)

**SCADA**

- Supervisory Control and Data Acquisition (SCADA)
- Control Interface included in the unit
- Electronic White Board (EWB)

**MultiPost Options SCADA-NET**

**Technical Distance Learning**

EDIBON SCADA-NET Many units, many students

EDIBON Cloud Learning units in one city, students in other cities

Details in pages: 101, 102, 103 and 104
71. Mechanics. MECHANICAL ENGINEERING

71.1 Basic concepts

LIMEBA Basic Mechanics Integrated Laboratory

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

71.3 Mechanisms

MBD Slider Crank Mechanism
MYE Scotch Yoke Mechanism
MBM1 Slotted Link Mechanism
MBM2 Whitworth Quick Return Mechanism
MCA Four-bar Mechanism

Other available units:
MSDA Unit to Study Simple Drives Assembly
MCDA Unit to Study Combined Drives Assembly
MGTA Unit to Study Gear Train Assembly
MF Inertia Flywheel Unit

more information:
www.edibon.com>products>mechanics
71.4 Dynamics

- **MAC** Coupling Mechanism
- **MUN** Hook’s Joint Mechanism
- **MDA** Ackermann Steering Mechanism
- **MBLU** Bar Linkages Unit
- **MEX** Cam and Follower Mechanism
- **MBI** Crank Mechanism
- **MMEL** Winch Mechanism

**71.5 Vibrations**

- **MEER** Whirling of Shafts Unit
- **MEAL** Cam Analysis Unit
- **MDFC** Coriolis Force Demonstration Unit
- **MFCE** Centrifugal Force Unit
- **MG1** Gyroscope
- **MED** Static and Dynamic Balancing Unit
- **MES** Simple Balancing Unit

**Control Interface**

**Data Acquisition Board**

**Supervisory Software**

**Computer Controlled Critical Speed Investigation Unit**

**Computer Controlled Balance of Reciprocating Masses Unit**

**Computer Controlled Torsional Vibration Unit**

**Vibration of Coil Spring Unit**

**EDIBON SCADA System**
70 Mechanics

71.6 Friction

- MVL: Free Vibration Unit
- MVLF: Free & Forced Vibration Unit
- MEVLB: Unit for Studying Free Vibration of a Bar

71.7 Tribology

- MCF: Belt Friction Unit
- MEF: Friction Study Unit
- MCO: 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 Differential

- MCC: Gearbox
- MTE3: Epicyclic Gear Unit (3 element)
- MESE: Geared Systems Study Unit

72.3 Transmissions

- MEC: Overdrive Unit
- MBW: Borg-Warner Automatic Transmission Unit
- MDC: Differential-Crownwheel and Pinion
72.4 Engines Test Benches

**TBMC3**  Computer Controlled Test Bench for Single-Cylinder Engines, 2.2kW

**TBMC8**  Computer Controlled Test Bench for Single-Cylinder Engines, 7.5 kW

**TBMC12**  Computer Controlled Test Bench for Single-Cylinder and Two-Cylinders Engines, 11kW

**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

**TBMC-AGE**  Exhaust Gas Analyzer

72.5 Miscellaneous

**MEE**  Geared Lifting Machine

**MSH**  Simple Hydraulic System

**MGE**  Gear Generation Unit
74. Mechanics. CIM

AE-PLC-FMS1 Flexible Manufacturing System

75. Mechanics. HYDROPNEUMATICS AND ROBOTICS

75.1 Oleohydraulics

AE-HD Oleo-Hydraulic and Electro-Hydraulic Trainer

AE-AS Automation System Simulation Software

75.2 Pneumatic

AE-NS Pneumatic and Electro-Pneumatic Trainer

Other available units

AE-V Vacuum Technology Trainer

SAC Silent Air Compressor Unit
75.3 Hydropneumatic

AE-AS Automation System Simulation Software

75.4 Robotic

AE-BR Robotic Arm Station

AE-AS Automation System Simulation Software
77. Mechanics. STRENGTH OF MATERIALS

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

Photoelasticity Unit with Strain Gauges Measurement System

- **EFOC** Photoelasticity Unit with Strain Gauges Measurement System

Photoelasticity units:
- **EFO** Photoelasticity Unit
- **EFOV** Photoelasticity Unit with Artificial Vision System

77.2 Traction. Flexion. Bending. Torsion

- **EEU/20KN** Universal Material Testing Unit-20KN
- **EEFCR** Creep Testing Unit
- **MVV** Unsymmetrical Cantilever Unit
- **MUP** Universal Buckling Unit
- **MTP** Twist and Bend Machine
- **MFV** Universal Material Testing Unit-20KN
- **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
- **MTTU** Tensile Tester Unit

77.3 Fatigue. Hardness. Impact

- **EEFC** Computer Controlled Fatigue Testing Unit
- **EEIC** Charpy and Izod Impact Testing Unit
77.4 Structures

- **MFPG** Unit for studying Forces in a Jib Crane
- **MEMB** 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
- **MPOL** 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

- **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

78.3 Testing

- **TSCAC** Computer Controlled Air Duct Systems Unit
MECHANICS EXPANSIONS

All units in this area using SCADA can additionally use:

SOFTWARE
Interactive Computer Aided Instruction Software System
- Classroom Manager
- Student Labsoft
  - Practices
  - Calculations
  - Graphics
  - Results

DATA ACQUISITION
- Faults Simulation System
- Data Acquisition Software

SCADA
- Supervisory
- Control
- And
- Data
- Acquisition

MULTIPOST OPTIONS
- SCADA-NET
  - Industrial Control Application
  - EDIBON SCADA-NET
    - many units, many students
  - EDIBON Cloud Learning
    - units in one city, students in other cities

TECHNICAL DISTANCE LEARNING

Electronic White Board (EWB)
- LabVIEW
- USB stick

Details in pages: 101, 102, 103 and 104
81. Fluid Mechanics. BASIC CONCEPTS

81.1 Service Units

Hydraulics Bench

FME00

Basic Hydraulic Feed System

FME00/B

81.2 Fluid Concepts

Flow over Weirs

FME02

Orifice Discharge

FME04

Free and Forced Vortex

FME14

Fluid Statics and Manometry

FME34

Fluid Properties

FME35

Rotameter

FME36

81.3 General Fluid Applications

Impact of a Jet

FME01

Hydrostatic Pressure

FME08

Dead Weight Calibrator

FME10

Metacentric Height

FME11

Depression Measurement System (vacuum gauge)

FME26

Pitot Static Tube Module

FME32

81.4 Hydraulic Laws

Bernoulli’s Theorem Demonstration

FME03

NEW

Venturi, Bernoulli and Cavitation Unit

FME22

NEW

Osborne - Reynolds’ Demonstration

FME06

Horizontal Osborne-Reynolds Demonstration

FME31

Unit for the Study of Porous Beds in Venturi Tubes (Darcy’s Equation)

FME33

Pascal’s Module

FME34
81.5 Hydraulic Demonstration

- Flow Visualization in Channels
- Laminar Flow Demonstration
- Vortex Flow Meter
- Water Hammer
- Cavitation Phenomenon Demonstration
- Flow channel, 1 m. length

81.6 Pipes

- Energy Losses in Bends
- Energy Losses in Pipes
- Basic Pipe Network Unit

81.7 Hydraulic Machines: Pumps

- Series/Parallel Pumps
- Centrifugal Pump Characteristics

81.8 Hydraulic Machines: Turbines

- Axial Flow Turbine
- Pelton Turbine
- Francis Turbine
- Kaplan Turbine
- Radial Flow Turbine

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

Other available unit:

- USSB Unit to study Stability in Boats

www.edibon.com
82. Fluid Mechanics. DEMONSTRATION

- EGAC: Computer Controlled Water Hammer Unit
- BHI: Hydrostatics Bench & Fluid Properties
- LFA: Laminar Flow Visualization and Analysis Unit
- UVF: Hydrogen Bubble Flow Visualization Unit

83. Fluid Mechanics. PIPES

- AFTC: Computer Controlled Fluid Friction in Pipes, with Hydraulics Bench (FME00)
- AMTC: Computer Controlled Pipe Network Unit, with Hydraulics Bench (FME00)

84. Fluid Mechanics. FLOW, PRESSURE AND METERS

- HFCC: Computer Controlled Flow of Compressible Fluids Unit
- FPCC: Computer Controlled Unit to Study Flow through Packed Columns

Other available units:

- PVFA: Pipes, Valves and Fittings Assembly Unit
- AMCP: Assembly and Maintenance of a Centrifugal Pump Unit
- ASV: Assembly of a Shut-Off Valve Unit
- MRST: Measurement and Regulation Station Trainer
- GHST: Gas Home Supply Trainer
- WFPC: Computer Controlled Unit to Study Water Flow Principles
84.2 Pressure

- Manometers & Multimanometers (several types)
- Pressure Measurement and Calibration Unit
- Pressure Sensors Calibration System
- Air Pressure Maintained Water System Trainer

84.3 Viscosity

- Falling Sphere Viscometer and Drag Coefficient

85. Fluid Mechanics. HYDROLOGY

- Computer Controlled Unit for Transient Drainage Processes in Storage Reservoirs
- Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2m)

Other available unit:

- River Flow Simulator
86. Fluid Mechanics. FLOW CHANNELS

CFC  Computer Controlled Flow Channels (section: 80 x 300 mm.)

CAS  Sediment Transport Demonstration Channel

HVFLM-4  Mobile Bed and Flow Visualization Unit (working section: 4000 x 610 mm)

Other available unit:

WFPC  Computer Controlled Unit to Study Water Flow Principles


87.1 Pumps

PBOC  Computer Controlled Multipump Testing Bench

PBSPC  Computer Controlled Series/Parallel Pumps Bench

PBEAB  Pumps Alignment and Study Bench

Individual Hydraulic Machines Pumps:

PBzC  Computer Controlled Multipump Testing Bench
PBCC  Computer Controlled Centrifugal Pump 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
87.2 Turbines

Turbines (conventional)

TPC Computer Controlled Pelton Turbine

TKC Computer Controlled Kaplan Turbine

TFC Computer Controlled Francis Turbine

Turbines (special)

TFRC Computer Controlled Radial Flow Turbine

HTRC Computer Controlled Experimental Reaction Turbine

TFAC Computer Controlled Axial Flow Turbine

HTIC Computer Controlled Experimental Impulse Turbine
87.3 Fans

HVCC  Computer Controlled Centrifugal Fan Teaching Trainer

HVAC  Computer Controlled Axial Fan Teaching Trainer

87.4 Compressors

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

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

Aerodynamics. ADVANCED

TA1200/1200  Computer Controlled Aerodynamic Tunnel, 1200 x 1200 mm

TA500/500  Computer Controlled Water Tunnel, 500 x 500 mm
FLUID MECHANICS EXPANSIONS

All units in this area using SCADA can additionally use:

**SOFTWARE**
- Interactive Computer Aided Instruction Software System (ICA)
- Classroom Manager
- Student Labsoft Practices Calculations Graphics Results
- Faults Simulation System (FSS)
- Data Acquisition Software (DAS)

**SCADA**
- Supervisory Control and Data Acquisition (SCADA)
- Electronic White Board (EWB)

**MULTIPOST OPTIONS SCADA-NET**
- Industrial Control Application (PLC)
- EDIBON SCADA-NET many units, many students

**EDIBON Cloud Learning**
- units in one city, students in other cities

**TECHNICAL DISTANCE LEARNING**
- LabVIEW kit

Details in pages: 101, 102, 103 and 104
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**

- **TCRC** Computer Controlled Refrigeration Cycle Demonstration Unit
- **TRAC** Computer Controlled Absorption Refrigeration Unit

**Refrigeration. SPECIAL APPLICATIONS**

- **TPVC** Computer Controlled Vortex Tube Refrigerator Unit
- **TRRC** Computer Controlled Refrigeration Unit with Refrigeration and Freezing Chamber
- **TRCAC** Computer Controlled Unit for the Study of a Refrigeration Circuit with Variable Load
THARA2C/2 Computer Controlled Double Chamber Refrigerator Module

TRCC Computer Controlled Refrigeration Unit with Open Compressor

TRD2PC Two Doors Domestic Refrigeration System Trainer

TRCVC Computer Controlled Vapour-Compression Refrigeration Unit

THALAC/2 Computer Controlled Multiple Compressor Refrigeration Control

TCRCT Compression Refrigeration Unit with Different Capillary Tubes

THER Heat Exchangers in the Refrigeration Unit

EDIBON SCADA System and PID CONTROL

Control Interface

Data Acquisition Board

Supervisory Software

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<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCFR</td>
<td>Computer Controlled Capacity Control and Faults in Refrigeration Systems Unit</td>
</tr>
<tr>
<td>TAMR</td>
<td>Assembly and Maintenance in Refrigeration Systems Unit</td>
</tr>
<tr>
<td>TCR</td>
<td>Electrical Connection of Refrigerant Compressors Unit</td>
</tr>
<tr>
<td>TMR</td>
<td>Recovery – Evacuating and Charging Module</td>
</tr>
<tr>
<td>TECR</td>
<td>Electrical Installations in Refrigeration Systems Unit</td>
</tr>
<tr>
<td>TKIT3</td>
<td>Recovery – Evacuating and Charging Module</td>
</tr>
<tr>
<td>TEIR</td>
<td>Electrical Installations in Refrigeration Systems Unit</td>
</tr>
<tr>
<td>TEVC</td>
<td>Computer Controlled Ventilation Trainer</td>
</tr>
</tbody>
</table>

**Freezers, Cooling and Ventilation**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPCC</td>
<td>Computer Controlled Contact Plate Freezer</td>
</tr>
<tr>
<td>TCPISC</td>
<td>Computer Controlled Cooling Plant with Ice Store</td>
</tr>
<tr>
<td>TSCAC</td>
<td>Computer Controlled Air Duct Systems Unit</td>
</tr>
<tr>
<td>TEVC</td>
<td>Computer Controlled Ventilation Trainer</td>
</tr>
</tbody>
</table>
**TERA** Refrigeration Water Recirculation Unit

**TERA/A** Refrigeration Water Recirculation Advanced Unit

**Refrigeration • Air Conditioning • Heat Pump**

**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))

**TRAMC** Computer Controlled Refrigeration and Air Conditioning Modular Unit

**NEW** TERA Refrigeration Water Recirculation Advanced Unit

**NEW** THIBAR44C Computer Controlled Heat Pump • Air Conditioning • Refrigeration Unit with Cycle Inversion Valve (four condensers (water and air) and four evaporators (water and air))

**NEW** TRAMC Computer Controlled Refrigeration and Air Conditioning Modular Unit

**EDIBON SCADA System**
91.2 Air Conditioning

Air Conditioning, CYCLES

TAAC Computer Controlled Air Conditioning Laboratory Unit

TARC Computer Controlled Recirculating Air Conditioning Unit

Air Conditioning, SPECIAL APPLICATIONS

TAAUC Computer Controlled Automobile Air Conditioning Trainer

TACC Computer Controlled Air Conditioning Unit with Climatic Chamber and Water Chiller

Air Conditioning, INDUSTRIAL SYSTEMS

TSAC Computer Controlled Air Conditioning System with Climatic Chamber

TACS Split Air Conditioner Unit

TSCAC Computer Controlled Air Duct Systems Unit

Air Conditioning, MAINTENANCE AND FAULTS

TEFA Electrical Faults in Air Conditioning Systems Unit
Air Conditioning. SEVERAL EVAPORATOR AND CONDENSER OPTIONS

THAAAC  Computer Controlled Air Conditioning Unit (one condenser (air) and one evaporator (air))

THALAC  Computer Controlled Air Conditioning Unit (one condenser (water) and one evaporator (air))

THA2AC  Computer Controlled Air Conditioning Unit (two condensers (water and air) and one evaporator (air))

91.3 Heat Pumps

Heat Pumps • Air Conditioning • Refrigeration

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))

Heat Pumps. SPECIAL

TBTC  Computer Controlled Thermo-Electric Heat Pump

TBCF  Bomb Calorimeter Set for Testing Calorific Value of Fuels
9.4 Cooling Towers

- **TTEC** Computer Controlled Bench Top Cooling Tower

9.5 Heating

- **EACC** Computer Controlled Hot Water Production and Heating Teaching Unit
- **TEHSC** Computer Controlled Unit to Study the Efficiency of a Heating System

- **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

**TICC** Computer Controlled Heat Exchangers Training System

![Diagram of TICC System](image1)

**TIFCC** Computer Controlled Cross Flow Heat Exchanger

![Diagram of TIFCC System](image2)

**TIVAC** Computer Controlled Steam to Water Heat Exchanger

![Diagram of TIVAC System](image3)

92.2 Compact options

**TIFCC** Computer Controlled Cross Flow Heat Exchanger

![Diagram of TIFCC System](image4)

**TIAAC** Computer Controlled Water-to-Air Heat Exchanger Unit

![Diagram of TIAAC System](image5)
93. Thermodynamics. HEAT TRANSFER

93.1 Modular Basic options

**Computer Controlled Heat Transfer Series**

- **TXC/L**: Linear Heat Conduction Module
- **TXC/R**: Radial Heat Conduction Module
- **TXC/RC**: Radiation Heat Transfer Module
- **TXC/TC**: Combined Free and Forced Convection and Radiation Module
- **TXC/G**: Extended Surface Heat Transfer Module
- **TXC/CR**: Radial Heat Conduction Module
- **TXC/SE**: Radiation Heat Transfer Module
- **TXC/CC**: Linear Heat Conduction Module
- **TXC/MM**: Metal to Metal Heat Transfer Module
- **TXC/TE**: Ceramic Heat Transfer Module
- **TXC/LG**: Insulating Material Heat Transfer Module
- **TXC/FF**: Unsteady State Heat Transfer Module
- **TXC/TI**: Three Axes Heat Transfer Module

**NEW**

**TSTCC**

**Computer Controlled Heat Transfer Series**

- **EDIBON SCADA System and PID CONTROL**

**TCCC**

**Computer Controlled Heat Conduction Unit**

- **TXC/L**: Linear Heat Conduction Module
- **TXC/R**: Radial Heat Conduction Module

**NEW**

**TCLGC**

**Computer Controlled Thermal Conductivity of Liquids and Gases Unit**

- **EDIBON SCADA System and PID CONTROL**

**Basic options**

- **Heat Conduction**
- **Conductivity**

**NEW**
**Radiation**

**TRTC** Computer Controlled Thermal Radiation and Light Radiation Unit

**Convection**

**TCLFC** Computer Controlled Free and Forced Convection Heat Transfer Unit

**Temperature Measurement Unit**

**TMT** Temperature Measurement Unit

**Temperature Measurement Training Unit**

**TEMT** Temperature Measurement Training Unit

**Advanced options**

**Boiling**

**TCEC** Computer Controlled Boiling Heat Transfer Unit

**TFEC** Computer Controlled Flow Boiling Demonstration Unit

**Fluidisation**

**TTLFC** Computer Controlled Fluidisation and Fluid Bed Heat Transfer Unit

**LFFC** Computer Controlled Fixed and Fluidised Bed Unit
Special options

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

TRLC  Computer Controlled Recycle Loops Unit

TMCP  Pressure Measurement and Calibration Unit

TMHA  Air Humidity Measurement Unit
94. Thermodynamics, COMBUSTION, NOZZLES, STEAM

94.1 Combustion

TVCC  Computer Controlled Combustion Laboratory Unit

TVPLC  Computer Controlled Flame Propagation and Stability Unit

94.2 Nozzles

TFTC  Computer Controlled Nozzle Performance Test Unit

TPT  Nozzle Pressure Distribution Unit

94.3 Steam

TCESC  Computer Controlled Separating and Throttling Calorimeter

TECMC  Computer Controlled Marcet Boiler Unit

TEGVC  Computer Controlled Steam Generation Unit

TSMEC  Computer Controlled Steam Motor and Energy Conversion Unit

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

TBMC3 Computer Controlled Test Bench for Single-Cylinder Engines, 2.2kW

TBMC12 Computer Controlled Test Bench for Single-Cylinder and Two-Cylinders Engines, 11kW

TBMC75 Computer Controlled Test Bench for Four-Cylinders Engines, 75kW

95.2 Hybrid Test Benches

TMHC Computer Controlled Test Bench for Hybrid Engine

95.3 Generators

TMSC Computer Controlled Stirling Motor

TORC/A Advanced Computer Controlled Organic Rankine Cycle Unit
95.4 Calorimeters

**TBMC-CG** Computer Controlled Exhaust Gas Calorimeter

**TBMC-AGE** Exhaust Gas Analyzer

**PFGA** Portable Flue Gas Analyzer

### 96. Thermodynamics. THERMAL TURBINES

**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
97. Thermodynamics. OIL EXTRACTION

EOEUC  Computer Controlled Oil Extraction Unit

EFEUC  Computer Controlled Fracking Extraction Unit

98. Thermodynamics. 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
THERMODYNAMICS & THERMOTECHNICS EXPANSIONS

All units in this area using SCADA can additionally use:

SOFTWARE

Interactive Computer Aided Instruction Software System

- Classroom Manager
- Student Labsoft
  - Practices Calculations
  - Graphics Results

Faults Simulation System

SCADA

Supervisory Control and Data Acquisition

MULTIPOST OPTIONS SCADA-NET

EDIBON Cloud Learning units in one city, students in other cities

EDIBON SCADA-NET

many units, many students

TECHNICAL DISTANCE LEARNING

Electronic White Board

EDIBON SCADA-NET

Electronic White Board (EWS)

Electronic White Board (EWS)

LabVIEW kit

USB kit

Details in pages: 101, 102, 103 and 104
101. Process Control. FUNDAMENTALS

SAIT Transducers and Instrumentation Trainer

BS Modular System for the Study of Sensors

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

Available application modules

- 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

Accessories

- BSPC Computer Controlled Basic Unit
- BSUB Base Unit
- BS1 Vibration and/or Deformations Test Module
- BS2 Temperature Test Module
- BS3 Pressure Test Module
- BS4 Flow Test Module
- BS5 Oven Test Module
- BS6 Liquid Level Test Module
- BS7 Tachometer Test Module
- BS8 Proximity Test Module
- BS9 Pneumatic Test Module
- BS10 Light Test Module
102. Process Control. APPLICATIONS

UCPNCV Computer Controlled Process Control System (with electronic control valve + pneumatic control valve + speed controller)

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

UCPNCV-T Set for Temperature Process Control
UCPNCV-C Set for Flow Process Control
UCPNCV-N Set for Level Process Control
UCPNCV-PH Set for Water Pressure Process Control
UCPNCV-CT Set for Conductivity and TDS Process Control

Available versions:
UCP Computer Controlled Process Control System (with electronic control valve)
UCPCN Computer Controlled Process Control System (with pneumatic control valve)
UCPCV Computer Controlled Process Control System (with speed controller)

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
CTAC  Computer Controlled Coupled Tanks System

CMDVC  Computer Controlled Multivariable Control Unit for Vacuum Degassing

CMDAC  Computer Controlled Multivariable Control Unit for Stirrer Tank

103. Process Control. CONTROLLERS

CECI  Industrial Controllers Trainer

CMDVC

CEAC  Controller Tuning Trainer

NEW

CMDAC

NEW

CMDVC

NEW

CMDVC

NEW

CMDVC

NEW
Computer Controlled Process Control Plant with Industrial Instrumentation and Service Module (Flow, Temperature, Level and Pressure)

Available versions:

- **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)
PROCESS CONTROL EXPANSIONS

All units in this area using SCADA can additionally use:

Details in pages: 101, 102, 103 and 104
111. Chemical Engineering. BASIC UNIT OPERATIONS

### 111.1 Distillation
- UDCC Computer Controlled Continuous Distillation Unit
- UDDC Computer Controlled Batch Distillation Unit

### 111.2 Absorption
- CAGC Computer Controlled Gas Absorption Column
- CAPC Computer Controlled Wetted Wall Gas Absorption Column

### 111.3 Evaporation
- EPAC Computer Controlled Rising 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

### 111.4 Extraction
- UELLC Computer Controlled Liquid-Liquid Extraction Unit
- UESLC Computer Controlled Solid-Liquid Extraction Unit
112. Chemical Engineering. GENERAL UNIT OPERATIONS

112.1 Mass Transfer

**QDTLC** Computer Controlled Liquid Mass Transfer and Diffusion Coefficient Unit

**QDTGC** Computer Controlled Gaseous Mass Transfer and Diffusion Coefficient Unit

112.2 Adsorption

**QALFC** Computer Controlled Fixed Bed Adsorption Unit

**QSAC** Computer Controlled Adsorptive Air Drying Unit

112.3 Physical Processes

**QCCC** Computer Controlled Cracking Column

**QUCC** Computer Controlled Crystallization Unit
113. Chemical Engineering. CHEMICAL REACTORS

113.1 Modular and Big Reactors

Computer Controlled Chemical Reactors Training System

EDIBON SCADA system and PID CONTROL

QRUBI. Base Service Unit
QUSC. Base Service Unit
Available Chemical Reactors to be used with the Base Service Unit (QRUBI) and SCADA System

QRIA. Isothermal Reactor with Stirrer
QRD: Isothermal Reactor with Stirrer and Distillation
QRFT. Tubular Flow Reactor
QRD: Adiabatic and Isothermal Reactor
QRA. Reactors with Stirrer in Series

113.2 Modular and Small Reactors

Computer Controlled Chemical Reactors Trainer

EDIBON SCADA system and PID CONTROL

QRSC. Base Service Unit
Available Chemical Reactors to be used with Service Unit (QUSC) and SCADA System

QRCAC. Continuous Stirred Tank Reactor
QRTC. Tubular Flow Reactor
QRDC. Batch Reactor
QRC. Stirred Tank Reactors in Series
QLC. Laminar Flow Reactor
QRC. Plug Flow Reactor

NEW
NEW
113.3 Compact Reactors

**ORCC** Computer Controlled Catalytic Reactors

**QRALC** Computer Controlled Airlift Reactor

**QREC** Computer Controlled Batch Enzyme Reactor

114. Chemical Engineering. CHEMICAL PROCESS

### 114.1 Physical-Chemical Process

**QCDIC** Computer Controlled Disc Centrifuge

**EMLS** Liquid/Solid Mixing Unit

**EEL** Corrosion Study Unit

**ESED** Sedimentation Study Unit

**QMS** Solids Handling Study Unit

**EII** Ion Exchange Unit
114.2 Filtering

**TFUC**  
Computer Controlled Continuous and Batch Filtration Unit

**PFTC**  
Computer Controlled Drum Cell Filter

**QEDC**  
Computer Controlled Batch Solvent Extraction and Desolventising Unit

**EFLPC**  
Computer Controlled Deep Bed Filter Unit

114.3 Solvent

**LFFC**  
Computer Controlled Fixed and Fluidised Bed Unit

**EFLPC**  
Computer Controlled Deep Bed Filter Unit

**TFUC**  
Computer Controlled Continuous and Batch Filtration Unit

**EFLPC**  
Computer Controlled Deep Bed Filter Unit

114.4 Heat Transfer

**LFFC**  
Computer Controlled Fixed and Fluidised Bed Unit

**TCEC**  
Computer Controlled Boiling Heat Transfer Unit

**TFUC**  
Computer Controlled Continuous and Batch Filtration 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

**TFUC**  
Computer Controlled Continuous and Batch Filtration 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
114.5 Food Technology

**SBANC** Computer Controlled Tray Drier

**SSPC** Computer Controlled Spray Drier

**SDCC** Computer Controlled Spray Dryer and Chiller Unit

114.6 Environment

**PLGC** Computer Controlled Gas Washing Processing Plant

**PPDAC** Computer Controlled Water Demineralization and Processing Plant

**EPIRC** Computer Controlled Pyrolysis Unit
Mass Transfer

**TTEC** Computer Controlled Bench Top Cooling Tower

**FPCC** Computer Controlled Unit to Study Flow through Packed Columns

EDIBON SCADA System
All units in this area using SCADA can additionally use:

**SOFTWARE**

- Interactive Computer Aided Instruction Software System (ICA)
- Classroom Manager
- Student Labsoft Practices Calculations Graphics Results
- Faults Simulation System (FSS)

**SCADA**

Supervisory Control and Data Acquisition

**MULTIPOST OPTIONS SCADA-NET**

EDIBON SCADA-NET many units, many students

**EDIBON CLOUD LEARNING**

EDIBON Cloud Learning units in one city, students in other cities

Details in pages: 101, 102, 103 and 104
121. Food Technology. UNIT OPERATIONS

121.1 Basic Units Operations

**Pasteurizers**

- **PADC** Computer Controlled Teaching Autonomous Pasteurization Unit
- **PASC** Computer Controlled Laboratory Pasteuriser

**Driers**

- **SBANC** Computer Controlled Tray Drier
- **SSPC** Computer Controlled Spray Drier
- **SDCC** Computer Controlled Spray Dryer and Chiller Unit

**Miscellaneous**

- **ROUC** Computer Controlled Reverse Osmosis/Ultrafiltration Unit
- **VPMC** Computer Controlled Multipurpose Processing Vessel

121.2 General Pilot Plants

**AEHC** Computer Controlled Hydrogenation Unit

**EDLC** Computer Controlled Teaching Frigorific Tank

**EDSC** Computer Controlled Teaching Machine for Putting into a Container Solids

**TFDC** Computer Controlled Contact Plate Freezer.

**AEDC** Computer Controlled Deodorizing Unit

**EDC** Computer Controlled Teaching Unit for Packing Liquids

**EDPC** Computer Controlled Plate and Frame Filter Press
122. Food Technology. MILK PROCESS

- **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
- **YDC**: Computer Controlled Teaching Yogurt Incubator
RDC Computer Controlled Teaching Cottage Cheese Maker

AEOC Computer Controlled Cheese Vat

FQDC Computer Controlled Teaching Cheese Melter

PACC Computer Controlled Continuous Cycle Oil Production Plant

123. Food Technology. OIL PROCESS
FOOD & WATER TECHNOLOGIES EXPANSIONS

All units in this area using SCADA can additionally use:

**SOFTWARE**
Interactive Computer Aided Instruction Software System

- Classroom Manager
- Student Labsoft Practices Calculations Graphics Results

Faults Simulation System

**SCADA**
Supervisory Control And Data Acquisition

MULTIPOST OPTIONS SCADA-NET
ESN
EDIBON SCADA-NET many units, many students

EDIBON Cloud Learning units in one city, students in other cities

TECHNICAL DISTANCE LEARNING

Electronic White Board (EWB)

Details in pages: 101, 102, 103 and 104
131.2 Moisture

PAHSC Computer Controlled Soil Moisture Suction Sand Unit

NEW

EDIBON SCADA System

Control Interface

Data Acquisition Board

Supervisory Software

PL Demonstration Lysimeter

PPD Drain Permeameter

PEIF Filterability Index Unit

PEFP Permeability/Fluidisation Studies Unit

PEI Demonstration Infiltration Unit

131.3 Sedimentation

PDSC Computer Controlled Sedimentation Tank

NEW

EDIBON SCADA System

Control Interface

Data Acquisition Board

Supervisory Software

SESED Sedimentation Study Unit

SPFB Sedimentation, Precipitation and Flocculation Unit
132. Environment. WATER TREATMENT

### 132.1 Digesters

**PDAC** Computer Controlled Aerobic Digester

**PDANC** Computer Controlled Anaerobic Digester

**EDIBON SCADA System** and PID CONTROL

### 132.2 Flocculation and Aeration

**PEFC** Computer Controlled Flocculation Test Unit

**PEAC** Computer Controlled Aeration Unit

**EDIBON SCADA System**

### 132.3 Water Treatment Unit Operations

**EFLPC** Computer Controlled Deep Bed Filter Unit

**POAC** Computer Controlled Advanced Oxidation Unit

**EFLPC** Computer Controlled Water Quality Control Unit

**POAC** Computer Controlled Advanced Oxidation Unit

**EDIBON SCADA System** and PID CONTROL

**EDIBON SCADA System**

**NEW**

**EDIBON SCADA System**

**NEW**

**EDIBON SCADA System**

**ION** Ion Exchange Unit
132.4 Water Treatment Plants

**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

**PFADC** Computer Controlled Dissolved Air Flotation Unit

**PPBC** Computer Controlled Biofilm Process Unit

**PHCC** Computer Controlled Hydrocyclone

133. Environment. POLLUTION

**ECASC** Computer Controlled Subterranean Water Pollution Unit
133.2 Air Pollution

**PSNC** Computer Controlled Gas Flow Classification Unit

**PCGC** Computer Controlled Gas Cyclone

**PLGC** Computer Controlled Gas Washing Processing Plant

**TVCC** Computer Controlled Combustion Laboratory Unit

**PSMC** Computer Controlled Magnetic Separation Unit

**PFTC** Computer Controlled Drum Cell Filter

**EPIRC** Computer Controlled Pyrolysis Unit

**TVPLC** Computer Controlled Flame Propagation and Stability Unit
ENVIRONMENT EXPANSIONS

All units in this area using SCADA can additionally use:

**SOFTWARE**

- Interactive Computer Aided Instruction Software System (ICA)
- Classroom Manager
- Student Labsoft
  - Practices
  - Calculations
  - Graphics
  - Results
- Faults Simulation System (FSS)

**SCADA**

- Supervisory Control and Data Acquisition (SCADA)
- Electronic White Board (EWB)
- LabVIEW kit
- EWB kit

**MULTIPOST OPTIONS SCADA-NET**

- EDIBON SCADA-NET
  - many units, many students

**TECHNICAL DISTANCE LEARNING**

- EDIBON Cloud Learning
  - units in one city, students in other cities

Details in pages: 101, 102, 103 and 104
### 141. Biomedical. BIOMEDICAL APPLICATION

<table>
<thead>
<tr>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIADC</td>
<td>Computer Controlled Biomedical Auditory and Diagnostic Teaching Unit</td>
</tr>
<tr>
<td>BIHBP</td>
<td>Computer Controlled Biomedical Human Biosignals and Parameters Teaching Unit</td>
</tr>
<tr>
<td>BISBC</td>
<td>Computer Controlled Biomedical Spirometry and Breath Teaching Unit</td>
</tr>
<tr>
<td>BIMAG</td>
<td>Biomedical Magnetotherapy Teaching Unit</td>
</tr>
<tr>
<td>BIMTE</td>
<td>Biomedical Microwave Thermal Effects Teaching Unit</td>
</tr>
<tr>
<td>BIPBS</td>
<td>Biomedical Patient Biosignals Simulator</td>
</tr>
</tbody>
</table>

### 142. Biomedical. BIOMEDICAL ENGINEERING CONCEPTS

See complete laboratory 14HE and 14TV

### 143. Biomedical. BIOMECHANICS

### 144. Biomedical. INDUSTRIAL BIOMEDICAL WITH SCADA

<table>
<thead>
<tr>
<th>Device</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIVE</td>
<td>Computer Controlled Steam Sterilizer</td>
</tr>
<tr>
<td>QRCC-IF</td>
<td>Flow Injection Analysis (FIA) Unit</td>
</tr>
</tbody>
</table>

Other available units:

- BLIO  Freeze Dryer
- EDILAB-ELEC1  Electrolyzer (3 Nl/h)
- EDILAB-ELEC2  Electrolyzer (60 Nl/h)
All units in this area using SCADA can additionally use:

- Interactive Computer Aided Instruction Software System (ICA)
- Classroom Manager
- Student Labsoft: Practices, Calculations, Graphics, Results
- Faults Simulation System (FSS)

Details in pages: 101, 102, 103 and 104
The ICAI is available for units in the following areas:

10. Physics
20. Electronics
30. Communications
40. Electricity
50. Energy
60. Mechatronics
70. Mechanics
80. Fluid Mechanics
90. Thermodynamics & Thermotechnics
100. Process Control
110. Chemical Engineering
120. Food & Water Technologies
130. Environment
140. Biomedical Engineering

The FSS is available for units in the following areas:

10. Physics
20. Electronics
30. Communications
40. Electricity
50. Energy
60. Mechatronics
70. Mechanics
80. Fluid Mechanics
90. Thermodynamics & Thermotechnics
100. Process Control
110. Chemical Engineering
120. Food & Water Technologies
130. Environment
140. Biomedical Engineering

20. Electronics. EDAS/ VIS. Data Acquisition System/Virtual Instrumentation System (for Basic Electronics).
30. Communications. EDAS/ VIS. Data Acquisition System/Virtual Instrumentation System (for Basic Communications).
40. Electricity. EDAS/ VIS. Data Acquisition System/Virtual Instrumentation System (for Basic Electricity).
70. Mechanics. BDAS: Basic Data Acquisition System and Sensors (for Basic Mechanics).
NOTE: This Real Industry System can be used with ANY EDIBON unit that works with SCADA.

EDIBON Software Development KIT, Powered by NI LabVIEW™

EXAMPLE of unit with EDIBON LabVIEW Kit

LabVIEW®

LabVIEW®

Premium suite License Included
EDIBON SCADA-NET SYSTEMS

ESN Applications: In all EDIBON 14 areas

- Having laboratory and classroom at same place.
- Teaching theory and practice at the same time.
- 30 students working simultaneously.
- Students to understand concepts quickly and clearly by using EDIBON Advanced Technology.

... and more.

ESN

The complete laboratories supplied by EDIBON allow:

New concept of Teaching Laboratories

Local net for 30 students

Teacher computer
**EDIBON CLOUD LEARNING**

**MAIN ADVANTAGES** of this Technology

- **Reliability**
  - Centralized and efficient system

- **Security & Privacy**
  - Restricted Access and Confidentiality

- **Flexibility**
  - Location and Device independence

- **Cost Reduction & Time Saving**
  - Simultaneity. Multiple users can work at the same time

**ECL is divided in TWO PLATFORMS**

**Users Online Platform**

The **administrators** have full control over their Laboratories thanks to the powerful Class-Administrator Tool that allows the users management, logs visualization and progression monitoring. It also enables to assign users permissions to let them control EDIBON Units or just display them. Furthermore, the administrator can upload & download Measurements, data and Multimedia resources.

The **users** can learn interactively in a flexible environment as if they were in the Laboratory, accessing through the Remote App to work with EDIBON Units. Several users can work with one unit or one user with several units. The users can also Upload and Download Measurements, data and graphs, Multimedia resources and Reports.

**Remote App Platform**

Thanks to the Remote App Platform, the users can control EDIBON Units & EDIBON SCADA Software as if they were in the laboratory and share their expertise with the Users Community.
ALL EDIBON Business Models

“DAY BY DAY” (D/D)

PROJECTS AND COMPLETE LABORATORIES

TECHNICAL EDUCATION
TURN KEY PROJECTS (TKP)

EDIBON CLOUD LEARNING (ECL)

PILOT PLANTS AND CUSTOM MADE UNITS

COURSES

CONVENTIONAL BUSINESS

Needs from labs analysis.

End customer choose Teaching Equipment from available market information.

Tenders.

Orders.

Supply.

Etc.
PROJECTS

PMU. Multilateral Projects: THE WORLD BANK, ADB, IDB, EU, etc.

PBI. Bilateral Projects: JICA, KOICA, giz, etc.

PP. Projects with own money.

PR. Other projects.

COMPLETE LABORATORIES

10 1HE/1TV. Physics Laboratory

20 2HE/2TV. Electronics Laboratory

30 3HE/3TV. Telecommunications Laboratory

40 4HE/4TV. Electricity Laboratory

50 5HE/5TV. Energy Laboratory

5RHE/5RTV. Renewable Energy
5TC. Energy Training Center

6HE/6TV. Mechatronics Laboratory

7HE/7TV. Mechanics Laboratory

8HE/8TV. Fluid Mechanics Laboratory

9HE/9TV. Thermodynamics & Thermotechnics Laboratory

10HE/10TV. Process Control Laboratory

10PCTC. Process Control and Maintenance Training Center

11HE/11TV. Chemical Engineering Laboratory
Special Laboratories

11PTC. Petroleum Training Center

12HE/12TV. Food Technology Laboratory

13HE/13TV. Environment Laboratory

14HE/14TV. Biomedical Engineering Laboratory

20SKILL. New Technologies Technical Skills Center

20GREEN. Green Laboratory

20AIRP. Airport Laboratory

20TTC. Teachers Technical Training and Applied Research Center

20TDL. Technical Professional Distance Learning
Higher Technical Education Training Center (HTETC)

List of main technical Degrees / Departments / Careers:

- Aeronautics Eng.
- Agricultural Eng.
- Agricultural Industries Eng.
- Architecture.
- Automatic Eng.
- Chemical Eng.
- Chemistry.
- Civil Eng.
- Computer Science and Eng.
- Ecological Eng.
- Electrical Eng.
- Electronics Eng.
- Energetic Eng.
- Environmental Eng.
- Food Eng.
- Forestry Eng.
- Geological, Mines and Oil Eng.
- Geology.
- Industrial Eng.
- Marine Eng.
- Material Eng.
- Mechanical Eng.
- Metallurgy Eng.
- Naval Eng.
- Physics Eng.
- Process Eng.
- Systems Eng.
- Etc...

Technical and Vocational Education Training Center (TVETC)

List of main Technical Specialities:

- Agricultural.
- Agricultural Industries.
- Automotive.
- Chemistry.
- Civil Eng.
- Communications.
- Electrical.
- Electronics.
- Fluid Mechanics.
- Food Eng.
- Industrial Chemical.
- Maintenance.
- Maritime and Fishing.
- Mechanical-Manufacture.
- Mechanical-Metal.
- Refrigeration and Air Conditioning.
- Etc...
EDIBON CLOUD LEARNING (ECL)

Main Advantages of this Technology

- **Reliability**: Centralized and efficient system
- **Security & Privacy**: Restricted access and confidentiality
- **Flexibility**: Location and device independence
- **Cost Reduction & Time Saving**: Simultaneity. Multiple users can work at the same time

ECL is divided in TWO PLATFORMS

**Users Online Platform**

The **administrators** have full control over their Laboratories thanks to the powerful Class-Administrator Tool that allows the users management, logs visualization and progression monitoring. It also enables to assign users permissions to let them control EDIBON Units or just display them. Furthermore, the administrator can upload & download Measurements, data and Multimedia resources.

The **users** can learn interactively in a flexible environment as if they were in the Laboratory, accessing through the Remote App to work with EDIBON Units. Several users can work with one unit or one user with several units. The users can also upload and download Measurements, data and graphs, Multimedia resources and Reports.

**Remote App Platform**

Thanks to the Remote App Platform, the users can control EDIBON Units & EDIBON SCADA Software as if they were in the laboratory and share their expertise with the Users Community.
## Area 110. Chemical Engineering

See 114.3 Chemical process. SOLVENT subarea

- **QEDC** Computer Controlled Disc Centrifuge.

## Area 120. Food & Water Technologies

See 121.1 Basic Units Operations subarea

- **PADC** Computer Controlled Teaching Autonomous Pasteurization Unit.

See 121.2 Pilot Plants subarea

- **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.

See 123. Food Technology. OIL PROCESS subarea

- **PACC** Computer Controlled Continuous Cycle Oil Production Plant.

See 124. Food Technology. PILOT PLANTS subarea

- **LO00** 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”.

### CUSTOM MADE PILOT PLANTS

**EDIBON** has

- **KNOW HOW** 50 ENGINEERS
- **30 YEARS EXPERIENCE** FACILITIES

Customer can get a custom made solution from EDIBON

### CUSTOM MADE UNITS

**EDIBON** has

- **KNOW HOW** 50 ENGINEERS
- **30 YEARS EXPERIENCE** FACILITIES

Customer can get a custom made solution from EDIBON
PHOTOELASTICITY

BASIC CONCEPTS AND TEACHING APPLICATIONS WITH EDIBON/EFO UNIT

INSTRUMENTATION, REGULATION AND CONTROL IN LABORATORIES

LEARN THE CONTROL OF THE CONDITIONS OF A LABORATORY PROCESS
New and advanced 30,000 m² factory to design, innovate, manufacture and perform quality control procedures.

Manufacturing and Quality Control
We use the latest technology for that.
Several Quality Certificates.
See Know How

Company sustainability.
Due to technology designed last 30 years.
Due to second generation involved.
...and more.
Our services

Before the order arrives to EDIBON, we can do:

- Laboratories and workshops tentative design.
- Custom made financing proposal.
- Custom made units design.
- Advising of Teaching Technology of new Training Centre (Public or Private).
- EDIBON facilities and Research Department.
- Software in any language.

After-sales service

- Installation, Setting Up, Training and Technology Transfer.
- ISO9001 for After Sales Service.
- Continuous update and improvement of all units in our range.
- Expansions to be added to any unit, at any time.
- Continuous maintenance support.
- Cost free, Remote After Sales Service, for all SCADA units.
- Training Certificates.
- MOU for working together with top Higher Education Institutions.

So, full customer satisfaction!!

Warranties

More than 50 EDIBON engineers at your disposition.
Where is EDIBON Advanced Teaching Technology used?

In Ministries around the world such as:

<table>
<thead>
<tr>
<th>MOE</th>
<th>Ministry of Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL</td>
<td>Ministry of Labour</td>
</tr>
<tr>
<td>MOD</td>
<td>Ministry of Defence</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MOOG</td>
<td>Ministry of Oil and Gas</td>
</tr>
<tr>
<td>MOEN</td>
<td>Ministry of Energy</td>
</tr>
<tr>
<td>MOA</td>
<td>Ministry of Agriculture</td>
</tr>
</tbody>
</table>

Other Ministries with Technical Schools

Some countries using EDIBON Technology with full success:

- Afghanistan
- Albania
- Algeria
- Angola
- Argentina
- Australia
- Austria
- Armenia
- Azerbaijan
- Bahrain
- Bangladesh
- Barbados
- Belarus
- Belgium
- Belize
- Bhutan
- Bolivia
- Botswana
- Brazil
- Brunei
- Bulgaria
- Burkina Faso
- Cambodia
- Cameroon
- Canada
- Chile
- China
- Colombia
- Costa Rica
- Croatia
- Cyprus
- Dominica
- Dominican Rep.
- Ecuador
- Egypt
- El Salvador
- Estonia
- Ethiopia
- Finland
- France
- Georgia
- Ghana
- Greece
- Guatemala
- Guinea Ec.
- India
- Indonesia
- Lebanon
- Libya
- Italy
- Irak
- Iran
- Ireland
- Israel
- Ivory Coast
- Jordan
- Kazakhstan
- Kuwait
- Kyrgyzstan
- Latvia
- Lithuania
- Malaysia
- Mauricio
- Mauritania
- Mexico
- Mongolia
- Morocco
- Mozambique
- Myanmar
- Netherlands
- New Zealand
- Nicaragua
- Nigeria
- Oman
- Pakistan
- Palestine
- Panama
- Paraguay
- Peru
- Philippines
- Poland
- Portugal
- Qatar
- Romania
- Russia
- Saudi Arabia
- San Cristobal & N
- Serbia
- Singapore
- Slovakia
- South Africa
- South Korea
- Spain
- Sri Lanka
- Sudan
- Suriname
- Switzerland
- Syria
- Tajikistan
- Taiwan
- Thailand
- Trinidad & Tobago
- Tunisia
- Turkey
- Turkmenistan
- UAE
- Uganda
- Ukraine
- UK
- Uruguay
- USA
- Uzbekistan
- Venezuela
- Vietnam
- Yemen
- Zambia
Modern Laboratories

The complete laboratories supplied by EDIBON allow:

- Having laboratory and classroom at same place.
- Teaching theory and practice at the same time.
- 30 students working simultaneously.
- Students to understand concepts quickly and clearly by using EDIBON Advanced Technology.

... and more.