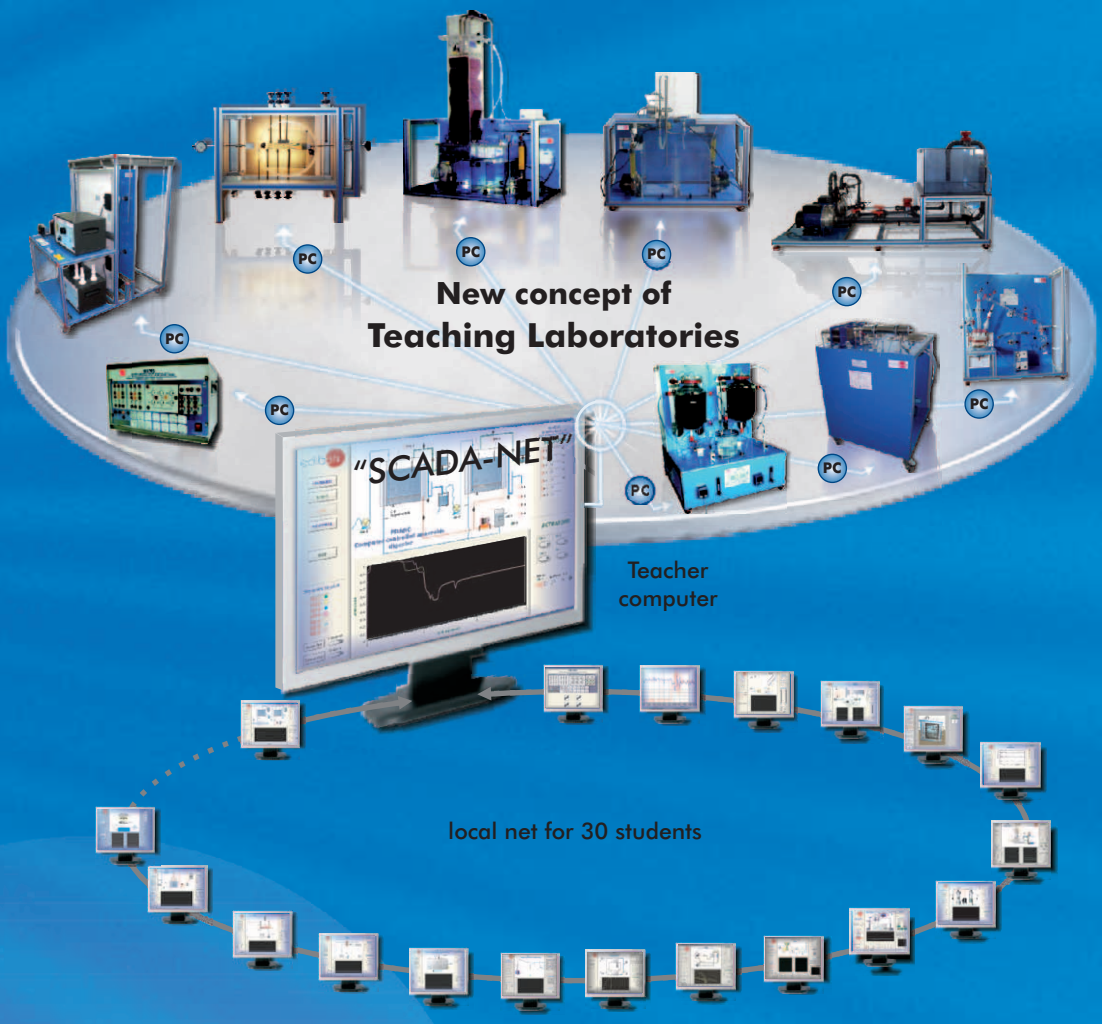
Technical Teaching Equipment

Short form
Catalogue

100%, own Design and own Manufacturing

ESN. SCADA-NET TEACHING SYSTEM



edibon

www.edibon.com

Edition: **ED01/11**
Date: **January/2011**

edibon

Technical Teaching Equipment

- Established in 1978. **Madrid. SPAIN**.
- We supply our Technical Teaching Units all over the world.
- All ours customers are satisfied.

Activities

- Design, manufacturing and commercialization of Technical Teaching Equipment.
- Installation, Starting-up, Training and Technology Transfer.
- Design of complete laboratories.

Research & Development

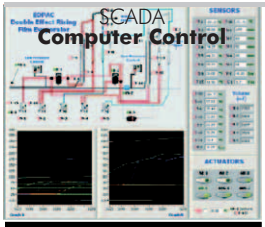
We design and manufacture:

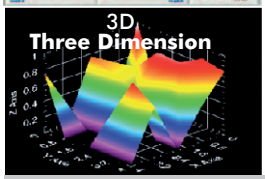
- All Units (Mechanics).
- All Electronics (Interfaces).
- All Software Packages (Lab View structure).
- All Manuals.

Products

- More than 2000 Technical Teaching Units and more than 1800 different Software Packages in most technical areas, as:

-Physics.	-Automation & Systems.	-Chemical Engineering.
-Electronics.	-Mechanics & Materials.	-Food and Water Technologies.
-Communications.	-Fluid Mechanics & Aerodynamics.	-Environment.
-Electricity.	-Thermodynamics & Thermotechnics.	
-Energy.	-Process Control.	





Technology

- We use several NEW Teaching Techniques:

*	-3D. EDIBON Three Dimensions System.	*	**-HYBRID. EDIBON Hybrid System (Energy).**
	-CAI. Computer Aided Instruction Software System.	*	-PHOTOELASTICITY. For Strength of Materials.
	-CAL. Computer Aided Learning Software (Results Calculation and Analysis).	*	**-SCADA. EDIBON Computer Control System: Control + Data Acquisition + Data Management.**
	-EDAS/VIS. EDIBON Data Acquisition System / Virtual Instrumentation System.	*	-PLC. Industrial Control using PLC.
	-MUAD. Electric Power Data Acquisition System.	*	-MINI ESN. EDIBON Mini Scada-Net System.
*	-RTC. EDIBON Real Time Control System (for advanced electronics).	*	**-ESN. EDIBON Scada-Net System.**
		*	-ETDL. EDIBON Technical Distance Learning System.
			-FSS. Faults Simulation System.

* = These Teaching Techniques are EDIBON PATENT.

Customers

- Higher Education:
  Universities, Colleges of Technology, Engineering Schools, etc.
- Technical Level:
  Technical and Vocational Schools, Industrial Colleges, etc.
- Secondary Education: Physics and basic teaching units.
- Industrial Training: Electricity, Oil, Mine Training Centers, etc.
- and...Research Centers.

Quality

- 4 of ISO 9000 : Quality Management for Design, Manufacturing, Commercialization and After-sales service of Teaching Equipment.
- ISO 14000 Certificate. (Environmental management).
- EMAS. ECO-Management and Audit Scheme. (Environmental management).
- "Worlddidac Quality Charter" Certificate. Worlddidac Association (located in Switzerland) confers this certificate to EDIBON.
- European Union Certificate (total safety).

Guarantees

- EDIBON offers with every unit supplied:
  - Sophisticated and complete quality control.
  - Components control during the life-time of the unit.
  - More than 10 full-time designing engineers.
  - 3 years guaranty against any manufacturing defect.
  - Company structure and future.
  - Maintenance (EDIBON provides 8 manuals with each unit supplied).
  - Sustentability for any unit supplied.
  - Full customer satisfaction.

INDEX

Units

Note: For complementary units in any area see EDILAB products. (www.edilab.es/BETA/products)

Complete Laboratories and Industrial Systems (pages 81-87)

Turn-Key Projects (page 88)

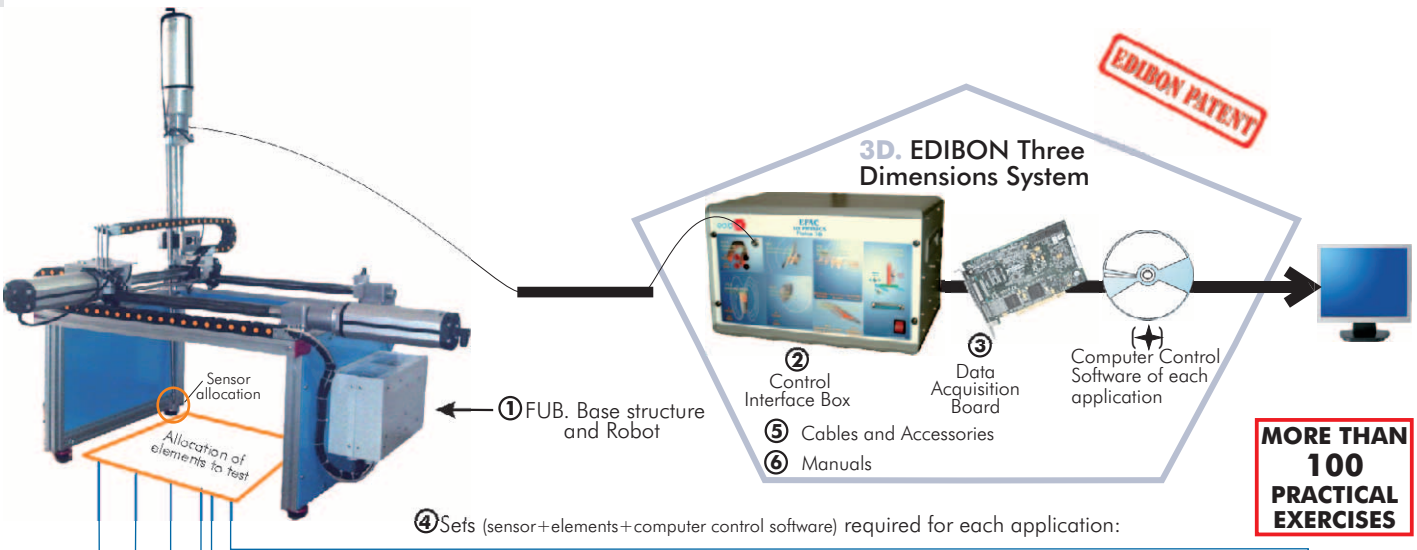
-Technical and Vocational Education. -Higher Technical Education.

Classroom and Laboratory Lay Out (page 89)

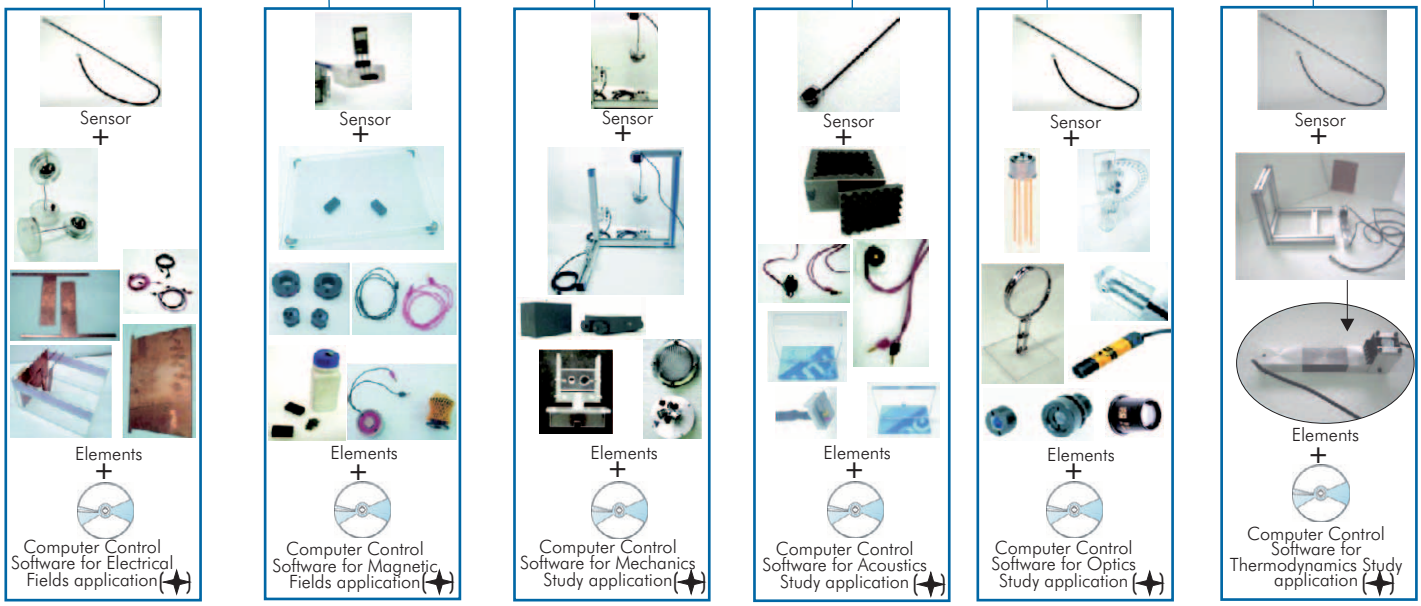
Others facilities that EDIBON offers (page 90)

Where we are? (page 91)

EFAC. Computer Controlled **Three Dimensions (3D) Physics System:**



④ Sets (sensor + elements + computer control software) required for each application:



4.1 FCE. Set for **Electrical Fields** application

4.2 FCM. Set for **Magnetic Fields** application

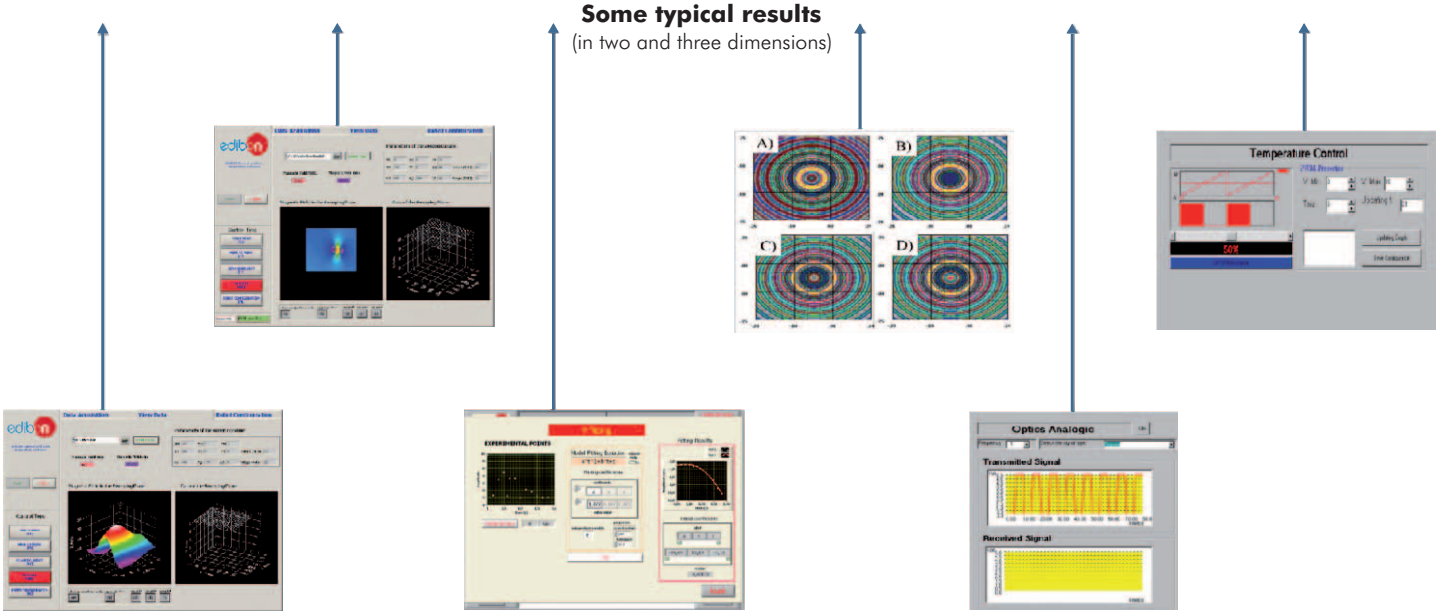
4.3 FM. Set for **Mechanics** Study application

4.4 FAC. Set for **Acoustics** Study application

4.5 FOP. Set for **Optics** Study application

4.6 FTT. Set for **Thermodynamics** Study application

Some typical results
(in two and three dimensions)



2.1- Basic Electronics

www.edibon.com/products/index.php?area=electronics&subarea=basic&lang=en

LIEBA. **Basic Electronics and Electricity Integrated Laboratory:**

Power Supply

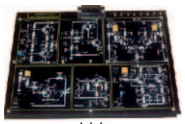
FA-CO. **Power Supply**

EBC-100. **Base Unit,** with built-in power supply

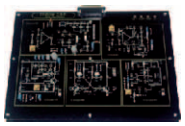
Modules

➤**Basic Electronics concepts**

M3. Semiconductors I

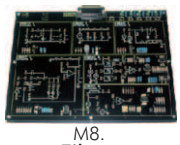


M4. Semiconductors II

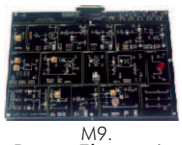


M6. Oscillators

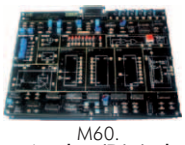
M7. Operational Amplifiers



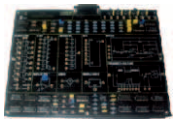
M8. Filters



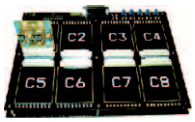
M9. Power Electronics



M60. Analog/Digital Converters

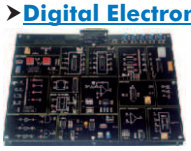


M61. Digital/Analog Converters



M99. Expansion Board (with a wide range of sub-boards available)

➤**Digital Electronics**



M10. Digital Systems & Converters

M11. Digital Electronics Fundamentals

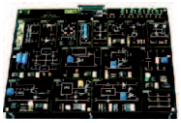
M12. Basic Combinational Circuits

M13. Basic Sequential Circuits

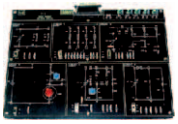
M14. Optoelectronics

M41. Resistance Transducers

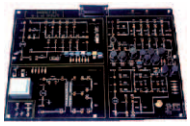
➤**Basic Electricity concepts**



M5. Power Supplies



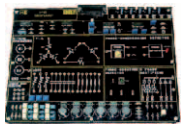
M1. Direct Current (D.C.) Circuits



M2. Alternating Current (A.C.) Circuits

M16. Electric Networks

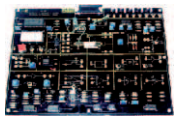
M17. Electromagnetism



M18. Three-phase Circuits

➤**Electronics Applications**

M43. Applications of Temperature



M49. Applications of Temperature and Pressure

M44. Applications of Light

M45. Linear Position and Force

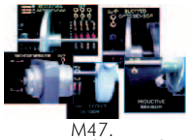
M46. Environmental Measurements

M15. Development Module

M48. Sounds Measurements

➤**Control**

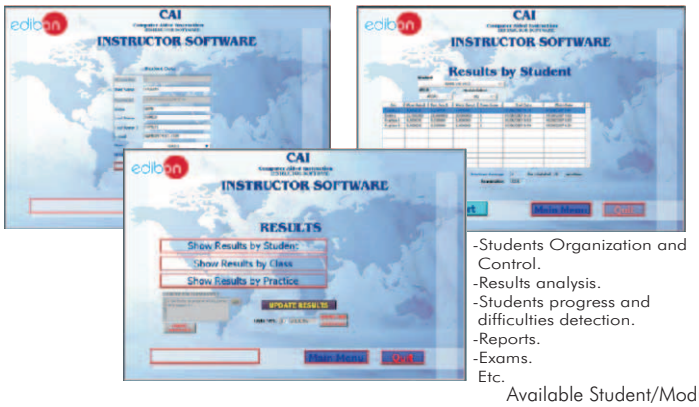
M65. Control and Regulation



M47. Rotational Speed & Position Control

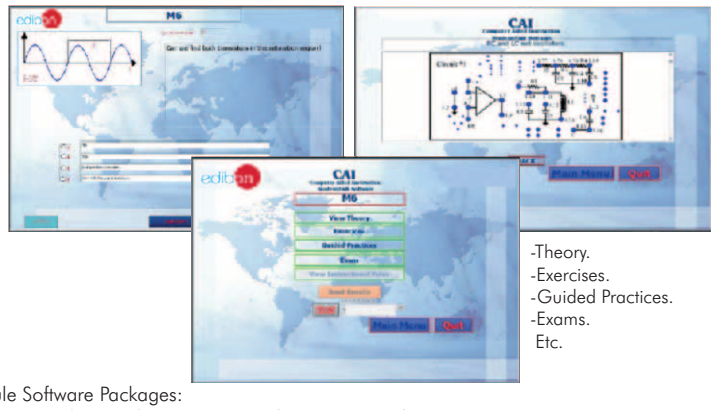
CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Module Software



-Theory.
-Exercises.
-Guided Practices.
-Exams.
Etc.

Available Student/Module Software Packages:

➤Basic Electronics concepts
-M3/SOF. Semiconductors I.
-M4/SOF. Semiconductors II.
-M6/SOF. Oscillators.
-M7/SOF. Operational Amplifiers.
-M8/SOF. Filters.
-M9/SOF. Power Electronics.
-M60/SOF. Analog/Digital Converters.
-M61/SOF. Digital/Analog Converters.
-M99/SOF. Expansion Board.

➤Digital Electronics
-M10/SOF. Digital Systems & Converters.
-M11/SOF. Digital Electronics Fundamentals.
-M12/SOF. Basic Combinational Circuits.
-M13/SOF. Basic Sequential Circuits.
-M14/SOF. Optoelectronics.
-M41/SOF. Resistance Transducers.

➤Basic Electricity concepts
-M5/SOF. Power Supplies.
-M1/SOF. Direct Current (D.C.) Circuits.
-M2/SOF. Alternating Current (A.C.) Circuits.
-M16/SOF. Electric Networks.
-M17/SOF. Electromagnetism.
-M18/SOF. Three-phase Circuits.

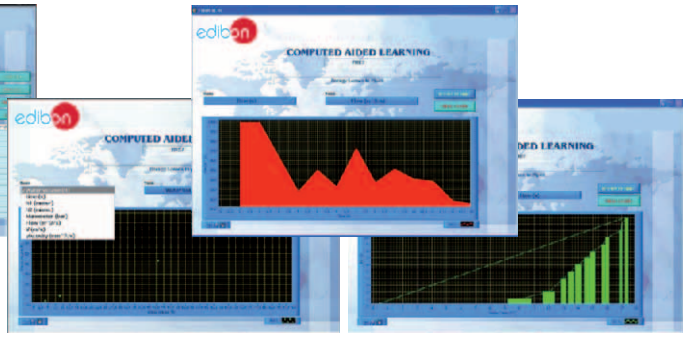
➤Electronics Applications
-M43/SOF. Applications of Temperature.
-M49/SOF. Applications of Temperature and Pressure.
-M44/SOF. Applications of Light.
-M45/SOF. Linear Position and Force.
-M46/SOF. Environmental Measurements.
-M15/SOF. Development Module.
-M48/SOF. Sound Measurements.

➤Control
-M65/SOF. Control and Regulation.
-M47/SOF. Rotational Speed & Position Control.

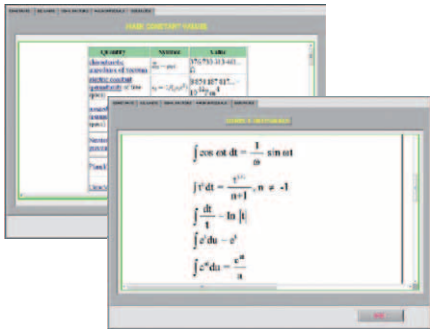
LIEBA. **Basic Electronics and Electricity Integrated Laboratory:**

LIEBA/CAL. Computer Aided Learning Software (Results Calculation and Analysis)

Calculations



Plotting options



Information of constant values, unit conversion factors and integral and derivative tables

Available Software Packages:

➤Basic Electronics concepts
-M3/CAL. Semiconductors I.
-M4/CAL. Semiconductors II.
-M6/CAL. Oscillators.
-M7/CAL. Operational Amplifiers.
-M8/CAL. Filters.
-M9/CAL. Power Electronics.
-M60/CAL. Analog/Digital Converters.
-M61/CAL. Digital/Analog Converters.
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-M13/CAL. Basic Sequential Circuits.
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-M46/CAL. Environmental Measurements.
-M15/CAL. Development Module.
-M48/CAL. Sound Measurements.
➤Control
-M65/CAL. Control and Regulation.
-M47/CAL. Rotational Speed & Position Control.

EDAS/VIS. EDIBON Data Acquisition System + Virtual Instrumentation System

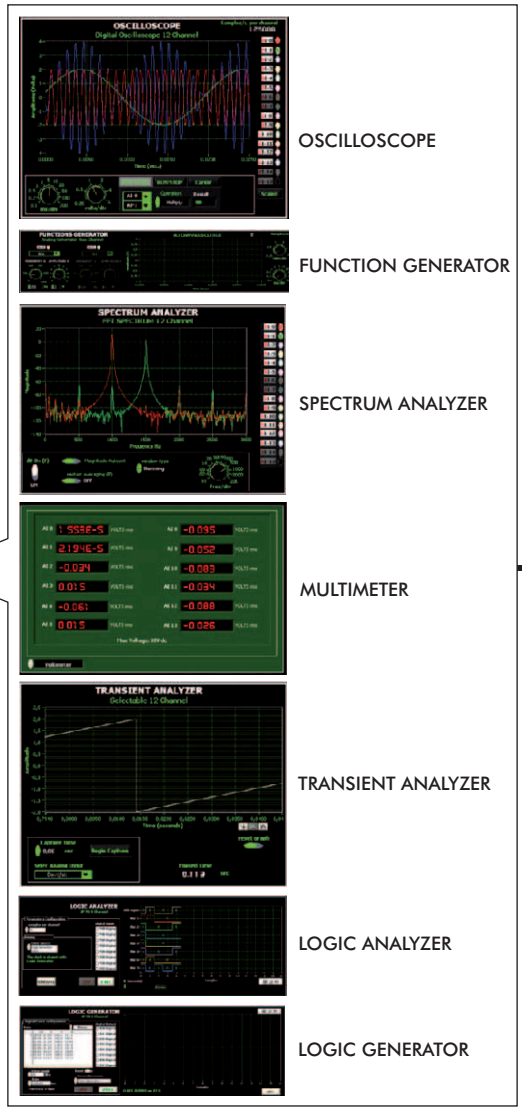
Data Acquisition Interface Box

+

Data Acquisition Board

+

Data Acquisition and Virtual Instrumentation Software



Computer (not included in the supply)

➞ Sampling rate up to: **250,000 S/s (samples per second).**

2.2- Electronics Kits

www.edibon.com/products/index.php?area=electronics&subarea=electronickits&lang=en

M-KITS. **Basic Electronics and Electricity Assembly Kits:**

Required elements by any Kit

FA-CO. Power Supply

M15. Development Module

Assembly Kits

➤**Basic Electronics concepts**

M3-KIT. Semiconductors I

M4-KIT. Semiconductors II

M6-KIT. Oscillators

M7-KIT. Operational Amplifiers

M8-KIT. Filters

M9-KIT. Power Electronics

➤**Digital Electronics**

M10-KIT. Digital Systems & Converters

M11-KIT. Digital Electronics Fundamentals

M12-KIT. Basic Combinational Circuits

M13-KIT. Basic Sequential Circuits

M14-KIT. Optoelectronics

➤**Basic Electricity concepts**

M5-KIT. Power Supplies

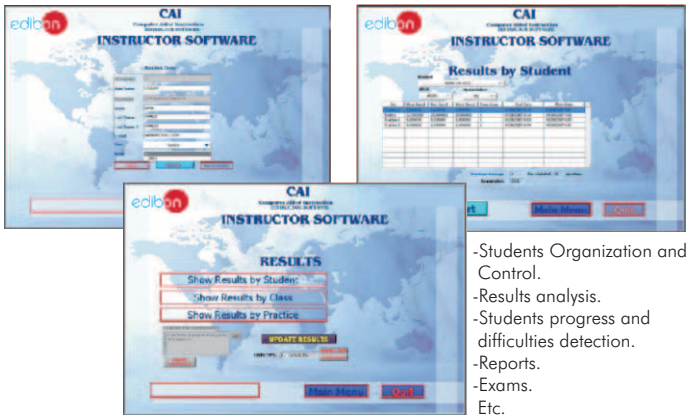
M1-KIT. Direct Current (D.C.) Circuits

M2-KIT. Alternating Current (A.C.) Circuits

M16-KIT. Electric Networks

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
Etc.

Available Student Software Packages:

➤Basic Electronics concepts
-M3/SOF. Semiconductors I.
-M4/SOF. Semiconductors II.
-M6/SOF. Oscillators.
-M7/SOF. Operational Amplifiers.
-M8/SOF. Filters.
-M9/SOF. Power Electronics.

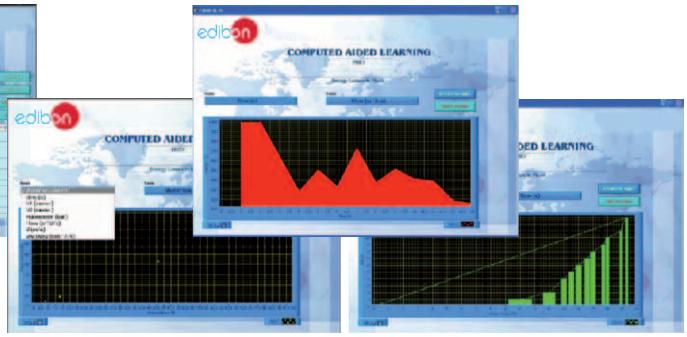
➤Digital Electronics
-M10/SOF. Digital Systems & Converters.
-M11/SOF. Digital Electronics Fundamentals.
-M12/SOF. Basic Combinational Circuits.
-M13/SOF. Basic Sequential Circuits.
-M14/SOF. Optoelectronics.

➤Basic Electricity concepts
-M5/SOF. Power Supplies.
-M1/SOF. Direct Current (D.C.) Circuits.
-M2/SOF. Alternating Current (A.C.) Circuits.
-M16/SOF. Electric Networks.

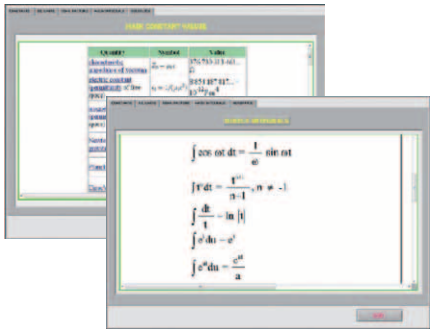
M-KITS. **Basic Electronics and Electricity Assembly Kits:**

CAL. **Computer Aided Learning Software (Results Calculation and Analysis)**

Calculations



Plotting options



Information of constant values, unit conversion factors and integral and derivative tables

Available Software Packages:

➤Basic Electronics concepts
- -M3/CAL. Semiconductors I.
- -M4/CAL. Semiconductors II.
- -M6/CAL. Oscillators.
- -M7/CAL. Operational Amplifiers.
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- -M9/CAL. Power Electronics.

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- -M14/CAL. Optoelectronics.

➤Basic Electricity concepts
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- -M1/CAL. Direct Current (D.C.) Circuits.
- -M2/CAL. Alternating Current (A.C.) Circuits.
- -M16/CAL. Electric Networks.

EDAS/VIS. **EDIBON Data Acquisition System + Virtual Instrumentation System**

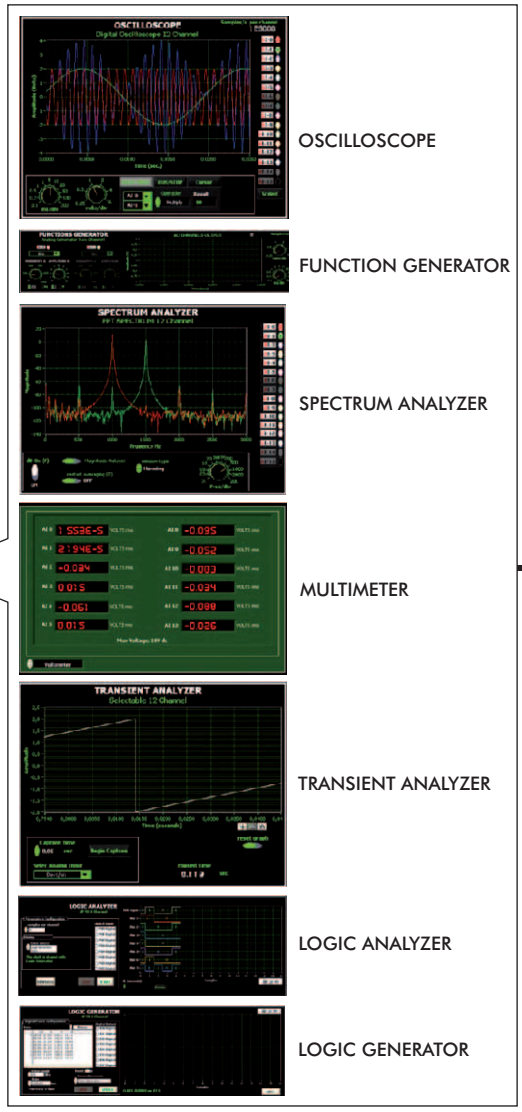
Data Acquisition Interface Box

+

Data Acquisition Board

+

Data Acquisition and Virtual Instrumentation Software



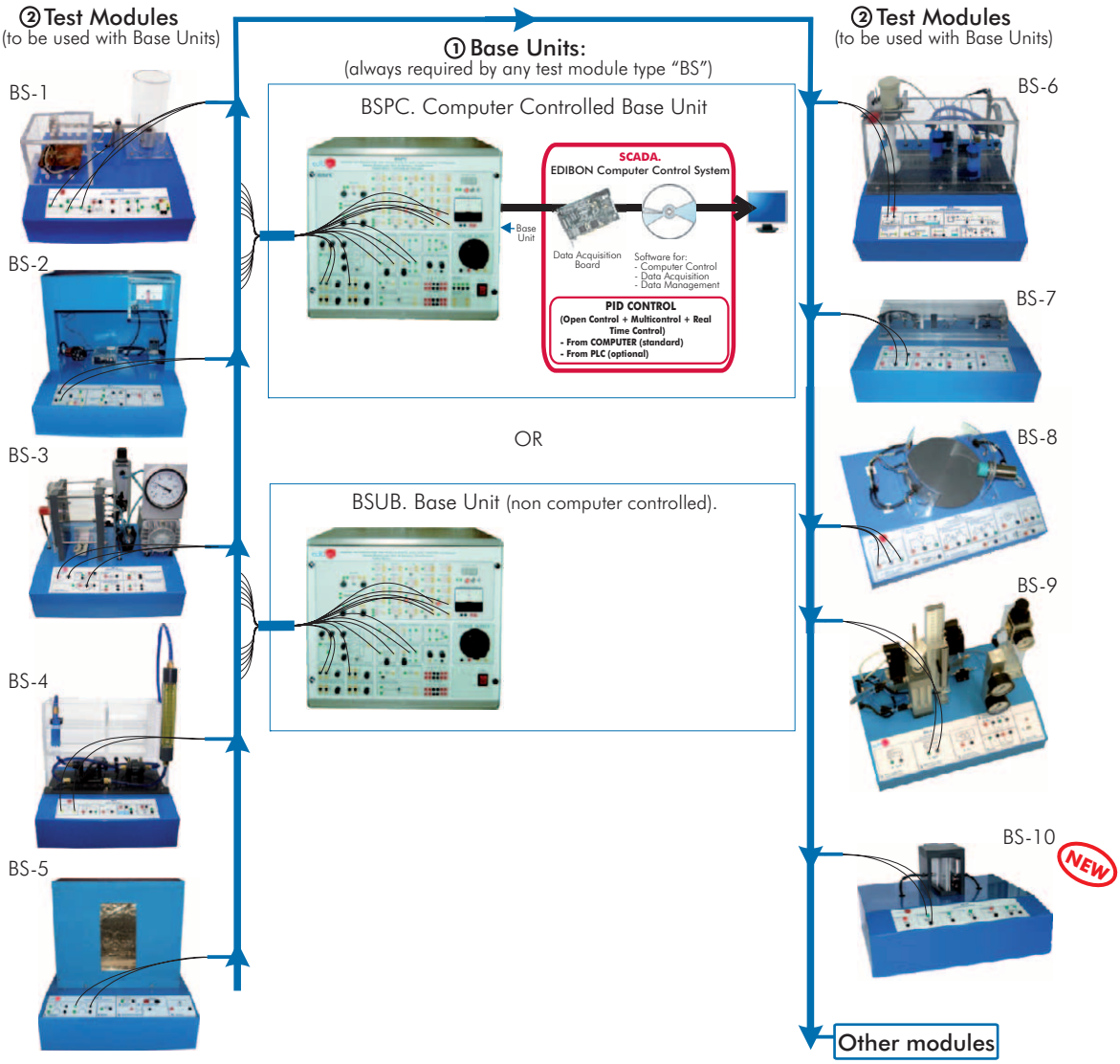
Computer (not included in the supply)

➞ Sampling rate up to: **250,000 S/s (samples per second).**

2.3- Transducers and Sensors

www.edibon.com/products/index.php?area=electronics&subarea=transducerssensors&lang=en

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



This system consists of:

① Base Unit, to control the system:

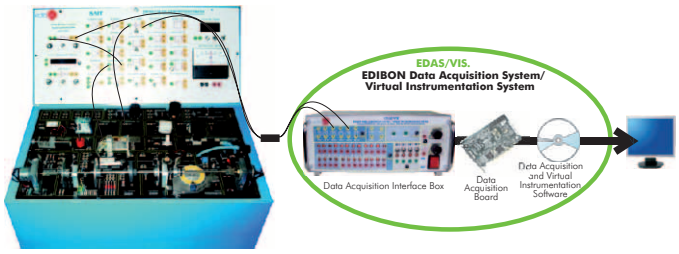
BSPC. Computer Controlled Base Unit, including EDIBON Computer Control System. OR

BSUB. Base Unit (non computer controlled).

② Test Modules:

BS-1. Vibration and/or Deformation Test Module.
BS-2. Temperature Test Module.
BS-3. Pressure Test Module.
BS-4. Flow Test Module.
BS-5. Ovens Test Module.
BS-6. Liquid Level Test Module.
BS-7. Tachometers Test Module.
BS-8. Proximity Test Module.
BS-9. Pneumatic Test Module.
BS-10. Light Test Module.

SAIT. **Transducers and Instrumentation Trainer**



SAIT. Trainer

SCSP. **Pressure Sensors Calibration System**

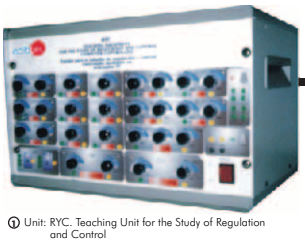
Other available Unit:

- SPC. **Computer Controlled Weighing System**

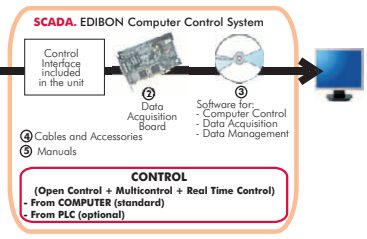
2.4- Control Electronics (Advanced)

www.edibon.com/products/index.php?area=electronics&subarea=control&lang=en

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

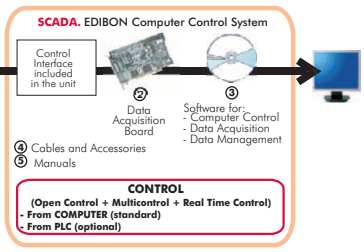


① Unit: RYC. Teaching Unit for the Study of Regulation and Control



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

① Unit: CADDA. Teaching Unit for the Study of Analog/Digital and Digital/Analog Converters

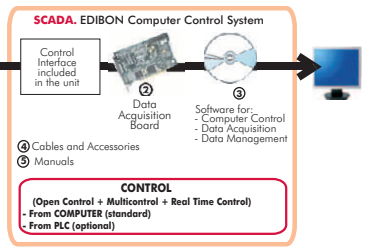


2.5- Digital Electronics (Advanced)

www.edibon.com/products/index.php?area=electronics&subarea=digital&lang=en

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

① Unit: TDS. Teaching Unit for the Study of Digital Signal Processing

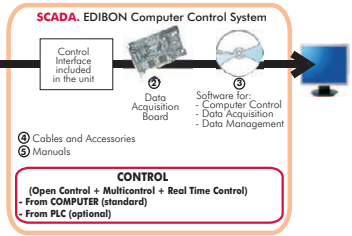


2.6- Industrial Electronics (Advanced)

www.edibon.com/products/index.php?area=electronics&subarea=industrial&lang=en

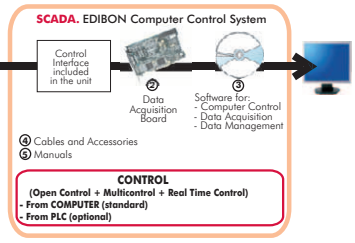
TECNEL. Computer Controlled **Teaching Unit for the Study of Power Electronics** (with IGBTS) (Converters: DC/AC+AC/DC+DC/DC+AC/AC)

① Unit: TECNEL. Teaching Unit for the Study of Power Electronics (Converters: DC/AC+ AC/DC+DC/DC+AC/AC)

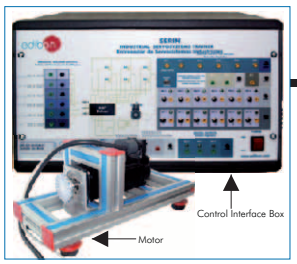


TECNEL/B. Computer Controlled **Basic Teaching Unit for the Study of Power Electronics** (no IGBTS) (Converters: AC/DC+AC/AC)

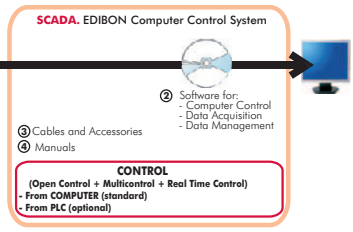
① Unit: TECNEL/B. Basic Teaching Unit for the Study of Power Electronics (Converters: AC/DC+AC/AC)



SERIN/CA. Computer Controlled **Advanced Industrial Servosystems Trainer (AC motors)**

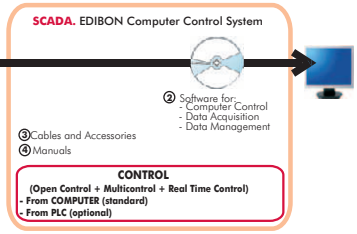


① Unit: SERIN/CA. Advanced Industrial Servosystems Trainer (AC motors)



SERIN/CC. Computer Controlled **Advanced Industrial Servosystems Trainer (DC motors)**

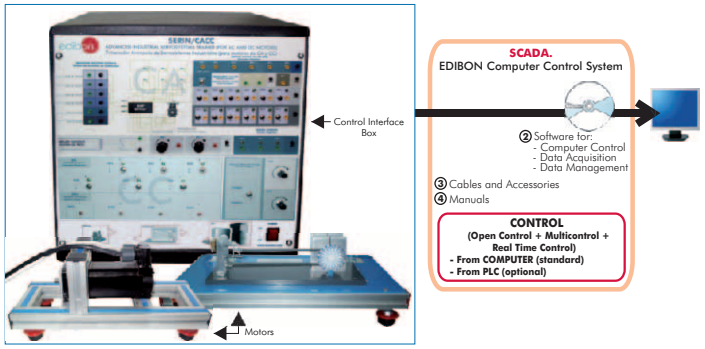
① Unit: SERIN/CC. Advanced Industrial Servosystems Trainer (DC motors)



2.6- Industrial Electronics (Advanced)

www.edibon.com/products/index.php?area=electronics&subarea=industrial&lang=en

SERIN/CACC. **Computer Controlled Advanced Industrial Servosystems Trainer (AC and DC motors)**



① Unit: SERIN/CACC. Advanced Industrial Servosystems Trainer (AC and DC motors)

Industrial Electronics (Basic)

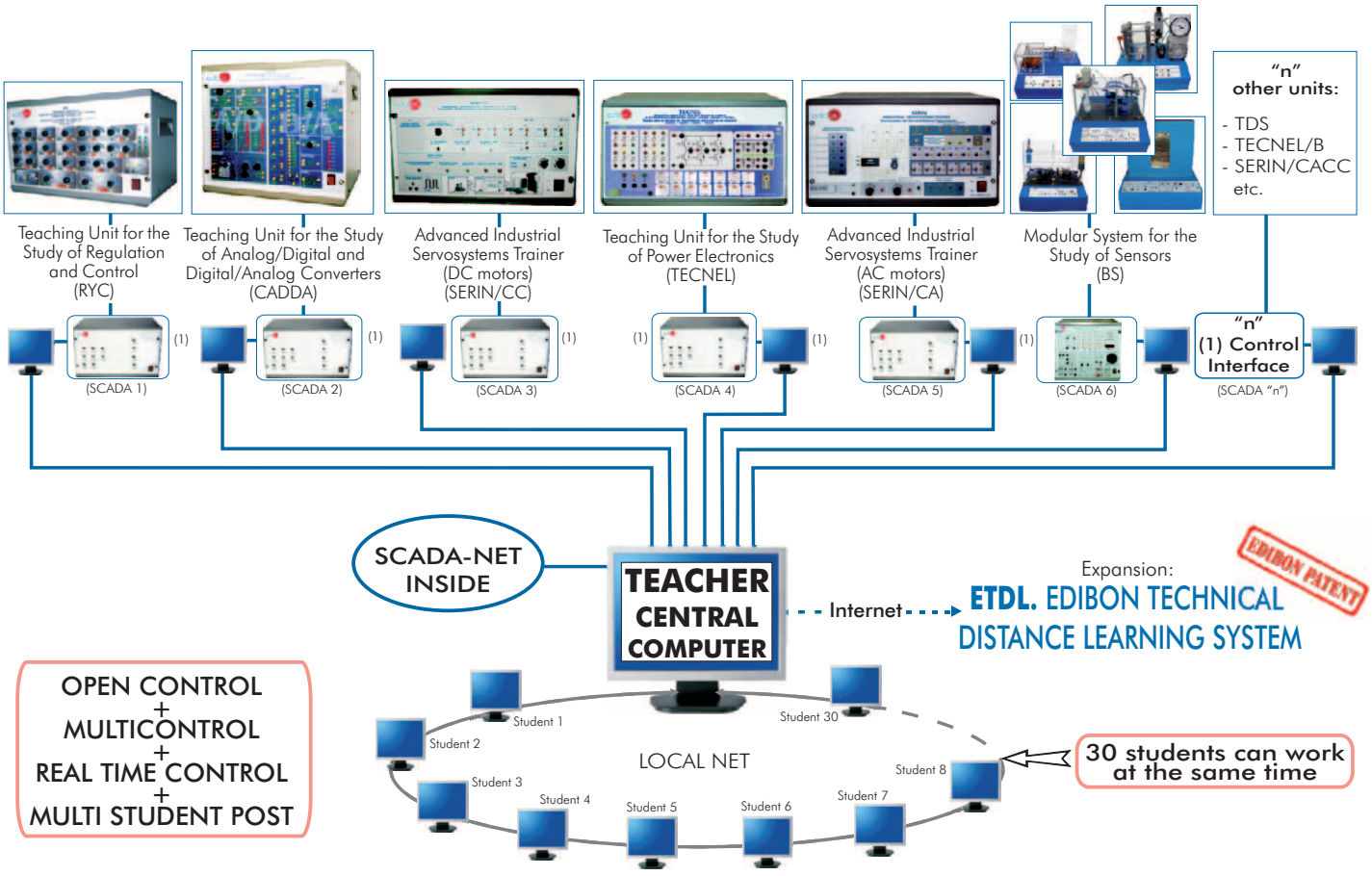
SERIN/CCB. **Basic Servosystems Trainer (DC motors)**

SERIN/CAB. **Basic Servosystems Trainer (AC motors)**

ESN. EDIBON Scada-Net System for Electronics

EDIBON PATENT

www.edibon.com/products/catalogues/en/units/electronics/esn-electronicscommunications/ESN-ELECTRONICS_COMMUNICATIONS_ADVANCED.pdf



Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

LICOMBA. **Communications Integrated Laboratory:**

Power Supply

FA-CO. **Power Supply**

EBC-100. **Base Unit,**
with built-in power supply

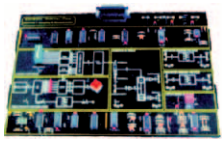
Modules

➤Analog Communications

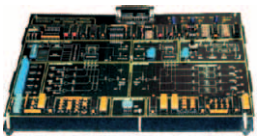
ED-CAM.
AM Communications

ED-CFM.
FM Communications

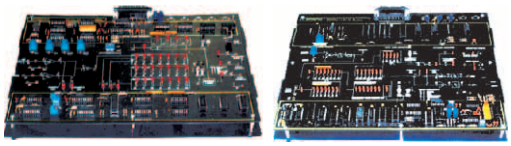
➤Digital Communications



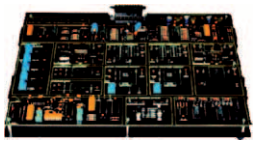
EDICOM 1.
Signals Sampling and Reconstruction



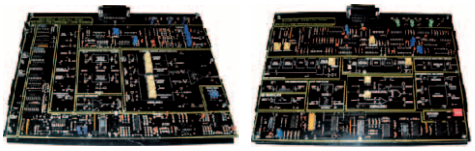
EDICOM 2.
Time Division Multiplex (TDM). PAM Transmitter and Receiver



EDICOM 3.
MIC-TDM Transmission/ Reception



EDICOM 4.
Delta Modulation and Demodulation

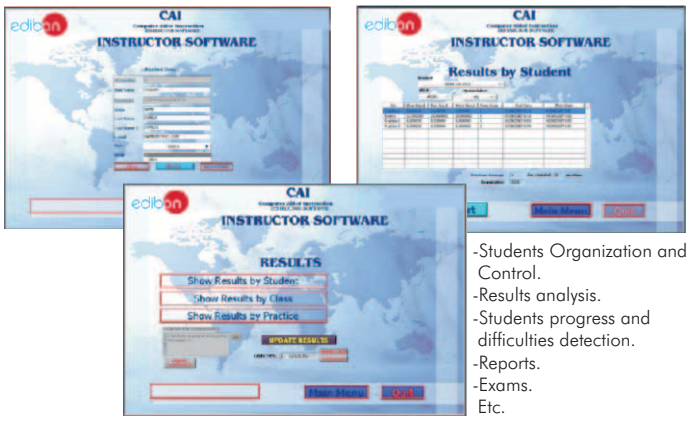


EDICOM 5.
Line codes. Signal Modulation and Demodulation

EDICOM 6.
Optical Fibre Transmission and Reception

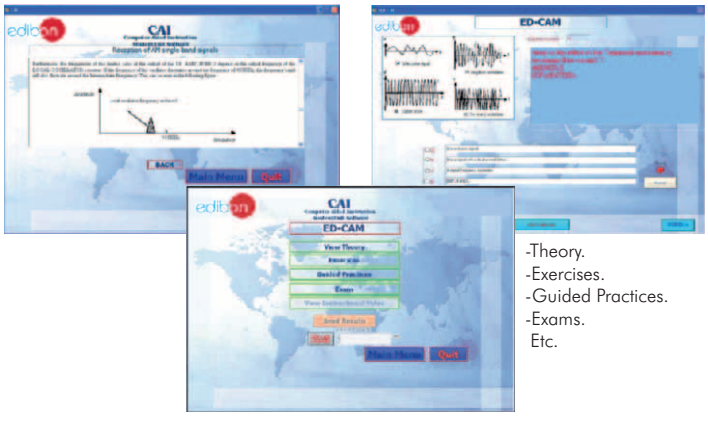
CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Module Software



-Theory.
-Exercises.
-Guided Practices.
-Exams.
Etc.

Available Student/Module Software Packages:

➤Analog Communications

- ED-CAM/SOF. AM Communications.
- ED-CFM/SOF. FM Communications.

➤Digital Communications

- EDICOM 1/SOF. Signals Sampling and Reconstruction.
- EDICOM 2/SOF. Time Division Multiplex (TDM). PAM Transmitter and Receiver.
- EDICOM 3/SOF. MIC-TDM Transmission/Reception.
- EDICOM 4/SOF. Delta Modulation and Demodulation.
- EDICOM 5/SOF. Line codes. Signal Modulation and Demodulation.
- EDICOM 6/SOF. Optical Fibre Transmission and Reception.

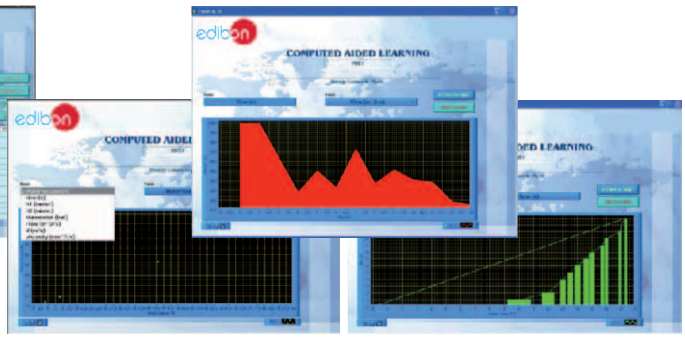
3.1- Analog Communications 3.2- Digital Communications

www.edibon.com/products/index.php?area=communications&subarea=analog&lang=en
www.edibon.com/products/index.php?area=communications&subarea=digital&lang=en

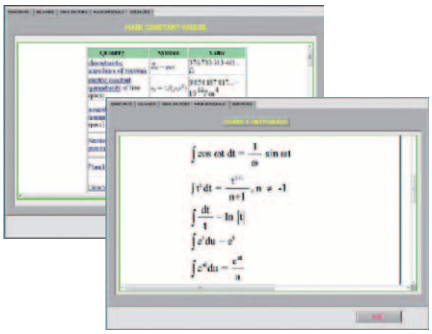
LICOMBA. **Communications Integrated Laboratory:**

LICOMBA/CAL. Computer Aided Learning Software (Results Calculation and Analysis)

Calculations



Plotting options



Information of constant values, unit conversion factors and integral and derivative tables

Available Software Packages:

➤Analog Communications

- ED-CAM/CAL. AM Communications.
- ED-CFM/CAL. FM Communications.

➤Digital Communications

- EDICOM 1/CAL. Signals Sampling and Reconstruction.
- EDICOM 2/CAL. Time Division Multiplex (TDM). PAM Transmitter and Receiver.
- EDICOM 3/CAL. MIC-TDM Transmission/Reception.
- EDICOM 4/CAL. Delta Modulation and Demodulation.
- EDICOM 5/CAL. Line codes. Signal Modulation and Demodulation.
- EDICOM 6/CAL. Optical Fibre Transmission and Reception.

EDAS/VIS. EDIBON Data Acquisition System + Virtual Instrumentation System

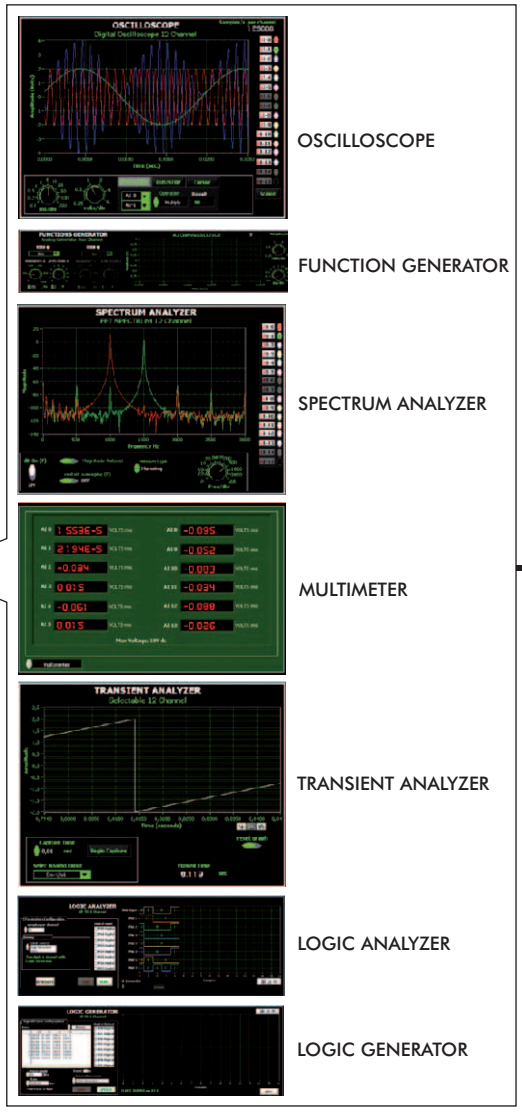
Data Acquisition Interface Box

+

Data Acquisition Board

+

Data Acquisition and Virtual Instrumentation Software



Computer (not included in the supply)

➞Sampling rate up to: **1,250,000 S/s (samples per second).**

3.1- Analog Communications 3.2- Digital Communications

www.edibon.com/products/index.php?area=communications&subarea=analog&lang=en

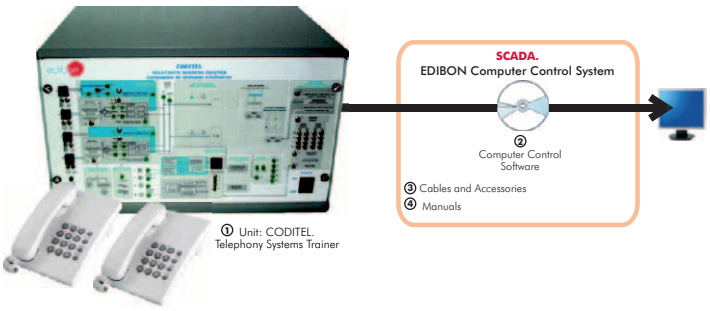
www.edibon.com/products/index.php?area=communications&subarea=digital&lang=en

EMDA. **Analogue and Digital Modulations Trainer** NEW

3.3- Telephony

www.edibon.com/products/index.php?area=communications&subarea=telephony&lang=en

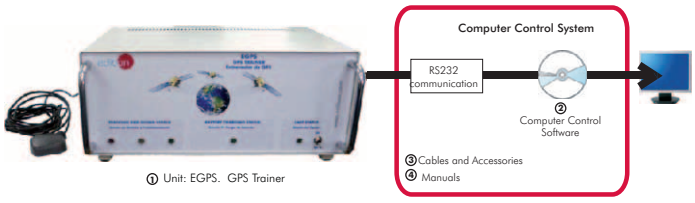
CODITEL. **Telephony Systems Trainer**



3.4- Applied Communications

www.edibon.com/products/index.php?area=communications&subarea=appliedcommunications&lang=en

EGPS. **GPS Trainer** NEW



Other available Units: NEW

- EAN. **Antenna Trainer**
- ESA. **Satellite Trainer**
- EMI. **Microwave Trainer**
- EBL. **Bluetooth Trainer**
- ETM. **Cellular Mobile Trainer**
- ERA. **Radar Trainer**

www.edibon.com/products/index.php?area=electricity&subarea=basic&lang=en

LIELBA. **Electrical Installations Integrated Laboratory:**

Domestic Electrical Installations

➤General

AD1A.
Robbery Alarm Station

AD3A.
Fire Alarm Station

AD5.
Temporization of Stairs

AD13.
Audio Door Entry System

AD14.
Audio and Video Door Entry System

➤Industrial Control

AD6A.
Luminosity Control Station

AD9A.
Heating Control Station

AD15A.
Position Control Station

AD17A.
Photoelectric Control Position Station

AD22.
Flooding Control Station

AD23.
Wireless Basic Control Station (RF)

AD24.
Position Switch

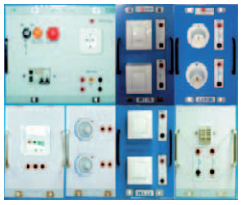
AD25A.
Control Station for Domestic Electric Services through the Telephone

AD28A.
Integral Control Station of Domestic Electric Systems

AD30.
Gas Control Station

➤Sound

AD19A.
Sound Station



AD31.
Movement and Sound Detection and Control

➤Instruments

AD8.
Blinds Activator

AD11A.
Network Analyzer

AD32.
24 Vac/12 Vdc Circuits Analyzer

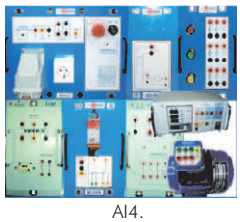
AD33.
Installations Faults Simulator

Industrial Electrical Installations

➤Starters and Motors

AI1.
Star-Delta Starter

AI2.
Starter through Auto-Transformer



AI4.
Starter-Inverter

AI5.
AC Wound Rotor Motor Starter

AI6.
DC Motor Starter

AI12.
Modular Trainer (AC Motors)

LIELBA. **Electrical Installations Integrated Laboratory:**

Industrial Electrical Installations

➤Speed Control

AI3.
Speed Commutator for Dahlander Motor

AI7.
Automatic Change of Speed of a Dahlander Motor with Change of Direction

➤Electrotecnics

AI8.
Reactive Power Compensation (Power Factor Correction)

AI13.
Modular Trainer for Electrotecnics

AI13-A.
Modular Trainer for Electrotecnics (RLC Circuits)

AI13-B.
Modular Trainer for Electrotecnics (Electrostatic Kit)

AI13-C.
Modular Trainer for Electrotecnics (Motors)

AI13-D.
Modular Trainer for Electrotecnics (Transformers)

AI13-E.
Modular Trainer for Electrotecnics (Lighting)

➤Safety

AI9.
People Safety Against Indirect Electrical Contacts in TT Neutral Regimen

AI10.
People Safety Against Indirect Electrical Contacts in TN Neutral Regimen

AI11.
People Safety Against Indirect Electrical Contacts in IT Neutral Regimen

Energy Installations

➤Protection and Relays

AE3.
Test Unit for Magneto-Thermal Automatic Switches

AE4.
Test Unit for Differential Automatic Switches

AE5.
Relay Control Station

AE7.
Multi-Functional Electrical Protection Station

AE9. **Directional Relay:**
Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection

ERP.
Protection Relay Test

➤Measurements and Control

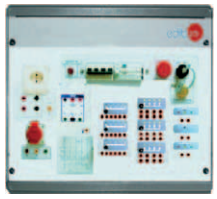
AE2.
Reactive Energy Control and Compensation

AE6.
Energy Counters Control Station

AE8.
Power & Torque Measurements of Electrical Motors

AVR/P.
Automatic Voltage Regulator/P

➤Lines



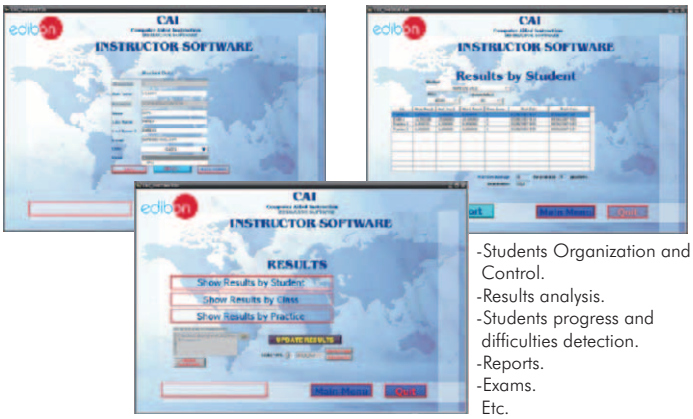
AE1.
Aerial Line Model

www.edibon.com/products/index.php?area=electricity&subarea=basic&lang=en

LIELBA. **Electrical Installations Integrated Laboratory:**

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Application Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
Etc.

Available Student/Application Software Packages:

Domestic Electrical Installations

➤General
AD1A/SOF. Robbery Alarm Station.
AD3A/SOF. Fire Alarm Station.
AD5/SOF. Temporization of Stairs.
AD13/SOF. Audio Door Entry System.
AD14/SOF. Audio and Video Door Entry System.

➤Industrial Control
AD6A/SOF. Luminosity Control Station.
AD9A/SOF. Heating Control Station.
AD15A/SOF. Position Control Station.
AD17A/SOF. Photoelectric Control Position Station.
AD22/SOF. Flooding Control Station.
AD23/SOF. Wireless Basic Control Station (RF).
AD24/SOF. Position Switch.
AD25A/SOF. Control Station for Domestic Electric Services through the Telephone.
AD28A/SOF. Integral Control Station of Domestic Electric Systems.
AD30/SOF. Gas Control Station.

➤Sound
AD19A/SOF. Sound Station.
AD31/SOF. Movement and Sound Detection and Control.

➤Instruments
AD8/SOF. Blinds Activator.
AD11A/SOF. Network Analyzer.
AD32/SOF. 24 Vac/12 Vdc Circuits Analyzer.
AD33/SOF. Installations Faults Simulator.

Industrial Electrical Installations

➤Starters and Motors
AI1/SOF. Star-Delta Starter.
AI2/SOF. Starter through Auto-Transformer.
AI4/SOF. Starter-Inverter.
AI5/SOF. AC Wound Rotor Motor Starter.
AI6/SOF. DC Motor Starter.
AI12/SOF. Modular Trainer (AC Motors).

➤Speed Control
AI3/SOF. Speed Commutator for Dahlander Motor.
AI7/SOF. Automatic Change of Speed of a Dahlander Motor with Change of Direction.

➤Electrotecnics
AI8/SOF. Reactive Power Compensation (Power Factor Correction).
AI13/SOF. Modular Trainer for Electrotecnics.
AI13-A/SOF. Modular Trainer for Electrotecnics (RLC Circuits).
AI13-B/SOF. Modular Trainer for Electrotecnics (Electrostatic Kit).
AI13-C/SOF. Modular Trainer for Electrotecnics (Motors).
AI13-D/SOF. Modular Trainer for Electrotecnics (Transformers).
AI13-E/SOF. Modular Trainer for Electrotecnics (Lighting).

➤Safety
AI9/SOF. People Safety Against Indirect Electrical Contacts in TT Neutral Regimen.
AI10/SOF. People Safety Against Indirect Electrical Contacts in TN Neutral Regimen.
AI11/SOF. People Safety Against Indirect Electrical Contacts in IT Neutral Regimen.

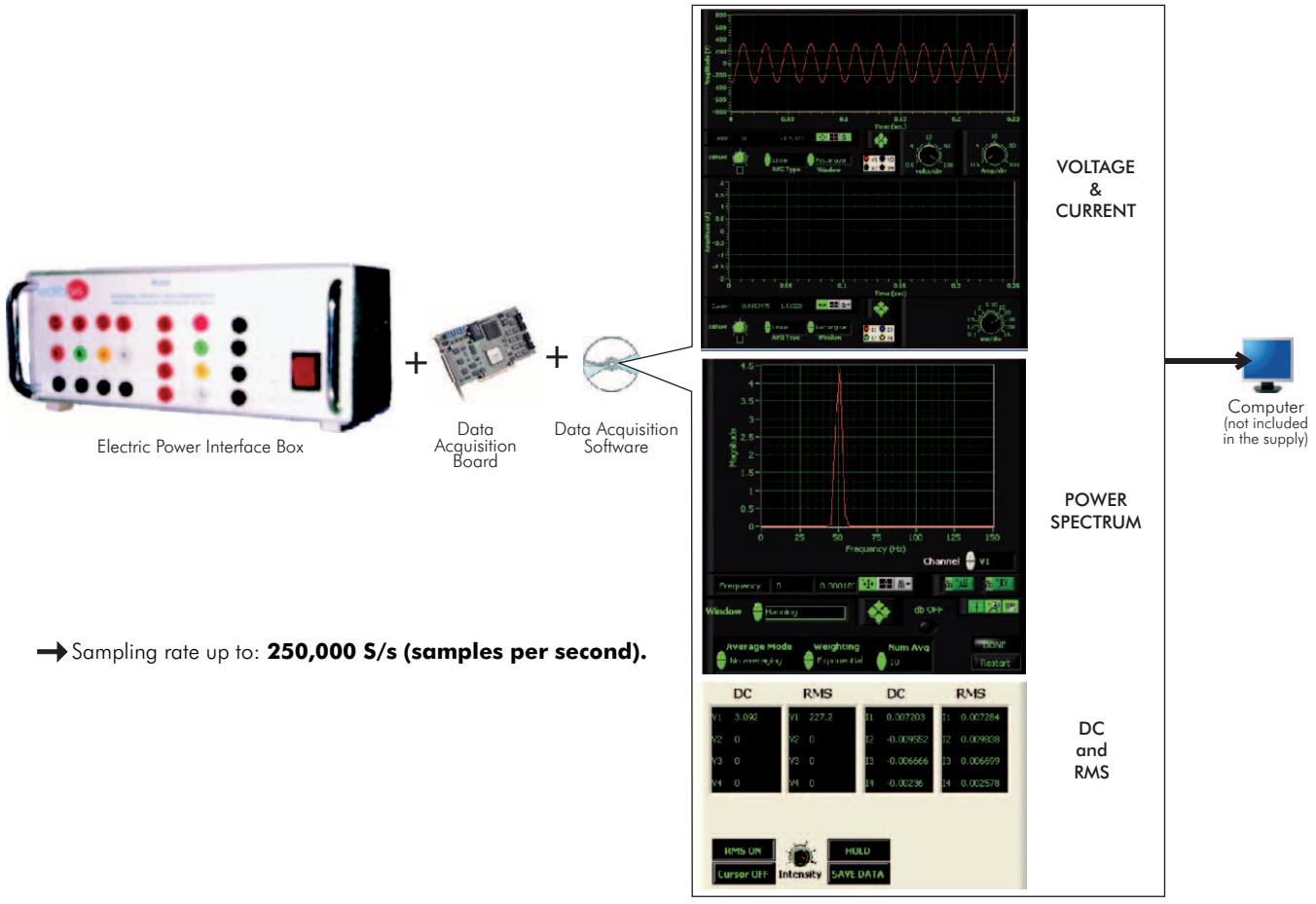
Energy Installations

➤Protection and Relays
AE3/SOF. Test Unit for Magneto-Thermal Automatic Switches.
AE4/SOF. Test Unit for Differential Automatic Switches.
AE5/SOF. Relay Control Station.
AE7/SOF. Multi-Functional Electrical Protection Station.
AE9/SOF. Directional Relay: Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection.

➤Measurements and Control
AE2/SOF. Reactive Energy Control and Compensation.
AE6/SOF. Energy Counters Control Station.
AE8/SOF. Power & Torque Measurements of Electrical Motors.

➤Lines
AE1/SOF. Aerial Line Model.

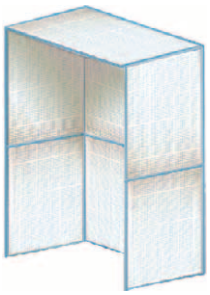
MUAD. Electric Power Data Acquisition System



➞ Sampling rate up to: **250,000 S/s (samples per second).**

ELE-KITS. **Electrical Installations Assembly Kits:**

Installation Cubicle



Domestic Electrical Installations

➤General

KD1A.
Robbery Alarm Station Kit

KD3A.
Fire Alarm Station Kit

KD5.
Temporization of Stairs Kit

KD13.
Audio Door Entry System Kit

KD14.
Audio and Video Door Entry System Kit

➤Industrial Control

KD6A.
Luminosity Control Station Kit

KD9A.
Heating Control Station Kit

KD15A.
Position Control Station Kit

KD17A.
Photoelectric Control Position Station Kit

KD22.
Flooding Control Station Kit

KD23.
Wireless Basic Control Station (RF) Kit

KD24.
Position Switch Kit

KD25A.
Kit of Control Station for Domestic Electric Services through the Telephone

KD28A.
Kit of Integral Control Station of Domestic Electric Systems

KD30.
Gas Control Station Kit

➤Sound

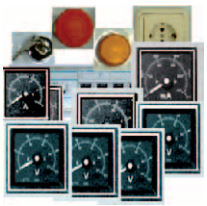
KD19A.
Sound Station Kit

KD31.
Movement and Sound Detection and Control Kit

➤Instruments

KD8.
Blinds Activator Kit

KD11A.
Network Analyzer Kit



KD32.
24 Vac/12 Vdc Circuits Analyzer Kit

KD33.
Installations Faults Simulator Kit

www.edibon.com/products/index.php?area=electricity&subarea=basic&lang=en

ELE-KITS. **Electrical Installations Assembly Kits:**

Industrial Electrical Installations

➤Starters and Motors

KI1.
Star-Delta Starter Kit

KI2.
Starter through Auto-Transformer Kit

KI4.
Starter-Inverter Kit

KI5.
AC Wound Rotor Motor Starter Kit

KI6.
DC Motor Starter Kit

➤Speed Control

KI3.
Speed Commutator for Dahlander Motor Kit

KI7.
Kit of Automatic Change of Speed of a Dahlander Motor with Change of Direction

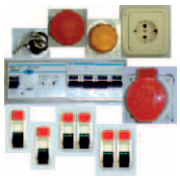
➤Electrotecnics

KI8.
Kit of Reactive Power Compensation (Power Factor Correction)

➤Safety

KI9.
Kit of People Safety Against Indirect Electrical Contacts in TT Neutral Regimen

KI10.
Kit of People Safety Against Indirect Electrical Contacts in TN Neutral Regimen



KI11.
Kit of People Safety Against Indirect Electrical Contacts in IT Neutral Regimen

Energy Installations

➤Protection and Relays

KE3.
Kit of Test Unit for Magneto-Thermal Automatic Switches

KE4.
Kit of Test Unit for Differential Automatic Switches

KE5.
Relay Control Station Kit

KE7.
Multi-Functional Electrical Protection Station Kit

KE9. **Kit of Directional Relay:**
Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection

➤Measurements and Control

KE2.
Kit of Reactive Energy Control and Compensation

KE6.
Energy Counters Control Station Kit

KE8.
Kit of Power & Torque Measurements of Electrical Motors

➤Lines

KE1.
Aerial Line Model Kit

Electricity Demonstration

PDL.
Lamps Demonstration Panel

PDCE-P.
Electric Cables Demonstration Panel (Power)

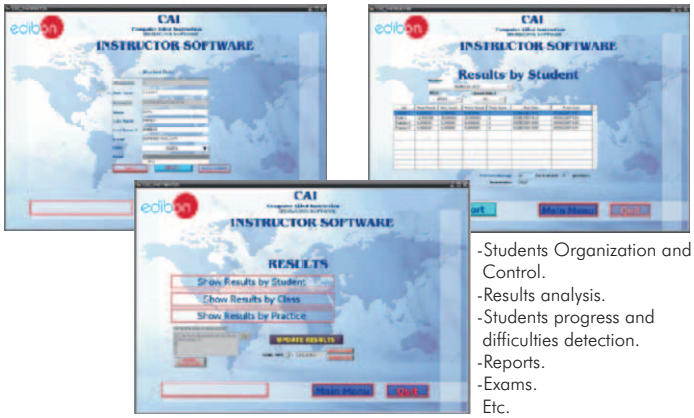
PDCE-S.
Electric Cables Demonstration Panel (Signalling)

PDF.
Fuses Demonstration Panel

ELE-KITS. **Electrical Installations Assembly Kits:**

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Kit Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
-Etc.

Available Student/Kit Software Packages:

Domestic Electrical Installations

➤General
KD1A/SOF. Robbery Alarm Station Kit.
KD3A/SOF. Fire Alarm Station Kit.
KD5/SOF. Temporization of Stairs Kit.
KD13/SOF. Audio Door Entry System Kit.
KD14/SOF. Audio and Video Door Entry System Kit.

➤Industrial Control
KD6A/SOF. Luminosity Control Station Kit.
KD9A/SOF. Heating Control Station Kit.
KD15A/SOF. Position Control Station Kit.
KD17A/SOF. Photoelectric Control Position Station Kit.
KD22/SOF. Flooding Control Station Kit.
KD23/SOF. Wireless Basic Control Station (RF) Kit.
KD24/SOF. Position Switch Kit.
KD25A/SOF. Kit of Control Station for Domestic Electric Services through the Telephone.
KD28A/SOF. Kit of Integral Control Station of Domestic Electric Systems.
KD30/SOF. Gas Control Station Kit.

➤Sound
KD19A/SOF. Sound Station Kit.
KD31/SOF. Movement and Sound Detection and Control Kit.

➤Instruments
KD8/SOF. Blinds Activator Kit.
KD11A/SOF. Network Analyzer Kit.
KD32/SOF. 24 Vac/12 Vdc Circuits Analyzer Kit.
KD33/SOF. Installations Faults Simulator Kit.

Industrial Electrical Installations

➤Starters and Motors
KI1/SOF. Star-Delta Starter Kit.
KI2/SOF. Starter through Auto-Transformer Kit.
KI4/SOF. Starter-Inverter Kit.
KI5/SOF. AC Wound Rotor Motor Starter Kit.
KI6/SOF. DC Motor Starter Kit.

➤Speed Control
KI3/SOF. Speed Commutator for Dahlander Motor Kit.
KI7/SOF. Kit of Automatic Change of Speed of a Dahlander Motor with Change of Direction.

➤Electrotecnics
KI8/SOF. Kit of Reactive Power Compensation (Power Factor Correction).

➤Safety
KI9/SOF. Kit of People Safety Against Indirect Electrical Contacts in TT Neutral Regimen.
KI10/SOF. Kit of People Safety Against Indirect Electrical Contacts in TN Neutral Regimen.
KI11/SOF. Kit of People Safety Against Indirect Electrical Contacts in IT Neutral Regimen.

Energy Installations

➤Protection and Relays
KE3/SOF. Kit of Test Unit for Magneto-Thermal Automatic Switches.
KE4/SOF. Kit of Test Unit for Differential Automatic Switches.
KE5/SOF. Relay Control Station Kit.
KE7/SOF. Multi-Functional Electrical Protection Station Kit.
KE9/SOF. Kit of Directional Relay: Earth Fault Detection. Directional Power Flow Detection. Reactive Power Flow Detection.

➤Measurements and Control
KE2/SOF. Kit of Reactive Energy Control and Compensation.
KE6/SOF. Energy Counters Control Station Kit.
KE8/SOF. Kit of Power & Torque Measurements of Electrical Motors.

➤Lines
KE1/SOF. Aerial Line Model Kit.

MUAD. Electric Power Data Acquisition System

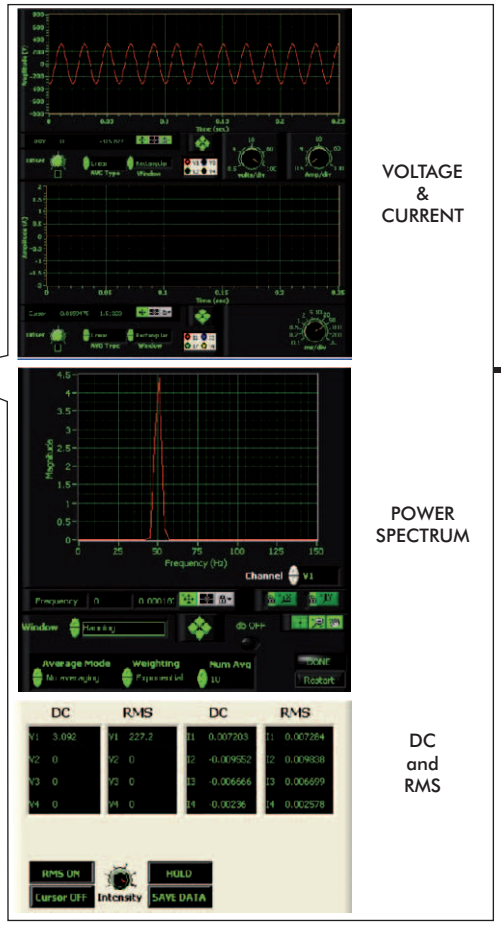
Electric Power Interface Box

+

Data Acquisition Board

+

Data Acquisition Software



Computer (not included in the supply)

➞ Sampling rate up to: **250,000 S/s (samples per second).**

www.edibon.com/products/index.php?area=electricity&subarea=machines&lang=en

LIMEL. **Integrated Laboratory for Electrical Machines:**

Electrical Machines Units

EME. **Electrical Machines Unit**
(Advanced option)

EME/M. **Electrical Machines Unit**
(Intermediate option)

EME/B. **Electrical Machines Unit**
(Basic option)

Measurement Units

EAL.
Network Analyzer Unit

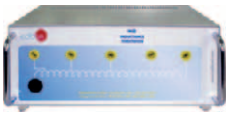
EALD.
Network Analyzer Unit, with Computer Data Acquisition + Oscilloscope (PC)

EALDG.
Network Analyzer Unit, with Computer Data Acquisition + Oscilloscope (PC) + Oscilloscope Display

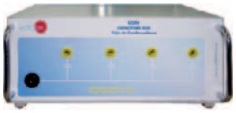
EAM-VA.
Analog Measurement Unit

Loads

RCL3R.
Resistive, Inductive and Capacitive Loads Module



IND.
Inductance



CON.
Box of Condensers

REV.
Variable Resistance

Others:
REV/T. Three-phase Variable Resistance
REF. Fixed Resistance

Motors

➤Motors (DC)

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

WPP/B.
Velocity Control for stepper motor

➤Motors (AC)

EMT6.
A.C. Synchronous Three-phase motor alternator

EMT7.
Asynchronous Three-phase motor of squirrel cage

EMT7-B.
Asynchronous Three-phase motor of squirrel cage (4 poles)

EMT8.
Asynchronous Three-phase motor with wound rotor

EMT9.
Dahlander Three-phase (two-speeds)

EMT10.
Asynchronous Three-phase motor of two independent speeds

EMT11.
Asynchronous Single-phase motor with starting capacitor

EMT12.
Universal motor (single-phase)

EMT14.
Repulsion motor, single-phase with short-circuited brushes

EMT16.
Asynchronous Single-phase motor with starting and running capacitor

EMT17.
Three-phase motor of squirrel cage with "Y" connection

EMT20.
Asynchronous Single-phase motor with split phase

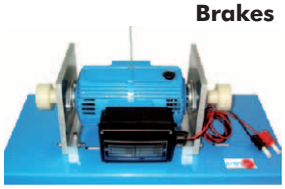
EMT21.
Three-phase Reluctance motor

Other available Motor:
- EMT22. **Single-phase Shaded Pole motor**

LIMEL. **Integrated Laboratory for Electrical Machines:**

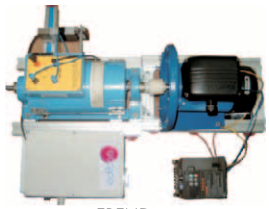
Brakes

FRE-FE.
Electronic Brake

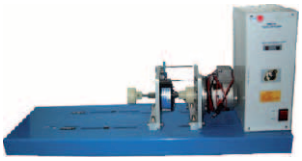


DI-FRE.
Pendular Dynamo Brake

EMCC.
Load Cell Module



FREND.
Dynamo Brake



FRENP.
Magnetic Powder Brake

FREPR.
Prony Brake

FRECP.
Eddy Current Brake

Transformers

ETT.
Three-phase and Single-phase Transformers Unit

TPPT.
Three-phase Power Transformer Unit

EMPTA.
Auxiliary Transformer and Protection Module

AUTR.
Variable Auto-Transformer

TRANS.
Single-phase Transformer

TRANS/3.
Three-phase Transformer

DC Motor Speed Control

VVCC.
DC Motor Speed Controller

VVCC/M.
DC Motor Speed Controller
(Intermediate option)

VVCC/B.
DC Motor Speed Controller,
with no other elements

AC Motor Speed Control

VVCA.
AC Motor Speed Controller

VVCA/M.
AC Motor Speed Controller
(Intermediate option)

VVCA/B.
AC Motor Speed Controller,
with no other elements

PLC

PLC-PI.
PLC Module for Unit Operations Control

EDIBON FP-X-CPU.
PLC,
with no other elements

Tachogenerator

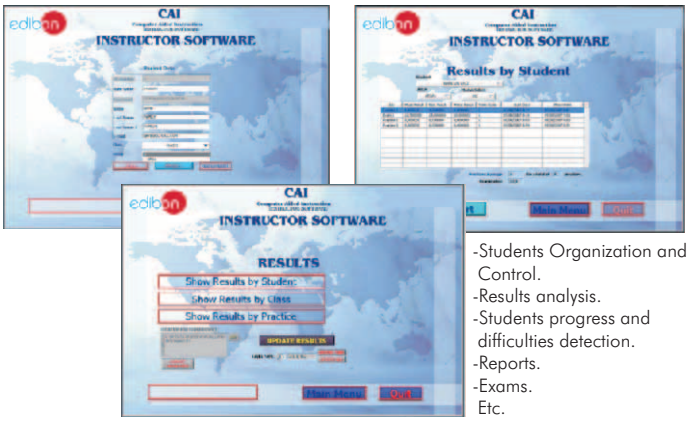
TECNEL/T.
Tachogenerator

www.edibon.com/products/index.php?area=electricity&subarea=machines&lang=en

LIMEL. **Integrated Laboratory for Electrical Machines:**

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Motor Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
Etc.

Available Student/Motor Software Packages:

➤Motors (DC)

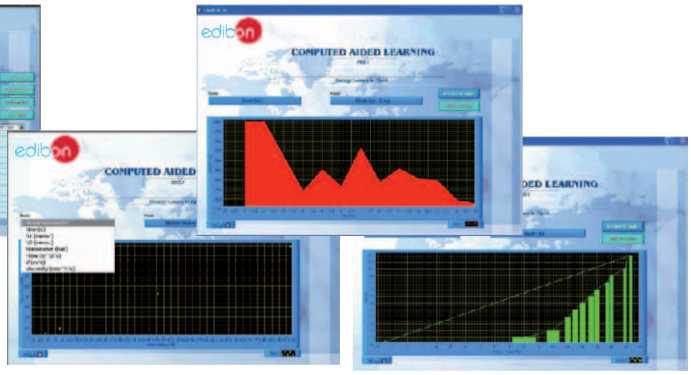
-EMT1/SOF. D.C. Independent excitation motor-generator.
-EMT2/SOF. D.C. Series excitation motor-generator.
-EMT3/SOF. D.C. Shunt excitation motor-generator.
-EMT4/SOF. D.C. Compound excitation motor-generator.
-EMT5/SOF. D.C. Shunt-series compound excitation motor.
-EMT12/SOF. Universal motor (single-phase).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

➤Motors (AC)

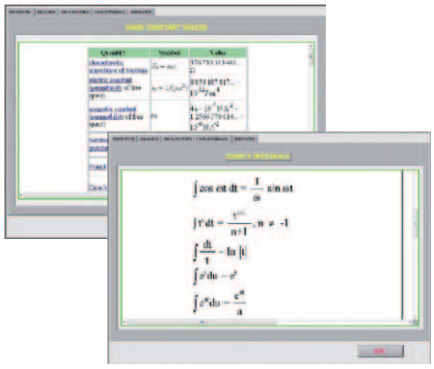
-EMT6/SOF. A.C. Synchronous Three-phase motor alternator
-EMT7/SOF. Asynchronous Three-phase motor of squirrel cage.
-EMT7-B/SOF. Asynchronous Three-phase motor of squirrel cage (4 poles).
-EMT8/SOF. Asynchronous Three-phase motor with wound rotor.
-EMT9/SOF. Dahlander Three-phase (two-speeds).
-EMT10/SOF. Asynchronous Three-phase motor of two independent speeds.
-EMT11/SOF. Asynchronous Single-phase motor with starting capacitor.
-EMT12/SOF. Universal motor (single-phase).
-EMT14/SOF. Repulsion motor, single-phase with short-circuited brushes.
-EMT16/SOF. Asynchronous Single-phase motor with starting and running capacitor.
-EMT17/SOF. Three-phase motor of squirrel cage with "Y" connection.
-EMT20/SOF. Asynchronous Single-phase motor with split phase.
-EMT21/SOF. Three-phase Reluctance motor.
-EMT22/SOF. Single-phase Shaded Pole motor.

CAL. Computer Aided Learning Software (Results Calculation and Analysis)

Calculations



Plotting options



Information of constant values, unit conversion factors and integral and derivative tables

Available Student/Motor Software Packages:

➤Motors (DC)

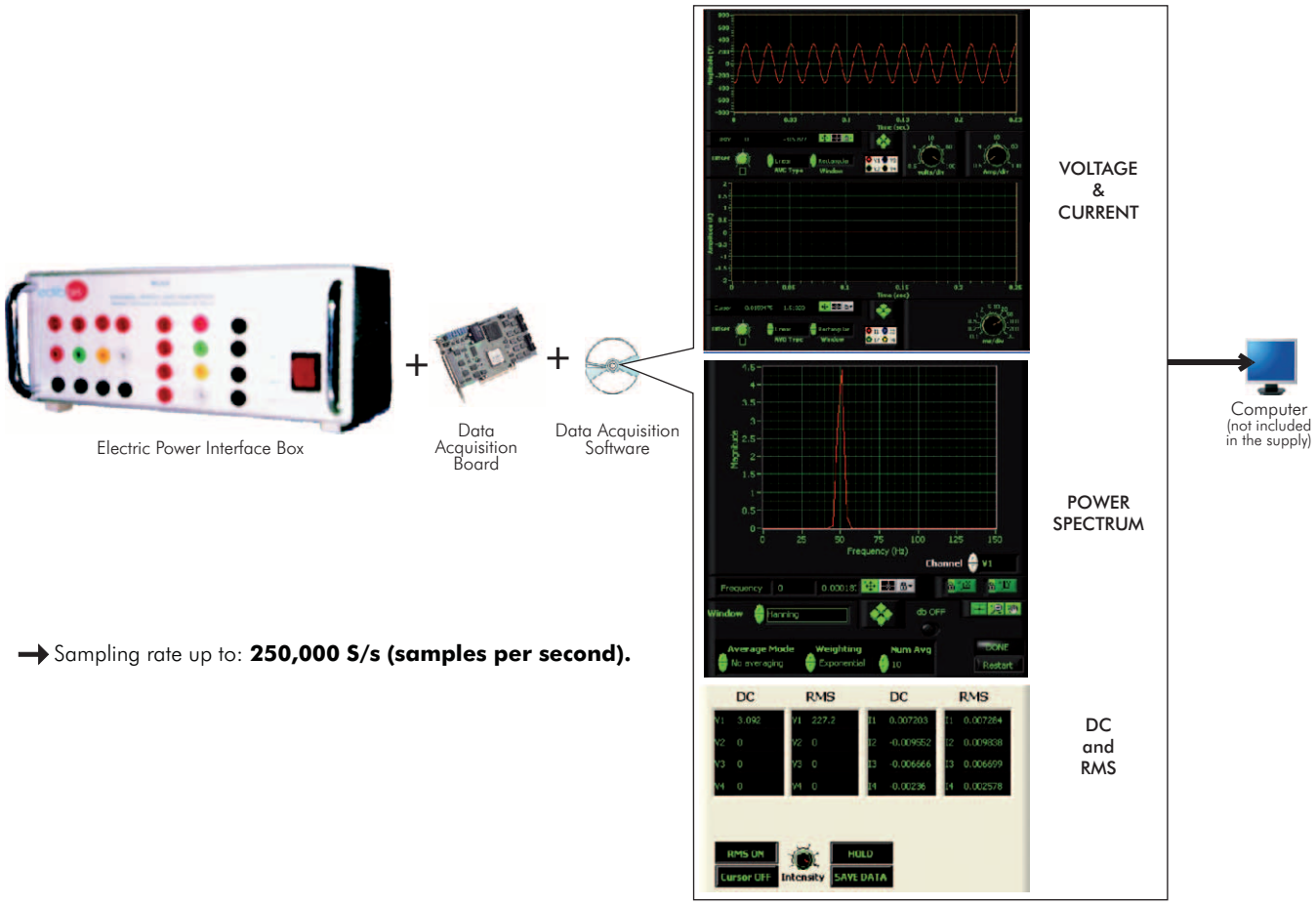
-EMT1/CAL. D.C. Independent excitation motor-generator.
-EMT2/CAL. D.C. Series excitation motor-generator.
-EMT3/CAL. D.C. Shunt excitation motor-generator.
-EMT4/CAL. D.C. Compound excitation motor-generator.
-EMT5/CAL. D.C. Shunt-series compound excitation motor.
-EMT12/CAL. Universal motor (single-phase).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

➤Motors (AC)

-EMT6/CAL. A.C. Synchronous Three-phase motor alternator
-EMT7/CAL. Asynchronous Three-phase motor of squirrel cage.
-EMT7-B/CAL. Asynchronous Three-phase motor of squirrel cage (4 poles).
-EMT8/CAL. Asynchronous Three-phase motor with wound rotor.
-EMT9/CAL. Dahlander Three-phase (two-speeds).
-EMT10/CAL. Asynchronous Three-phase motor of two independent speeds.
-EMT11/CAL. Asynchronous Single-phase motor with starting capacitor.
-EMT12/CAL. Universal motor (single-phase).
-EMT14/CAL. Repulsion motor, single-phase with short-circuited brushes.
-EMT16/CAL. Asynchronous Single-phase motor with starting and running capacitor.
-EMT17/CAL. Three-phase motor of squirrel cage with "Y" connection.
-EMT20/CAL. Asynchronous Single-phase motor with split phase.
-EMT21/CAL. Three-phase Reluctance motor.
-EMT22/CAL. Single-phase Shaded Pole motor.

LIMEL. **Integrated Laboratory for Electrical Machines:**

MUAD. Electric Power Data Acquisition System



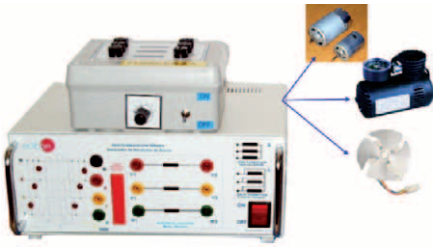
→ Sampling rate up to: **250,000 S/s (samples per second).**

4.4- Electrical Machines

www.edibon.com/products/index.php?area=electricity&subarea=machines&lang=en

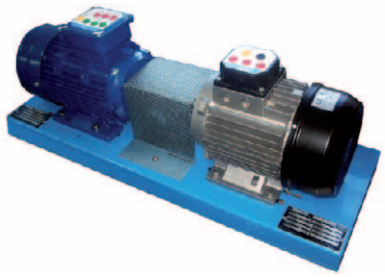
ESAM. **Faults Simulation Trainer in Electrical Motors**

ESAE. **Electrical Faults Simulation Trainer**



EEA. **Alternators Study Unit**

EGMG24. **Motor-Generator Group, three-phase 24 Vac, no excitation required (permanent magnets)**



ERP. **Protection Relay Test:**

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

Available Relays Modules
(for use with the Protection Relays Test Unit (ERP-UB))

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. **Feeders Management Relay Module**

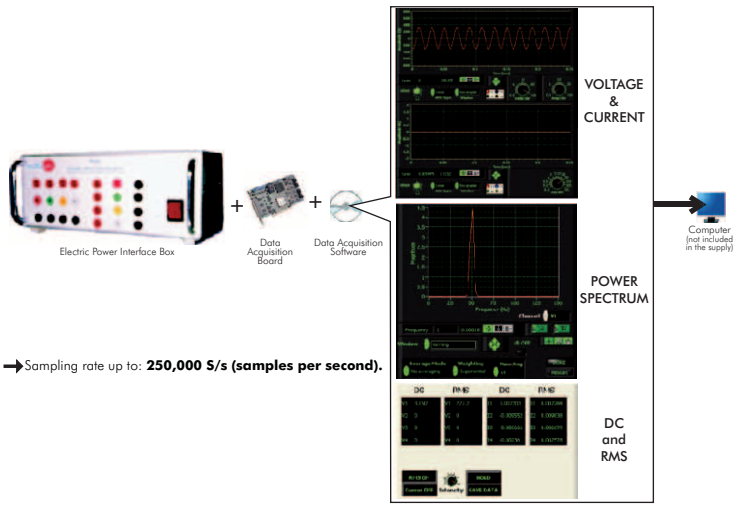
ERP-PD. **Distance Protection Relay Module**

4.5- Electrical Machines Kits

www.edibon.com/products/index.php?area=electricity&subarea=machineskits&lang=en

EMT-KIT. **Disassembly Machines Kit**

MUAD. Electric Power Data Acquisition System (for EMT-KIT)



→Sampling rate up to: **250,000 S/s (samples per second).**

www.edibon.com/products/index.php?area=energy&subarea=energypowerplants&lang=en

APS12. **Advanced Electrical Power System and Mechanical Power Plants Simulator** (Generation, Transformation, Transport, Distribution and Consumption)

EDIBON PATENT

APSS
Advanced Electrical Power System Simulator
(Electrical Energy)

HUB I. Electrical Power System with SCADA I

SCADA I

ESN
EDIBON SCADA-NET Teaching System

"SCADA-NET"

Teacher computer

local net for 30 students

SCADA-NET System (ESN) for 30 students working simultaneously with any APS12 option available

APPS
Advanced Mechanical Power Plants and Energy Simulator
(Mechanical Energy)

HUB II. Mechanical Power Plants and Energy System with SCADA II

SCADA II

APSS/S
Second Advanced Electrical Power System Simulator for Synchronizing

AVR

Differential Relay
Overcurrent Relay
Overvoltage Relay
Undervoltage Relay
Directional Relay

G1. Generator I with Complete Cabinet

T-G1. Generator Group Transformer I

T-G2. Generator Group Transformer II

G2. Generator II with Complete Cabinet

Distance Relay
Overcurrent Relay
Directional Relay

LTS1. Line I and II Cabinet with Transmission Substation

T-GR1. Grid Transformer I

T-GR2. Grid Transformer II

LTS2. Line III, IV and V Cabinet with Transmission Substation

Directional Relay
Differential Relay
Overcurrent Relay

DSL1. Distribution Substation I, Loads and Network Equivalents I

T-D1. Distribution Transformer I

T-D2. Distribution Transformer II

DSL2. Distribution Substation II, Loads and Network Equivalents II

G1 G2 Gn

T1 T2 Tn

GRID

Lines

I II n

Network I. Network II.

Load Load n

C-DL. Dynamic Loads

C-A. Alarms

C-P. Student Protections

C-F. Films

Available Power Plants and Energy Systems Simulation Softwares:

Conventionals

- PPE/CC. **Combined Cycle Power Plant.**
- PPE/NU. **Nuclear Power Plant.**
- PPE/FD. **Diesel Fuel Power Plant.**
- PPE/FF. **Fossil Fuel (coals) Power Plant.**
- PPE/GA. **Gas Power Plant.**

Renewables

- PPE/HY. **Hydroelectric Power Plant.**
- PPE/WP. **Wind Powered Power Plant.**
- PPE/FV. **Photovoltaic Power Plant.**
- PPE/HE. **Heliothermic Power Plant.**
- PPE/BM. **Biomass Power Plant.**
- PPE/FC. **Fuel Cells Power Plant.**
- PPE/GT. **Geothermal Power Plant.**

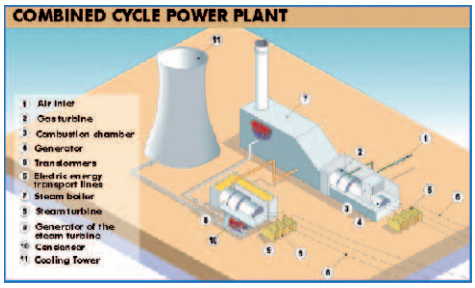
UPDATED

UNIQUE!
ELECTRICAL AND MECHANICAL POWER PLANTS
30 STUDENTS WORKING SIMULTANEOUSLY

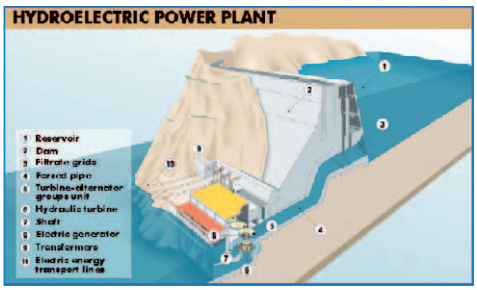
www.edibon.com/products/index.php?area=energy&subarea=energypowerplants&lang=en

APS12. **Advanced Electrical Power System and Mechanical Power Plants Simulator** (Generation, Transformation, Transport, Distribution and Consumption)

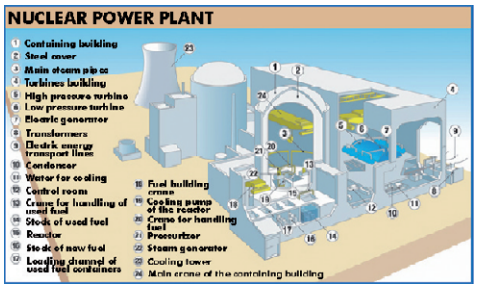
Available Power Plants and Energy Systems Simulation:



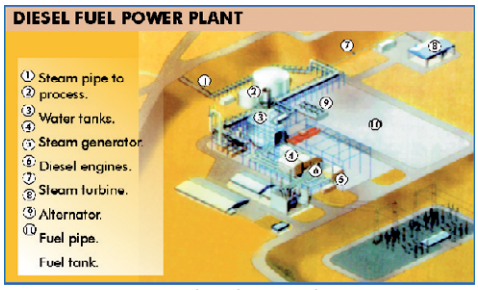
Combined Cycle Power Plant



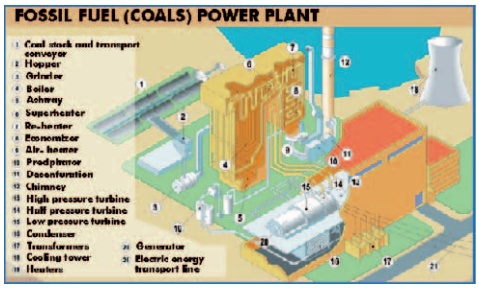
Hydroelectric Power Plant



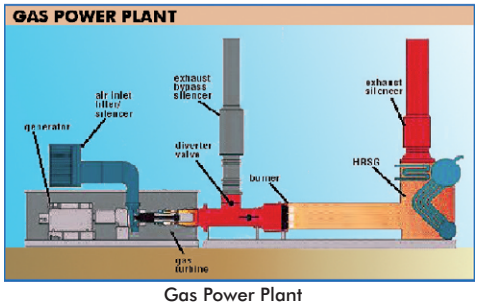
Nuclear Power Plant



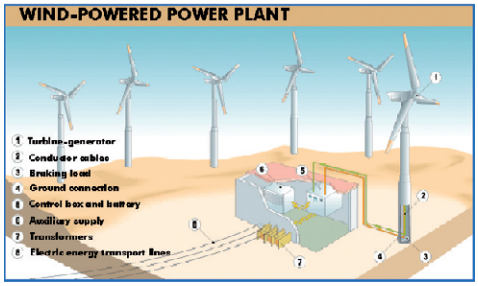
Diesel Fuel Power Plant



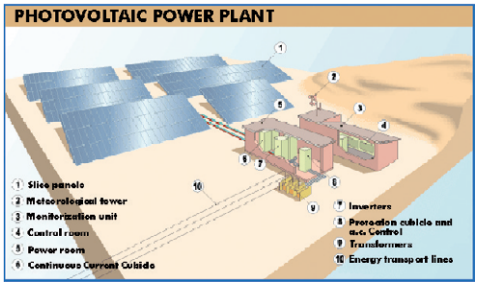
Fossil Fuel (coals) Power Plant



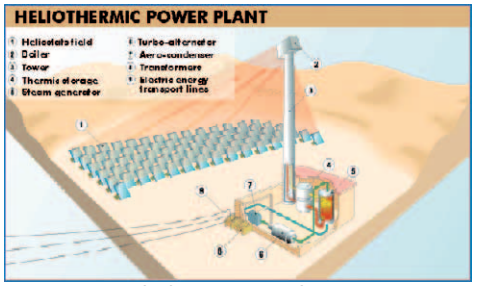
Gas Power Plant



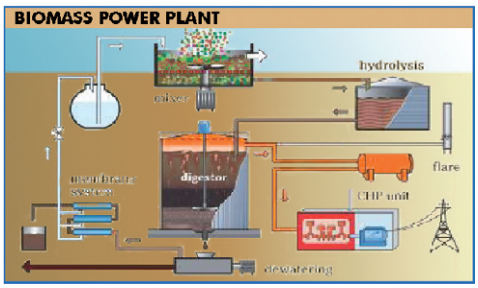
Wind-Powered Power Plant



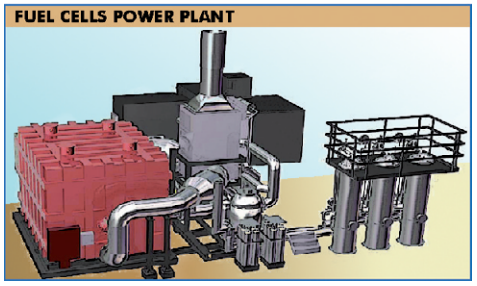
Photovoltaic Power Plant



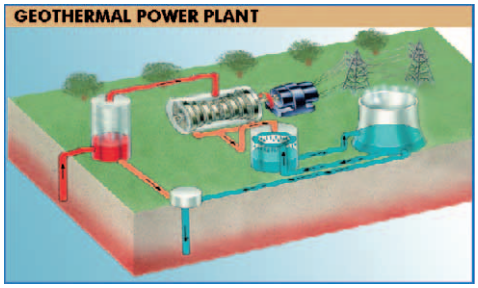
Heliothermic Power Plant



Biomass Power Plant



Fuel Cells Power Plant



Geothermal Power Plant

5.2- Energy Power Plants

www.edibon.com/products/index.php?area=energy&subarea=energypowerplants&lang=en

MPSS. **Modular Power System Simulator** NEW

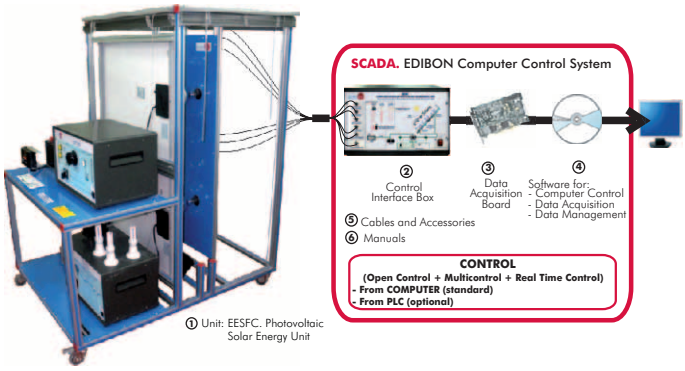
AVR/P.
Automatic Voltage Regulator/P

5.3- Renewable (Alternative) Energies

www.edibon.com/products/index.php?area=energy&subarea=alternativeenergies&lang=en

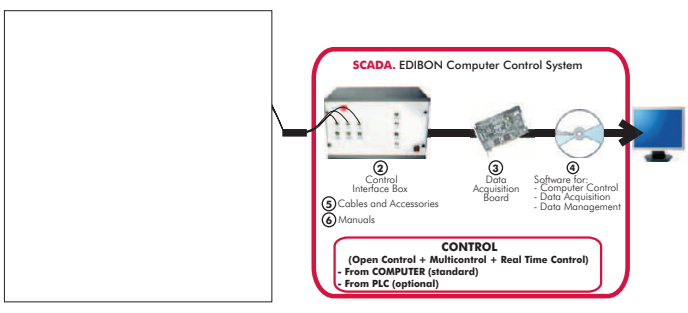
➤Photovoltaic

EESFC. Computer Controlled **Photovoltaic Solar Energy Unit** ✱



MINI-EESF. **Photovoltaic Solar Energy Modular Trainer**

EF5C. Computer Controlled **Photovoltaic Solar Energy Concentrator Unit** ✱ NEW

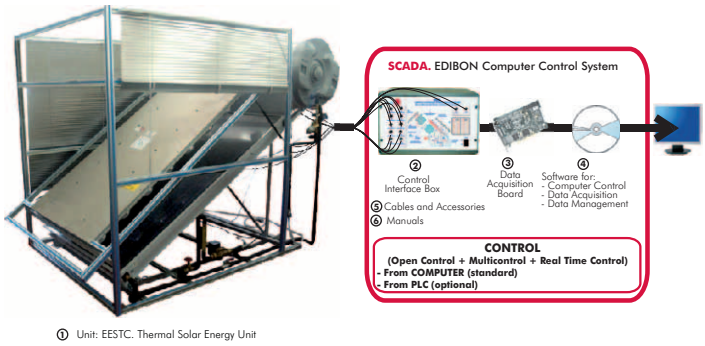


✱ Non computer controlled version available too.

www.edibon.com/products/index.php?area=energy&subarea=alternativeenergies&lang=en

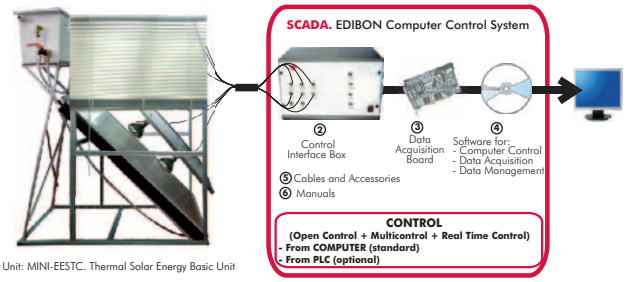
➤Solar Thermal

EESTC. Computer Controlled **Thermal Solar Energy Unit** ✱



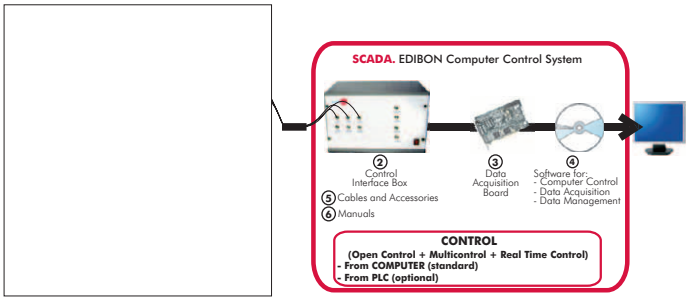
① Unit: EESTC. Thermal Solar Energy Unit

MINI-EESTC. Computer Controlled **Thermal Solar Energy Basic Unit**✱ NEW



① Unit: MINI-EESTC. Thermal Solar Energy Basic Unit

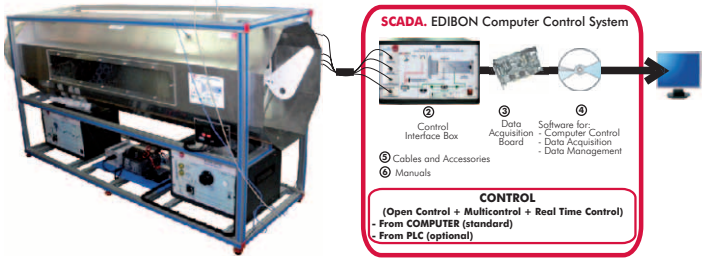
ET5C. Computer Controlled **Thermal Solar Energy Concentrator Unit**✱ NEW



① Unit: ET5C. Thermal Solar Energy Concentrator Unit

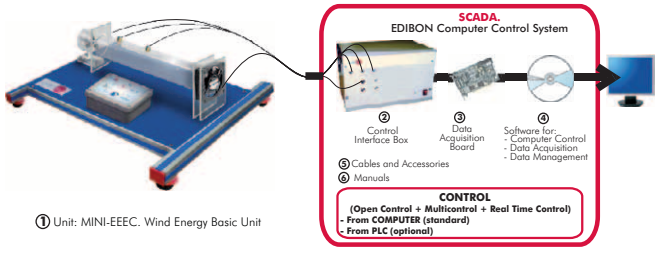
➤Wind

EEEC. Computer Controlled **Wind Energy Unit** ✱



① Unit: EEEC. Wind Energy Unit

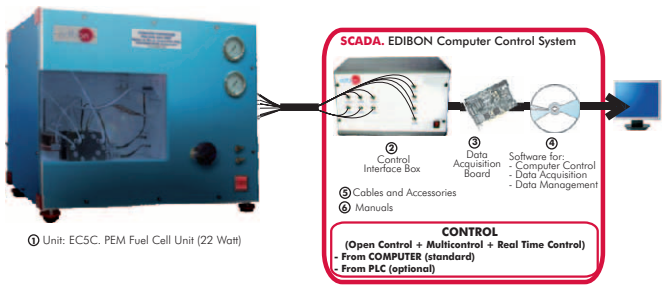
MINI-EEEC. Computer Controlled **Wind Energy Basic Unit**✱ NEW



① Unit: MINI-EEEC. Wind Energy Basic Unit

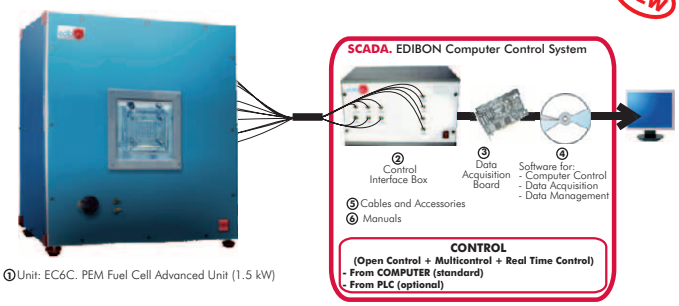
➤Fuel Cells

EC5C. Computer Controlled **PEM Fuel Cell Unit** (22 Watt)✱ NEW



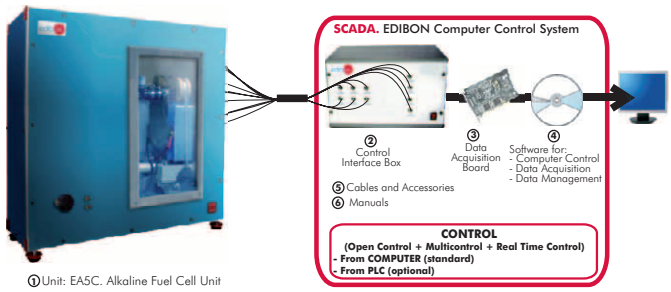
① Unit: EC5C. PEM Fuel Cell Unit (22 Watt)

EC6C. Computer Controlled **PEM Fuel Cell Advanced Unit** (1.5 kW)✱ NEW



① Unit: EC6C. PEM Fuel Cell Advanced Unit (1.5 kW)

EA5C. Computer Controlled **Alkaline Fuel Cell Unit** ✱ NEW

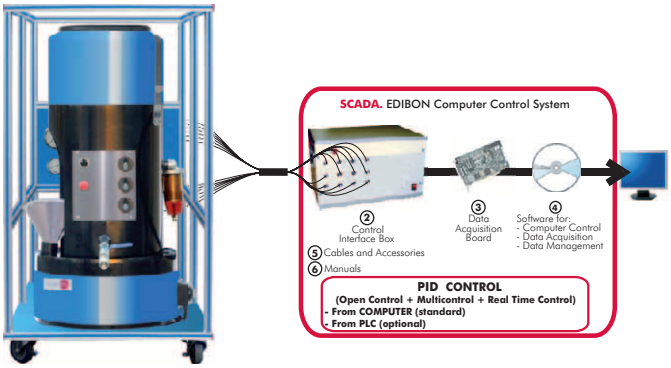


① Unit: EA5C. Alkaline Fuel Cell Unit

✱ Non computer controlled version available too.

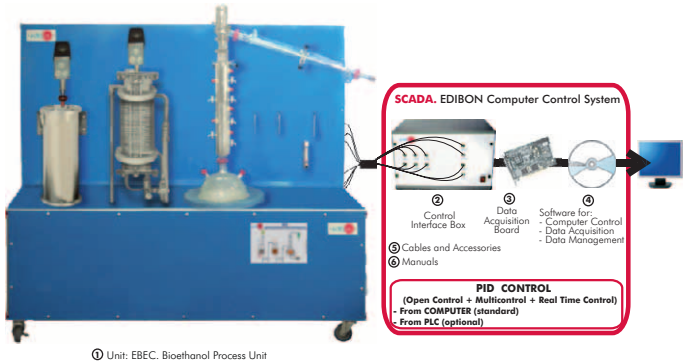
➤Bio

EBDC. Computer Controlled **Biodiesel Process Unit** ✱ NEW



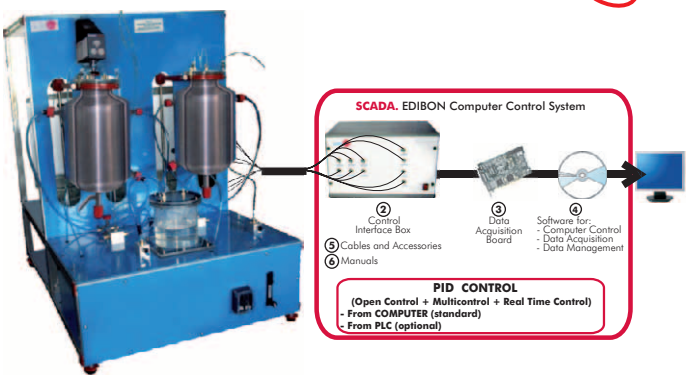
① Unit: EBDC. Biodiesel Process Unit

EBEC. Computer Controlled **Bioethanol Process Unit** ✱ NEW



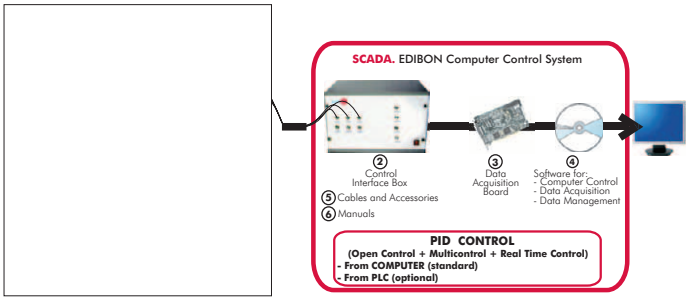
① Unit: EBEC. Bioethanol Process Unit

EBGC. Computer Controlled **Biogas Process Unit** ✱ NEW



① Unit: EBGC. Biogas Process Unit

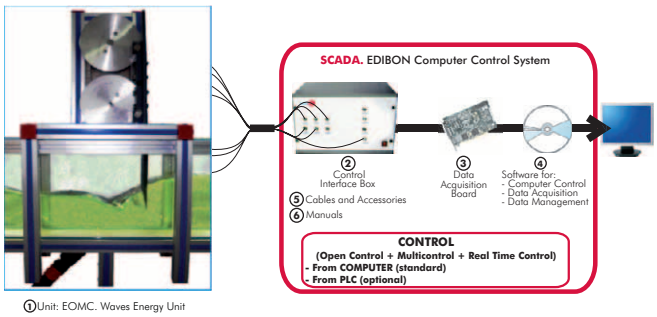
EBMC. Computer Controlled **Biomass Process Unit** ✱ NEW



① Unit: EBMC. Biomass Process Unit

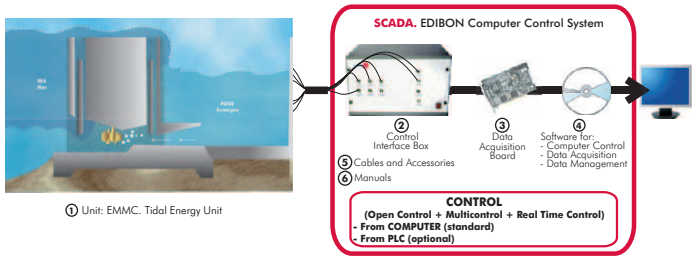
➤Sea

EOMC. Computer Controlled **Waves Energy Unit** ✱ NEW



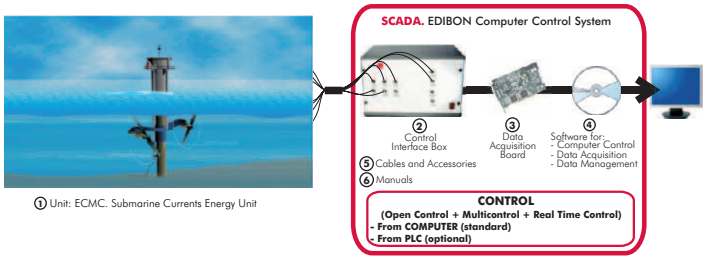
① Unit: EOMC. Waves Energy Unit

EMMC. Computer Controlled **Tidal Energy Unit** ✱ NEW



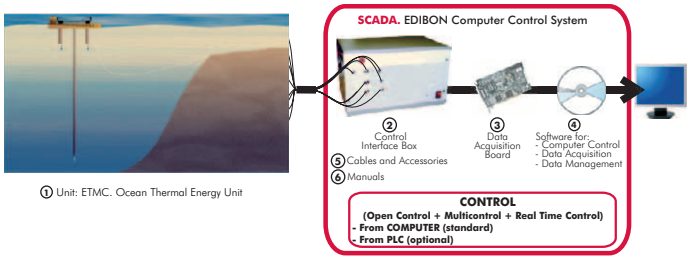
① Unit: EMMC. Tidal Energy Unit

ECMC. Computer Controlled **Submarine Currents Energy Unit** ✱ NEW



① Unit: ECMC. Submarine Currents Energy Unit

ETMC. Computer Controlled **Ocean Thermal Energy Unit** ✱ NEW



① Unit: ETMC. Ocean Thermal Energy Unit

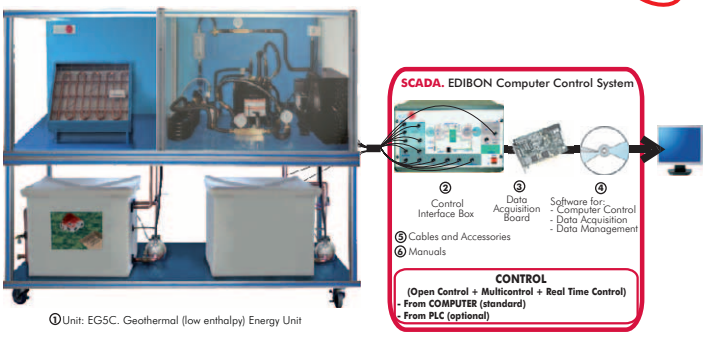
✱ Non computer controlled version available too.

5.3- Renewable (Alternative) Energies

www.edibon.com/products/index.php?area=energy&subarea=alternativeenergies&lang=en

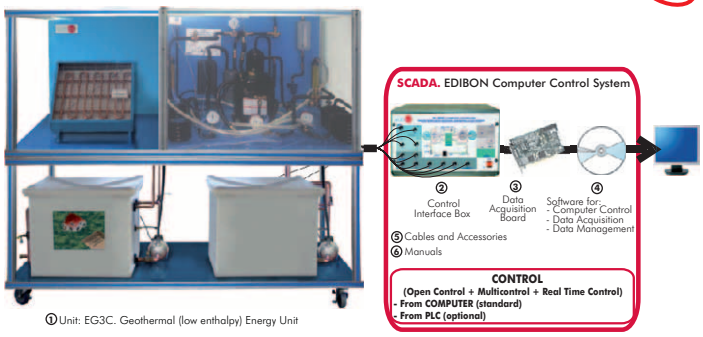
➤Geothermal

EG5C. Computer Controlled **Geothermal (low enthalpy) Energy Unit** ✱ NEW



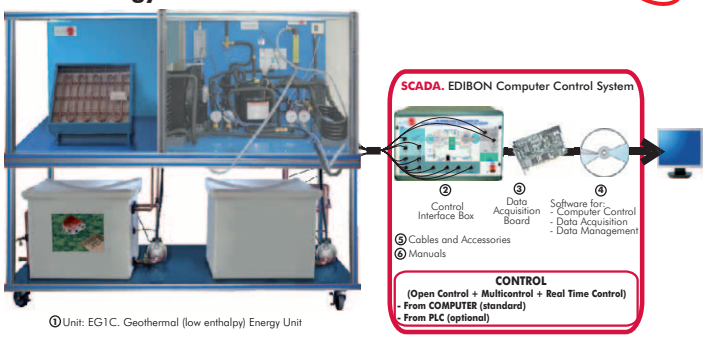
① Unit: EG5C. Geothermal (low enthalpy) Energy Unit

EG3C. Computer Controlled **Geothermal (low enthalpy) Energy Unit** ✱ NEW



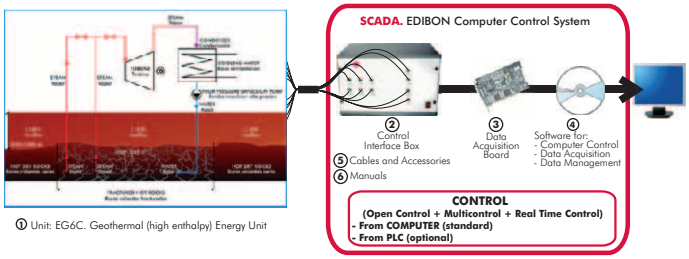
① Unit: EG3C. Geothermal (low enthalpy) Energy Unit

EG1C. Computer Controlled **Geothermal (low enthalpy) Energy Unit** ✱ NEW



① Unit: EG1C. Geothermal (low enthalpy) Energy Unit

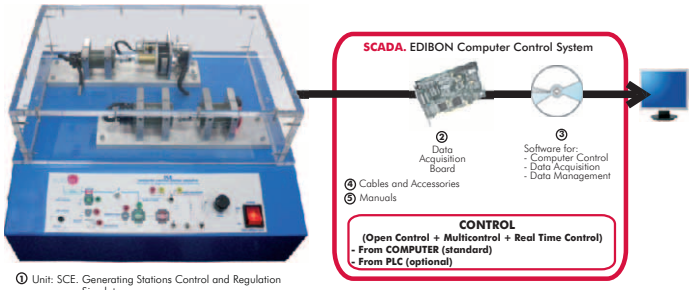
EG6C. Computer Controlled **Geothermal (high enthalpy) Energy Unit** ✱ NEW



① Unit: EG6C. Geothermal (high enthalpy) Energy Unit

➤Hidro

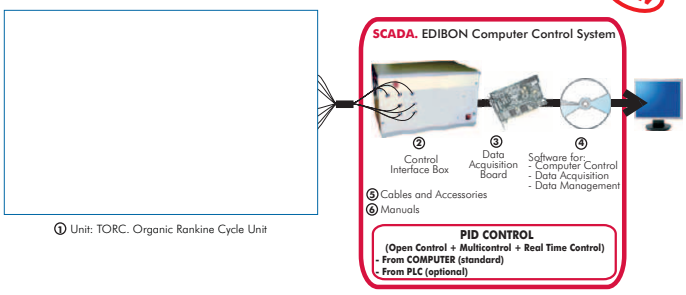
SCE. Computer Controlled **Generating Stations Control and Regulation Simulator**



① Unit: SCE. Generating Stations Control and Regulation Simulator

➤Organic

TORC. Computer Controlled **Organic Rankine Cycle Unit** NEW



① Unit: TORC. Organic Rankine Cycle Unit

Other available Units: NEW

-EFTEC. Computer Controlled **Turbine Electric Hub Troubleshooting Learning System**

-EFTNC. Computer Controlled **Turbine Nacelle Troubleshooting Learning System**

5.4- Relays Units

www.edibon.com/products/index.php?area=energy&subarea=relaysunits&lang=en

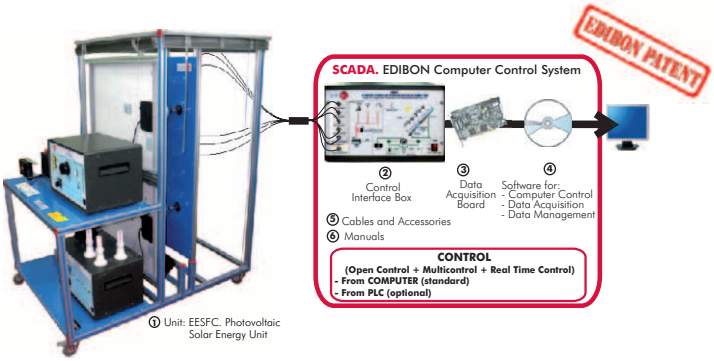
Available Unit:

-ERP. **Protection Relay Test** (see page 25)

✱ Non computer controlled version available too.

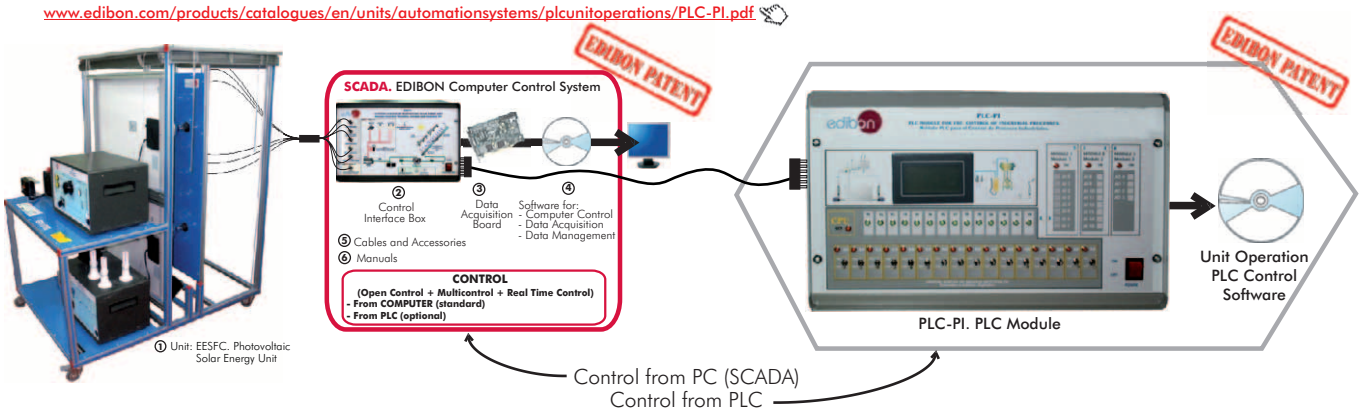
Energy control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

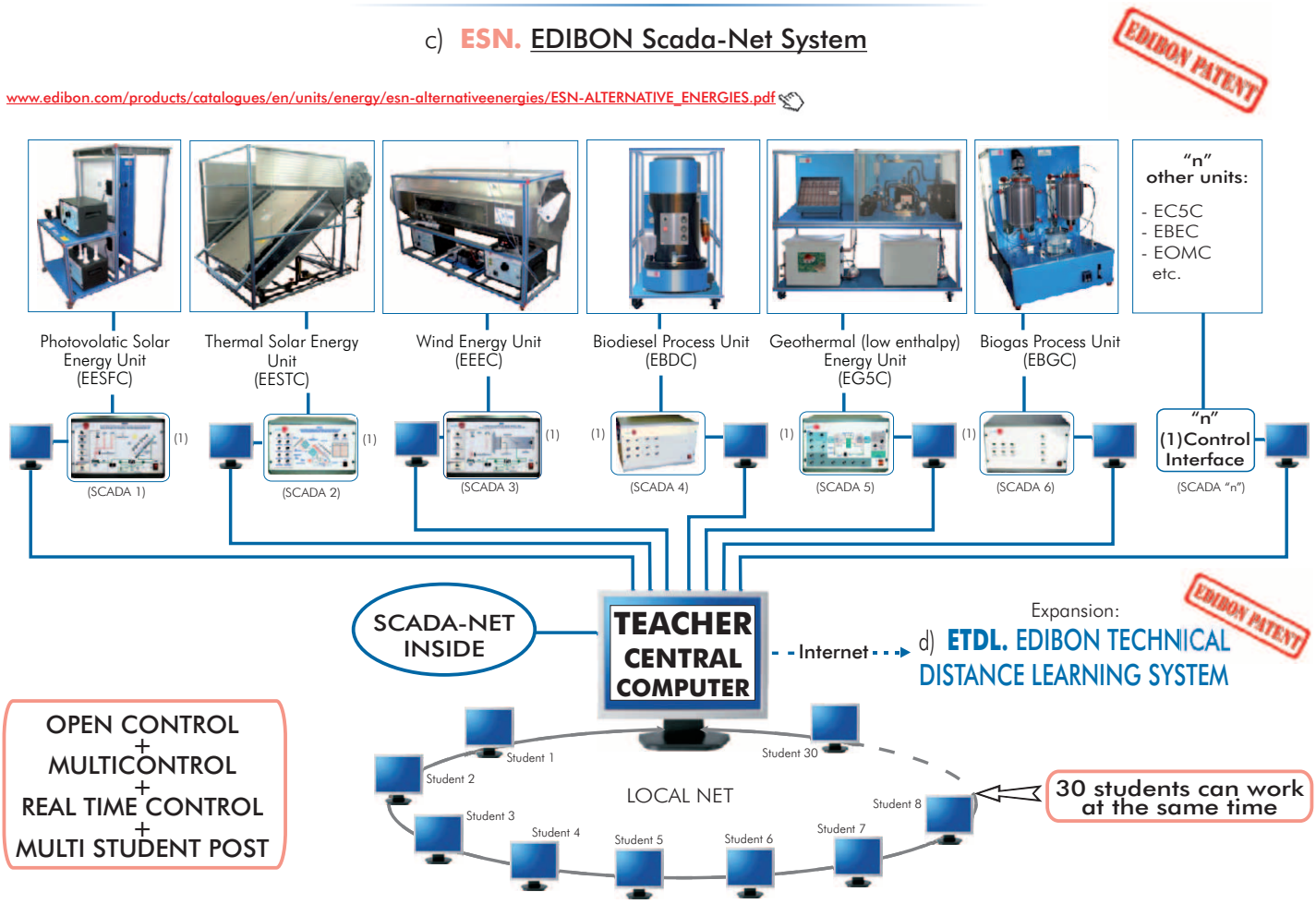


Units that can use Control from PC and PLC in this area:

EESFC, EF5C, EESTC, MINI-EESTC, ET5C, EEEC, MINI-EEEC, EC5C, EC6C, EA5C, EBDC, EBEC, EBGC, EBMC, EOMC, EMMC, ECMC, ETMC, EG5C, EG3C, EG1C, EG6C, SCE, TORC, EFTEC, EFTNC.

c) ESN. EDIBON Scada-Net System

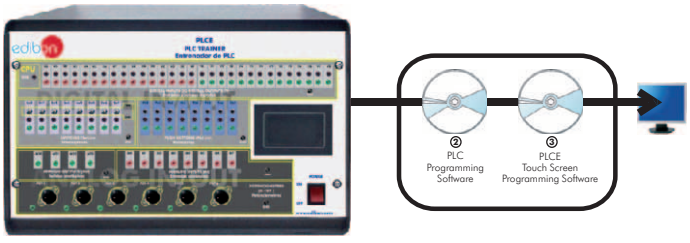
www.edibon.com/products/catalogues/en/units/energy/esn-alternativeenergies/ESN-ALTERNATIVE_ENERGIES.pdf



Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

www.edibon.com/products/index.php?area=automationsystems&subarea=plcprocessemulation&lang=en

PLCE. **PLC Trainer**



① Unit: PLCE. PLC Trainer

PLC Process Emulators for working with PLCE: NEW

➤Traffic and Parking

PLCE-CST.
Traffic Signal Control

PLCE-AV.
Car Parking

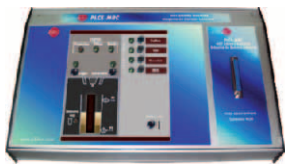
PLCE-AG2Z.
Two Zones Parking Garage

➤Small Industrial Machines

PLCE-CA.
Elevator Control

PLCE-CLA.
Automatic Washing Machine Control

PLCE-MB.
Drinks Machine



PLCE-MBC.
Hot Drinks Machine

PLCE-CB.
Pump Control

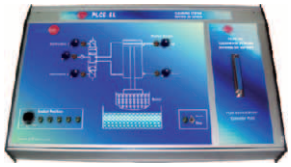
PLCE-MA.
Embossing Machine

➤Small Industrial Systems

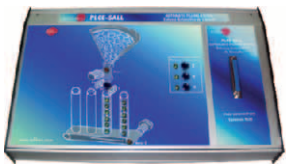
PLCE-ST.
Drilling System

PLCE-SBAR.
Dirty-Water Pump System

PLCE-SBP.
Pump System (Pressure)



PLCE-SL.
Cleaning System



PLCE-SALL.
Automatic Filling System

PLCE-SBT.
Conveyor Belts System

PLCE-SCCT.
Conveyor Charging System

PLCE-SCA.
Canalization System

PLCE-SDT.
Pipe Bending System

PLCE-PAE.
Automatic Stamping Press

PLCE. **PLC Trainer**

PLC Process Emulators for working with PLCE:

➤Big Industrial Systems

PLCE-PLLT.
Filling Process of Tanks

PLCE-SCC.
Collecting Belt Conveyor

PLCE-MCC.
Mails Allocation Machine

PLCE-RAC.
Compressed Air Network

PLCE-TC.
Coal Treatment

PLCE-PELE.
Packing Line and Bottling Plant

➤Simple Control Applications

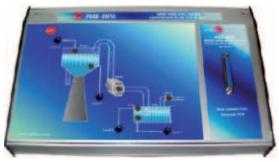
PLCE-CA2P.
Two-Doors Access Control

PLCE-CI.
Fire Control

PLCE-CP.
Proximity Control (security)

PLCE-CCO.
Sluice Gate Control

PLCE-CNC.
Level and Flow Control



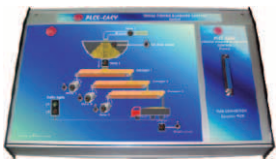
PLCE-CNTA.
Water Tower Level Control

PLCE-CF.
Photo Control

PLCE-CMM.
Molding Machine Control

PLCE-CPOS.
Position Control

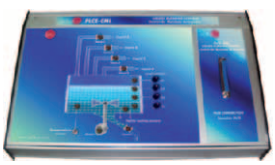
PLCE-CS.
Silo Control



PLCE-CACV.
Vehicle Feeding & Loading Control

➤Industrial Control Applications

PLCE-ACC.
Feeding and Loading Control



PLCE-CML.
Liquids Blending Control

PLCE-CME.
Mixer Control

PLCE-CR.
Reactor Control

PLCE-CCP.
Count and Position Control

PLCE-CL.
Rolling Mill Control

PLCE-CTRA.
WorkCell Application

PLCE-CTI.
Tower Lighting Control

www.edibon.com/products/index.php?area=automationsystems&subarea=plcprocessemulation&lang=en

PLCE. **PLC Trainer**

PLC Process Emulators for working with PLCE:

➤Thermal Applications

PLCE-AC.
Buffer Storage

PLCE-RT.
Temperature Regulation

PLCE-CSC.
Heating System Control

PLCE-CSV.
Ventilation System Control

➤Electrical Machines Control (Motors)

PLCE-M.
Motor Control

PLCE-MPP.
Stepper Motor Control

PLCE-MET.
Star-Delta Connection

PLCE-MCETI.
Reversing Star-Delta Connection

PLCE-MD.
Dahlander Motor Circuit

PLCE-M2BS.
Motor with 2 Separate Windings

PLCE-MAC.
Starting a Wound-Rotor Motor

➤Alarms/Current

PLCE-AN.
Annunciator

PLCE-SLU.
Running Lights

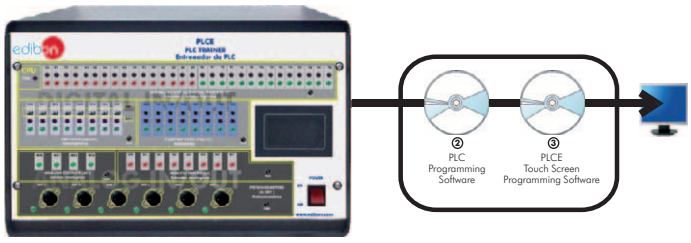
PLCE-CPR.
Reactive Current Compensation

PLCE-MCI.
Reversing Contactor

6.2- Automation (PLC Small Scale Real Applications)

www.edibon.com/products/index.php?area=automationsystems&subarea=plcrealapplications&lang=en

PLCE. **PLC Trainer**



① Unit: PLCE. PLC Trainer

PLC Small Scale Real Applications for working with PLCE: NEW

➤**Sensors**

PLCE-BS1.
Vibration and/or Deformation Test Module

PLCE-BS2.
Temperature Test Module

PLCE-BS3.
Pressure Test Module

PLCE-BS4.
Flow Test Module

PLCE-BS5.
Ovens Test Module

PLCE-BS6.
Liquid Level Test Module

PLCE-BS7.
Tachometers Test Module

PLCE-BS8.
Proximity Test Module

PLCE-BS9.
Pneumatic Test Module

PLCE-BS10.
Light Test Module

Other available Applications: NEW

➤**Conveyors**
➤**Elevators**

6.3- Automation (Industrial PLC Applications)

www.edibon.com/products/index.php?area=automationsystems&subarea=plcindustrial&lang=en

PLC-IN. **PLC Industrial Control System** NEW

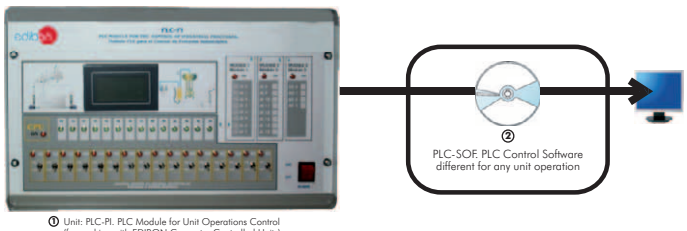
Available Industrial PLC Applications:

- PLC-IN-1. **Motor Control Application**
- PLC-IN-2. **Servo Motor Control Application**

Etc.

www.edibon.com/products/index.php?area=automationsystems&subarea=plcunitoperations&lang=en

PLC-PI. **PLC Module for Unit Operations Control** (for working with EDIBON Computer Controlled Units)

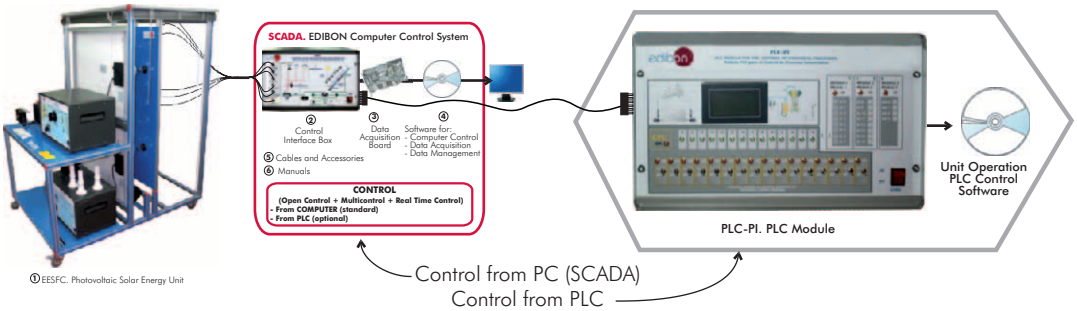


① Unit: PLC-PI. PLC Module for Unit Operations Control (for working with EDIBON Computer Controlled Units)

PLC Unit Operations Applications:

Energy Area:

Example



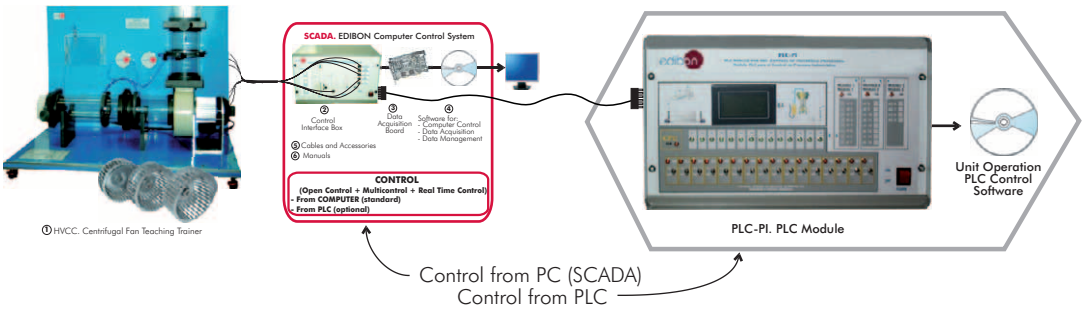
List of Units that can use PLC-PI:

EESFC.	Computer Controlled Photovoltaic Solar **Energy Unit**
EF5C.	Computer Controlled **Photovoltaic Solar Energy Concentrator Unit**
EESTC.	Computer Controlled **Thermal Solar Energy Unit**
MINI-EESTC.	Computer Controlled **Thermal Solar Energy Basic Unit**
ET5C.	Computer Controlled **Thermal Solar Energy Concentrator Unit**
EEEC.	Computer Controlled **Wind Energy Unit**
MINI-EEEC.	Computer Controlled **Wind Energy Basic Unit**
EC5C.	Computer Controlled **PEM Fuel Cell Unit** (22 Watt)
EC6C.	Computer Controlled **PEM Fuel Cell Advanced Unit** (1.5 kW)
EA5C.	Computer Controlled **Alkaline Fuel Cell Unit**
EBDC.	Computer Controlled **Biodiesel Process Unit**
EBEC.	Computer Controlled **Bioethanol Process Unit**
EBGC.	Computer Controlled **Biogas Process Unit**
EBMC.	Computer Controlled **Biomass Process Unit**
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**
EG5C.	Computer Controlled **Geothermal (low enthalpy) Energy Unit**
EG6C.	Computer Controlled **Geothermal (high enthalpy) Energy Unit**
SCE.	Computer Controlled **Generating Stations Control and Regulation Simulator**
TORC.	Computer Controlled **Organic Rankine Cycle Unit**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

Fluid Mechanics & Aerodynamics Area:

Example



List of Units that can use PLC-PI:

AFTC.	Computer Controlled **Fluid Friction in Pipes**, with Hydraulics Bench (FME00)
AMTC.	Computer Controlled **Pipe Network Unit**, with Hydraulics Bench (FME00)
EGAC.	Computer Controlled **Water Hammer Unit**
CFC.	Computer Controlled **Flow Channels (section: 80 x 300 mm)**
CFGC.	Computer Controlled **Flow Channels (section: 300 x 450 mm)**
PBOC.	Computer Controlled **Multipump Testing Bench**
PBCC.	Computer Controlled **Centrifugal Pump Bench**
PBSPC.	Computer Controlled **Series/Parallel Pumps Bench**
PBEC.	Computer Controlled **Gear Pump Bench**
PBAC.	Computer Controlled **Axial Pump Bench**
PBRC.	Computer Controlled **Piston Pump Bench**
HVCC.	Computer Controlled **Centrifugal Fan Teaching Trainer**
HVAC.	Computer Controlled **Axial Fan Teaching Trainer**
TFRC.	Computer Controlled **Radial Flow Turbine**
TPC.	Computer Controlled **Pelton Turbine**
TFAC.	Computer Controlled **Axial Flow Turbine**
TFC.	Computer Controlled **Francis Turbine**
TKC.	Computer Controlled **Kaplan Turbine**
HTRC.	Computer Controlled **Experimental Reaction Turbine**
HTIC.	Computer Controlled **Experimental Impulse Turbine**
TA50/250C.	Computer Controlled **Aerodynamic Tunnel, 50 x 250 mm**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

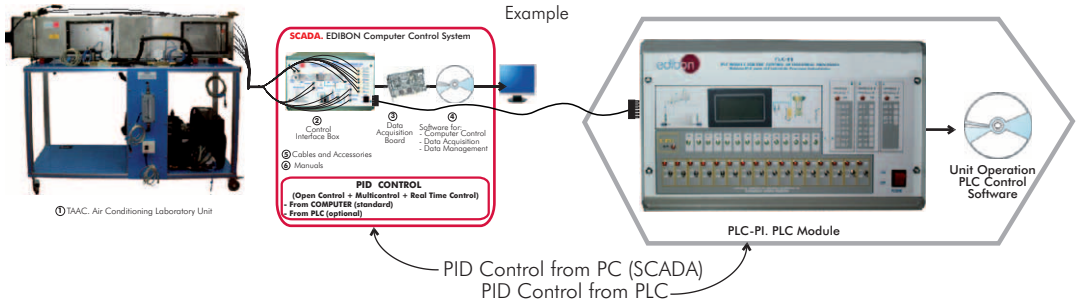
www.edibon.com/products/index.php?area=automationsystems&subarea=plcunitoperations&lang=en

PLC-PI. **PLC Module for Unit Operations Control** (for working with EDIBON Computer Controlled Units)

PLC Unit Operations Applications:

Thermodynamics & Thermotechnics Area:

Example



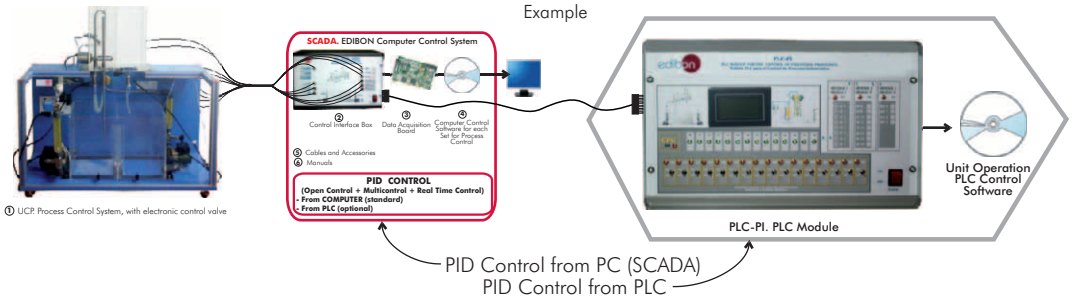
List of Units that can use PLC-PI:

TCRC. Computer Controlled **Refrigeration Cycle Demonstration Unit**
TRAC. Computer Controlled **Absorption Refrigeration Unit**
THIBAR22C. Computer Controlled **Heat Pump+Air Conditioning+Refrigeration Unit, with Cycle Inversion Valve** (two condensers and two evaporators)
THAR22C. Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers and two evaporators)
THAR2LC. Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers and water evaporator)
THARL2C. Computer Controlled **Refrigeration and Air Conditioning Unit** (water condenser and two evaporators)
THARA2C. Computer Controlled **Refrigeration and Air Conditioning Unit** (air condenser and two evaporators)
THARLLC. Computer Controlled **Refrigeration and Air Conditioning Unit** (water condenser and water evaporator)
THARALC. Computer Controlled **Refrigeration and Air Conditioning Unit** (air condenser and water evaporator)
THARA2C/1. Computer Controlled **Capacity Control Methods in Refrigeration**
THARA2C/2. Computer Controlled **Double Chamber Refrigerator Module**
THALAC/1. Computer Controlled **Multiple Compressor Refrigeration Control**
TCPISC. Computer Controlled **Cooling Plant with Ice Store**
TPVC. Computer Controlled **Vortex Tube Refrigerator Unit**
TPCC. Computer Controlled **Contact Plate Freezer**
TEVC. Computer Controlled **Ventilation Trainer**
EACC. Computer Controlled **Hot Water Production and Heating Teaching Unit**
THB22C. Computer Controlled **Heat Pump Unit** (two condensers and two evaporators)
THB2LC. Computer Controlled **Heat Pump Unit** (two condensers and water evaporator)
THBL2C. Computer Controlled **Heat Pump Unit** (water condenser and two evaporators)
THBA2C. Computer Controlled **Heat Pump Unit** (air condenser and two evaporators)
THBLLC. Computer Controlled **Heat Pump Unit** (water condenser and water evaporator)
THBALC. Computer Controlled **Heat Pump Unit** (air condenser and water evaporator)
THB2AC. Computer Controlled **Heat Pump Unit** (two condensers and air evaporator)
THBLAC. Computer Controlled **Heat Pump Unit** (water condenser and air evaporator)
THBAAC. Computer Controlled **Heat Pump Unit** (air condenser and air evaporator)
TBTC. Computer Controlled **Thermo-Electric Heat Pump**
TAAC. Computer Controlled **Air Conditioning Laboratory Unit**
TARC. Computer Controlled **Recirculating Air Conditioning Unit**
TAAUC. Computer Controlled **Automobile Air Conditioning Trainer**
THAAAC. Computer Controlled **Air Conditioning Unit** (air condenser and air evaporator)
THALAC. Computer Controlled **Air Conditioning Unit** (water condenser and air evaporator)
THA2AC. Computer Controlled **Air Conditioning Unit** (two condensers and air evaporator)
TTEC. Computer Controlled **Bench Top Cooling Tower**
TICC. Computer Controlled **Heat Exchangers Training System**
TSTCC. Computer Controlled **Heat Transfer Series**
TRTC. Computer Controlled **Thermal Radiation and Light Radiation Unit**
TTLFC. Computer Controlled **Fluidisation and Fluid Bed Heat Transfer Unit**
TCEC. Computer Controlled **Boiling Heat Transfer Unit**
TCCC. Computer Controlled **Heat Conduction Unit**
TCLGC. Computer Controlled **Thermal Conductivity of Liquids and Gases Unit**
TCPGC. Computer Controlled **Film and Dropwise Condensation Unit**
TCLFC. Computer Controlled **Free and Forced Convection Heat Transfer Unit**
TIFCC. Computer Controlled **Cross Flow Heat Exchanger**
TFLVC. Computer Controlled **Laminar/Viscous Flow Heat Transfer Unit**
TIVAC. Computer Controlled **Steam to Water Heat Exchanger**
TFEC. Computer Controlled **Flow Boiling Demonstration 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**
TFTC. Computer Controlled **Nozzle Performance Test Unit**
TPTVC. Computer Controlled **Steam Power Plant**
TCESC. Computer Controlled **Separating & Throttling Calorimeter**
TVCC. Computer Controlled **Combustion Laboratory Unit**
TVPLC. Computer Controlled **Flame Propagation and Stability Unit**
TBMC3. Computer Controlled **Test Bench for Single-Cylinder Engines, 2.2 kW**
TBMC8. Computer Controlled **Test Bench for Single-Cylinder Engines, 7.5 kW**
TBMC12. Computer Controlled **Test Bench for Single-Cylinder and Two-Cylinders Engines, 11 kW**
TBMC75. Computer Controlled **Test Bench for Four-Cylinders Engines, 75 kW**
TBMC-CG. Computer Controlled **Exhaust Gas Calorimeter**
TDEGC. Computer Controlled **Diesel Engine Electricity Generator**
TGDEC. Computer Controlled **Two-Shaft Gas Turbine**
TGDEPC. Computer Controlled **Two-Shaft Gas Turbine/Jet Engine**
TGFAC. Computer Controlled **Axial Flow Gas Turbine/Jet Engine**
TTVC. Computer Controlled **Steam Turbine**
HTVC. Computer Controlled **Solar/Heat Source Vapour Turbine**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

Process Control Area:

Example



List of Units that can use PLC-PI:

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)
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)

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

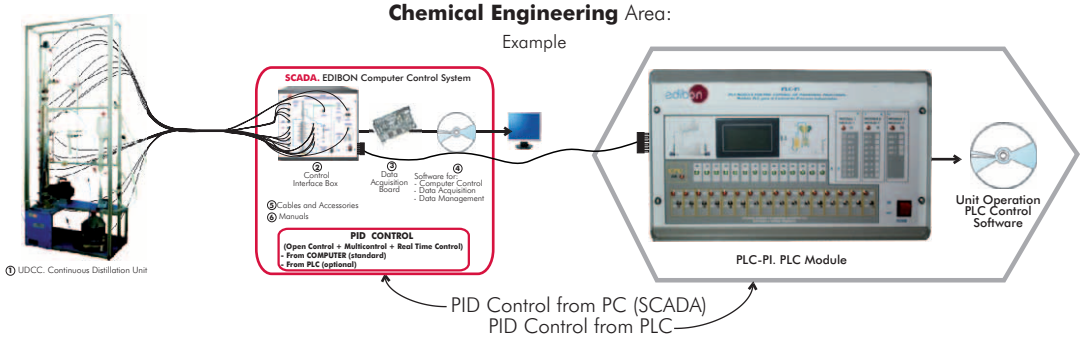
www.edibon.com/products/index.php?area=automationsystems&subarea=plcunitoperations&lang=en

PLC-PI. **PLC Module for Unit Operations Control** (for working with EDIBON Computer Controlled Units)

PLC Unit Operations Applications:

Chemical Engineering Area:

Example



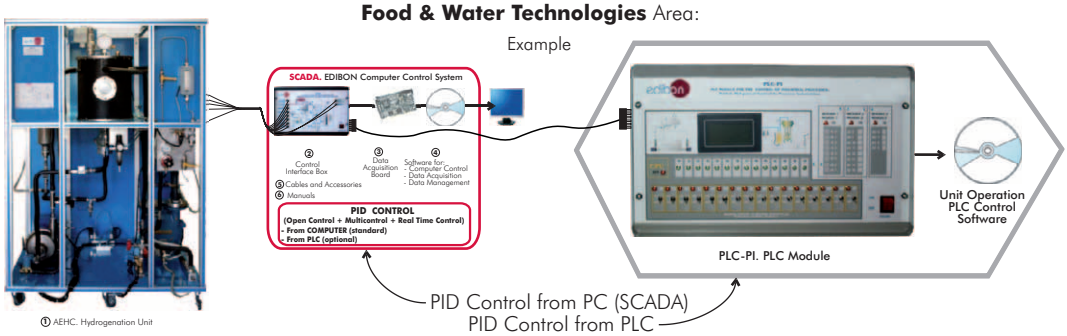
List of Units that can use PLC-PI:

CAGC.	Computer Controlled **Gas Absorption Column**
UELLC.	Computer Controlled **Liquid-Liquid Extraction Unit**
UDCC.	Computer Controlled **Continuous Distillation Unit**
UDDC.	Computer Controlled **Batch Distillation Unit**
UESLC.	Computer Controlled **Solid-Liquid Extraction Unit**
EPAC.	Computer Controlled **Rising Film Evaporator**
EDPAC.	Computer Controlled **Double Effect Rising Film Evaporator**
CAPC.	Computer Controlled **Wetted Wall Gas Absorption Column**
QDTLC.	Computer Controlled **Liquid Mass Transfer and Diffusion Coefficient Unit**
QDTGC.	Computer Controlled **Gaseous Mass Transfer and Diffusion Coefficient Unit**
QCCC.	Computer Controlled **Cracking Column**
QUCC.	Computer Controlled **Crystallisation Unit**
EPDC.	Computer Controlled **Falling Film Evaporator.**
EDPDC.	Computer Controlled **Double Effect Falling Film Evaporator**
QRQC.	Computer Controlled **Chemical Reactors Training System**
QRC.	Computer Controlled **Chemical Reactors Trainer**
QRCC.	Computer Controlled **Catalytic Reactors**
LFFC.	Computer Controlled **Fixed and Fluidised Bed Unit**
QEDC.	Computer Controlled **Batch Solvent Extraction and Desolventising Unit**
TFUC.	Computer Controlled **Continuous and Batch Filtration Unit**
EFLPC.	Computer Controlled **Deep Bed Filter Unit**
SBANC.	Computer Controlled **Tray Drier**
SSPC.	Computer Controlled **Spray Drier**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

Food & Water Technologies Area:

Example



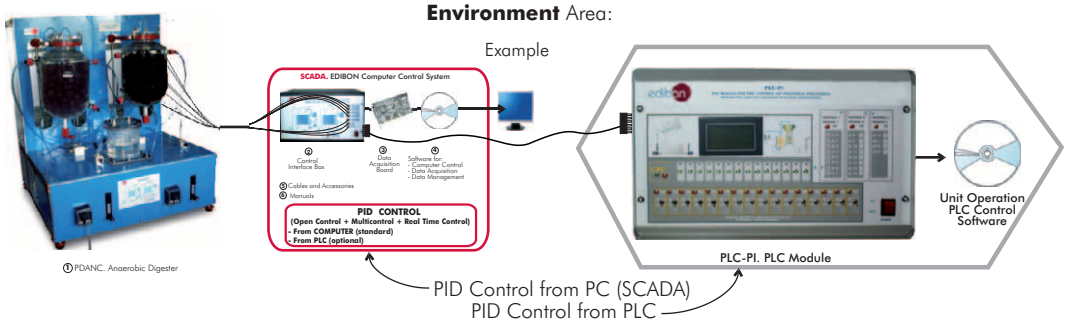
List of Units that can use PLC-PI:

PADC.	Computer Controlled **Teaching Autonomous Pasteurization Unit**
PASC.	Computer Controlled **Laboratory Pasteuriser**
AEHC.	Computer Controlled **Hydrogenation Unit**
AEDC.	Computer Controlled **Deodorising Unit**
TFDC.	Computer Controlled **Teaching Frigorific Tank**
EDLC.	Computer Controlled **Teaching Machine for Putting in Plastic Packing Liquids**
EDSC.	Computer Controlled **Teaching Machine for Putting into a Container Solids**
ROUC.	Computer Controlled **Reverse Osmosis/Ultrafiltration Unit**
VPMC.	Computer Controlled **Multipurpose Processing Vessel**
SBANC.	Computer Controlled **Tray Drier**
SSPC.	Computer Controlled **Spray Drier**
TPCC.	Computer Controlled **Contact Plate Freezer**
DSNC.	Computer Controlled **Teaching Cream Separator**
EMANC.	Computer Controlled **Butter Maker Teaching Unit**
AUHTC.	Computer Controlled **UHT Unit**
CCDC.	Computer Controlled **Teaching Curdled Tank**
PVQC.	Computer Controlled **Teaching Cheese Vertical Press**
IYDC.	Computer Controlled **Teaching Yogurt Incubator**
RDC.	Computer Controlled **Teaching Cottage Cheese Maker**
FQDC.	Computer Controlled **Teaching Cheese Melter**
PACC.	Computer Controlled **Continuous Cycle Oil Production Plant**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

Environment Area:

Example



List of Units that can use PLC-PI:

ESHC.	Computer Controlled **Hydrologic Systems, Rain Simulator and Irrigation Systems Unit**
PAHSC.	Computer Controlled **Soil Moisture Suction Sand Unit**
PDFDC.	Computer Controlled **Drainage and Seepage Tank**
PDSC.	Computer Controlled **Sedimentation Tank**
EFLPC.	Computer Controlled **Deep Bed Filter Unit**
PDAC.	Computer Controlled **Aerobic Digester**
PDANC.	Computer Controlled **Anaerobic Digester**
PEFC.	Computer Controlled **Flocculation Test Unit**
PEAIC.	Computer Controlled **Aeration Unit**
ROUC.	Computer Controlled **Reverse Osmosis/Ultrafiltration Unit**

- All these units can use PID control from PLC by using PLC-PI EDIBON Unit and the software related with any unit, and totally designed by EDIBON.

6.5- Automation (Regulation and Control)

www.edibon.com/products/index.php?area=automationsystems&subarea=automationregulation&lang=en

Available Unit:

-RYC. Computer Controlled **Teaching Unit for the Study of Regulation and Control** (see page 10)

6.6- Automation (Control)

www.edibon.com/products/index.php?area=automationsystems&subarea=automationcontrol&lang=en

CECI. **Industrial Controllers Trainer**

CRCI. **Industrial Controllers Networking**

CEAB. **Trainer for Field Bus Application**

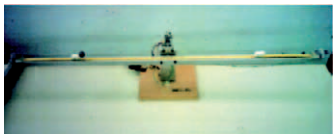
CEAC. **Controller Tuning Trainer**

EPID-T. **Industrial Regulation Trainer, PID type (Temperature)**

6.7- Systems

www.edibon.com/products/index.php?area=automationsystems&subarea=systems&lang=en

SBB. **Ball and Beam System**



Other available Units:

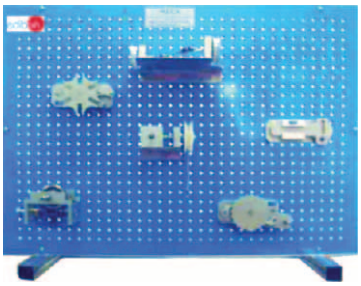
-CPVM. **DC Motor Position and Speed Control**

-SCE. Computer Controlled **Generating Stations Control and Regulation Simulator** (see page 31)

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=basic&lang=en

LIMEBA. **Basic Mechanics Integrated Laboratory:**

Base Panel



Modules

MECA1.
Statics Experiments

MECA2.
Load Elevation Mechanisms Experiments

MECA3.
Transmissions Experiments

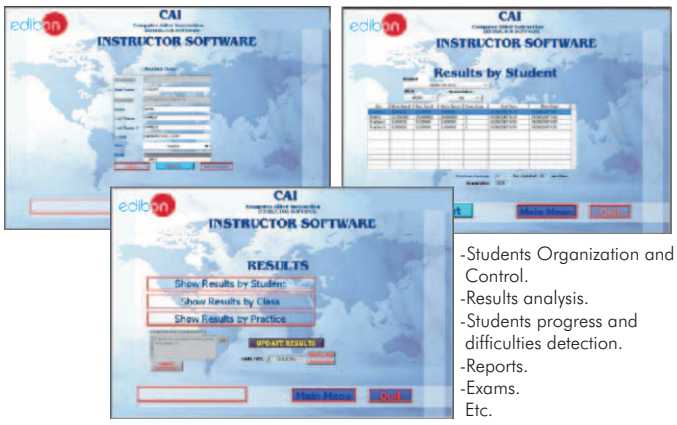
MECA4.
Dynamics Experiments

MECA5.
Friction Experiments

MECA6.
Special Mechanisms Experiments

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Module Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
-Etc.

Available Student/Module Software Packages:

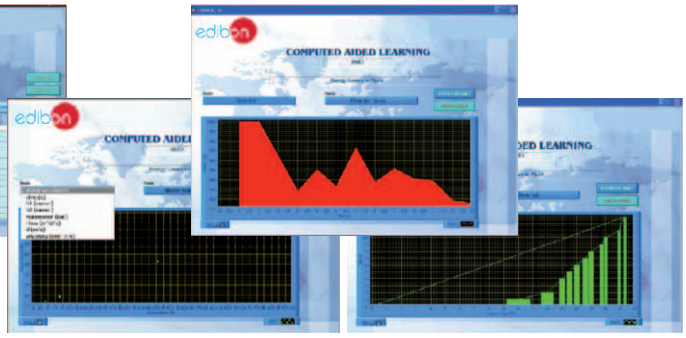
- MECA1/SOF. Statics Experiments.
- MECA2/SOF. Load Elevation Mechanisms Experiments.
- MECA3/SOF. Transmissions Experiments.
- MECA4/SOF. Dynamics Experiments.
- MECA5/SOF. Friction Experiments.
- MECA6/SOF. Special Mechanisms Experiments.

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=basic&lang=en

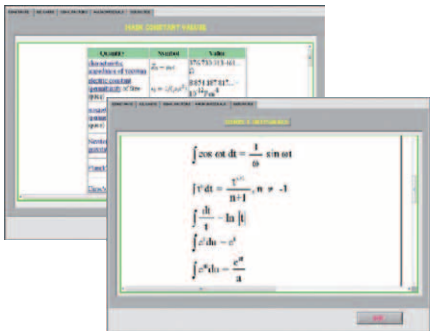
LIMEBA. **Basic Mechanics Integrated Laboratory:**

LIMEBA/CAL. Computer Aided Learning Software (Results Calculation and Analysis)

Calculations



Plotting options



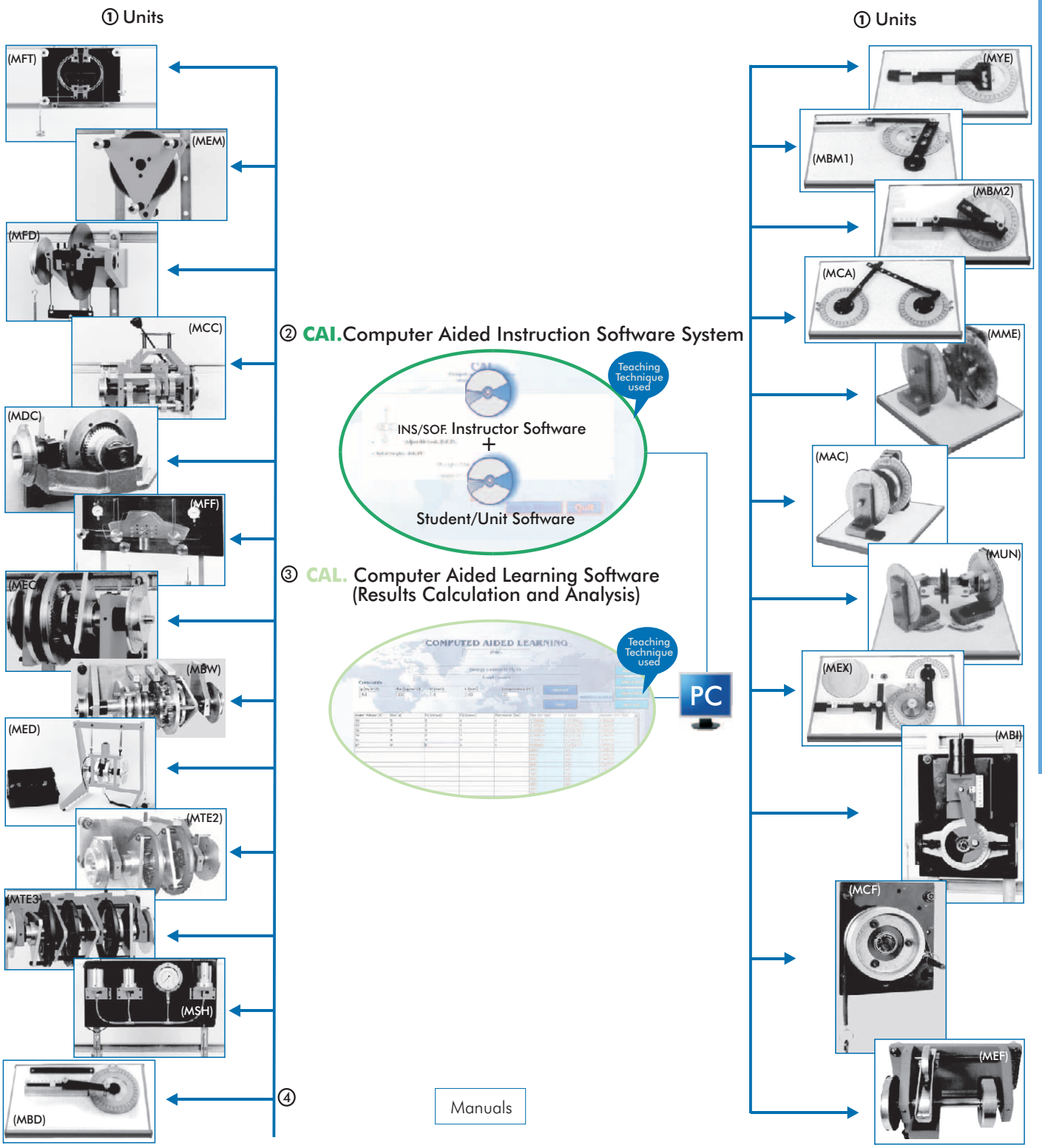
Information of constant values, unit conversion factors and integral and derivative tables

Available Software Packages:

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

7.2- General Mechanics

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=general&lang=en



Available Units

7.2.1.- Automotive Mechanisms

- -MFT. Drum Brake System.
- -MEM. Plate Clutch.
- -MFD. Disk Brake.
- -MCC. Gearbox.
- -MDC. Differential-Crownwheel and Pinion.
- -MFF. Braking and Accelerating Forces Unit.
- -MGE. Gear Generation Unit.

7.2.2.- Gears and Transmissions

- -MEC. Overdrive Unit.
- -MEE. Geared Lifting Machine.
- -MBW. Borg-Warner Automatic Transmission.
- -MED. Static & Dynamic Balancing Unit.
- -MTE1. Epicyclic Gear Unit (1 element).
- -MTE2. Epicyclic Gear Unit (2 elements).
- -MTE3. Epicyclic Gear Unit (3 elements).

7.2.3.- Mechanisms

- -MSH. Simple Hydraulic System.
- -MBD. Slider Crank Mechanism.
- -MYE. Scotch Yoke Mechanism.
- -MBM1. Slotted Link Mechanism.
- -MBM2. Whitworth Quick Return Mechanism.
- -MCA. Chain Mechanism.
- -MME. Geneva Stop Mechanism.
- -MAC. Coupling Mechanism.
- -MUN. Hook's Joint Mechanism.
- -MEX. Cam and Follower Mechanism.
- -MUV. Constant Velocity Joint Mechanism.
- -MBI. Crank Mechanism.

7.2.4.- Lubrication. Wear. Friction

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

7.3- Automotive

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=automotive&lang=en

7.4- Special Mechanics & Foundry

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=specialfoundry&lang=en

MCAM. **Bell Casting Basic Training Set**

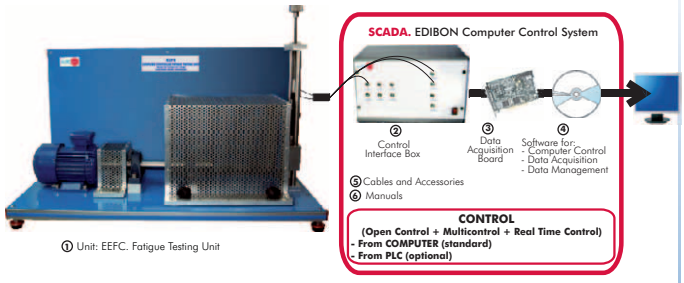
MCLA. **Foundry Building-up Training Set 1**

MCEN. **Centrifugal Casting Building-up Training Set 2**

7.5- Strength of Materials

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=strengthmaterials&lang=en

EEFC. Computer Controlled **Fatigue Testing Unit** ✱

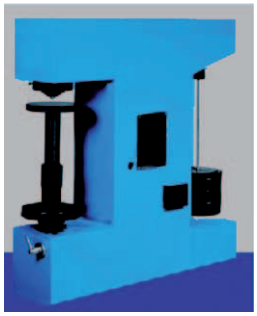


EEU/20KN. **Universal Material Testing Unit**

EEFCR. **Creep Testing Unit**

EEICI. **Charpy and Izod Impact Testing Unit**

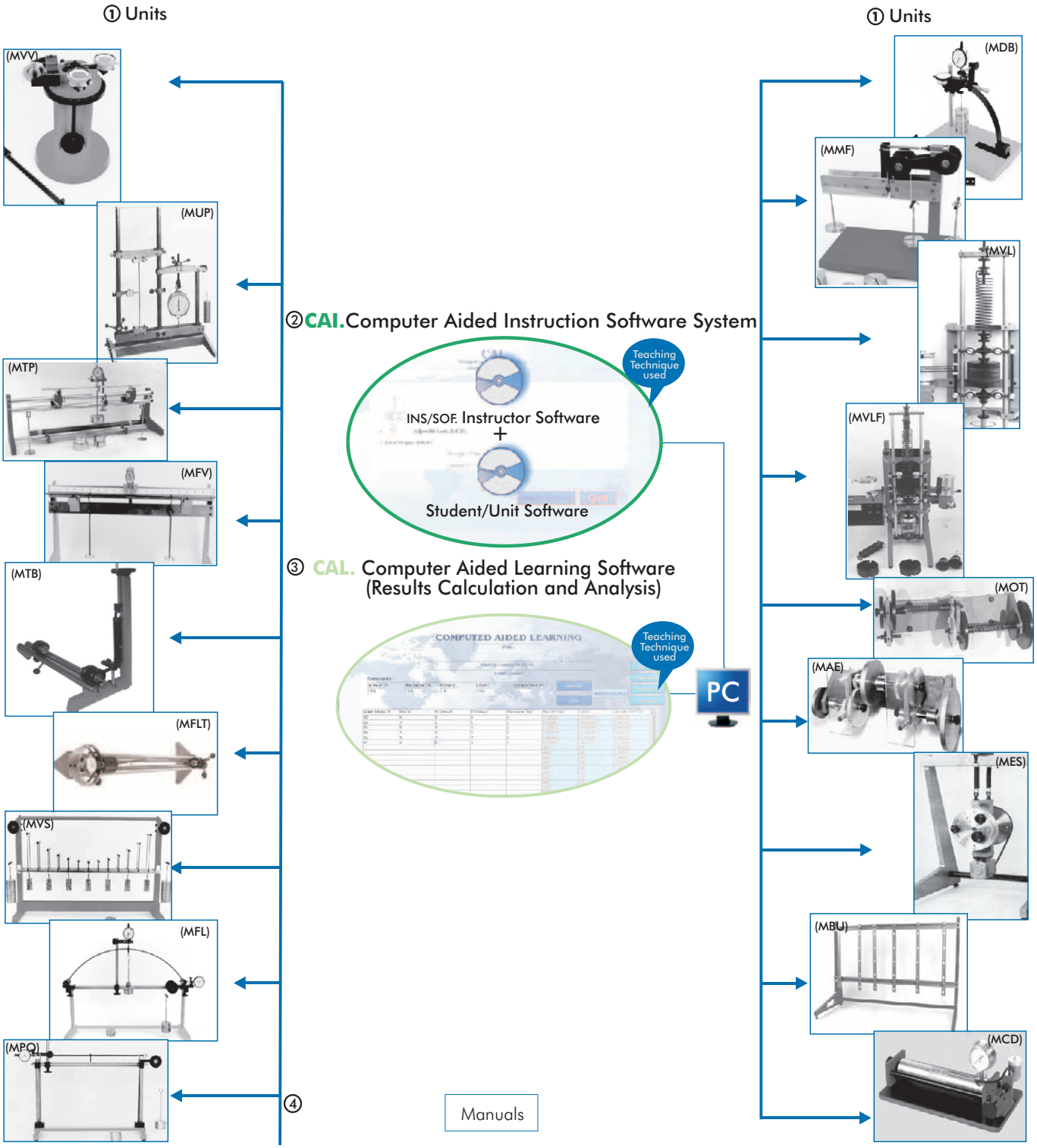
EEDB. **Brinell Hardness Testing Unit**



✱ Non computer controlled version available.

7.5- Strength of Materials

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=strengthmaterials&lang=en



Available Units

-MVV.	Unsymmetrical Cantilever Unit.
-MUP.	Loading of Struts Unit.
-MTP.	Twist & Bend Machine.
-MFV.	Beam Deflection Unit.
-MTB.	Torsion Unit.
-MFLT.	Strut Unit.
-MVS.	Suspension Bridge Unit.
-MFL.	Two Pinned Arch Unit.
-MPO.	Portal Frame Unit.
-MDB.	Deflection of Curved Bars Unit.
-MMF.	Shear Force and Bending Momentum Unit.
-MVL.	Free Vibration Unit.
-MVLF.	Free & Forced Vibration Unit.
-MOT.	Torsional Oscillations Unit.
-MAE.	Acceleration of Geared Systems Unit.
-MES.	Simple Balancing Unit.
-MBU.	Universal Bench Mounted Frame.
-MCG.	Strain Gauge Calibration Unit.
-MCD.	Thin Cylinder Unit.

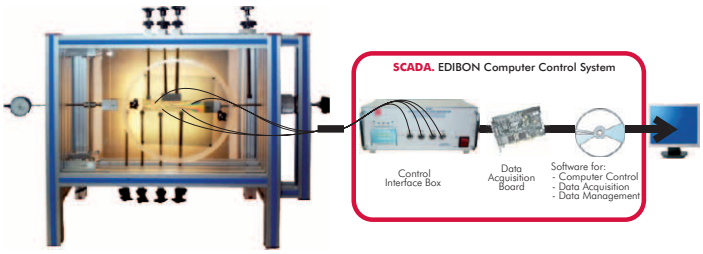
7.5- Strength of Materials

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=strengthmaterials&lang=en

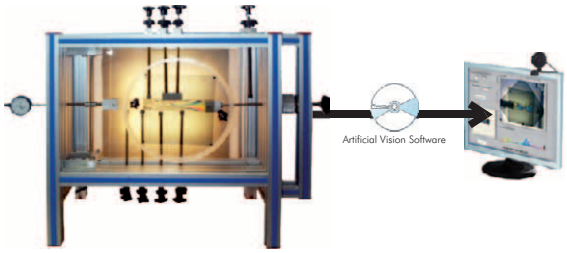
Photoelasticity Units:

EFO. **Photoelasticity Unit**

EFOC. **Photoelasticity Unit with Strain Gauges Measurement System** (quality and quantity measurement in some points)



EFOV. **Photoelasticity Unit with Artificial Vision System** NEW
(quality and quantity measurement in any point)



7.6- Basic Cut Away Mechanics 7.7- General Cut Away Mechanics

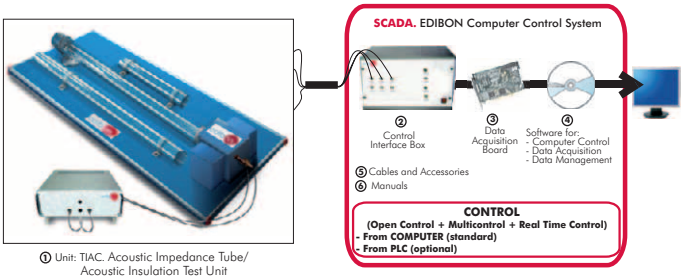
www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=basiccutaway&lang=en

www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=generalcutaway&lang=en

7.8- Building

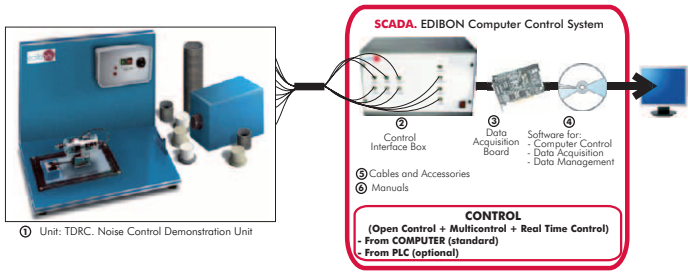
www.edibon.com/products/index.php?area=mechanicsmaterials&subarea=building&lang=en

TIAC. Computer Controlled **Acoustic Impedance Tube/Acoustic Insulation Test Unit**



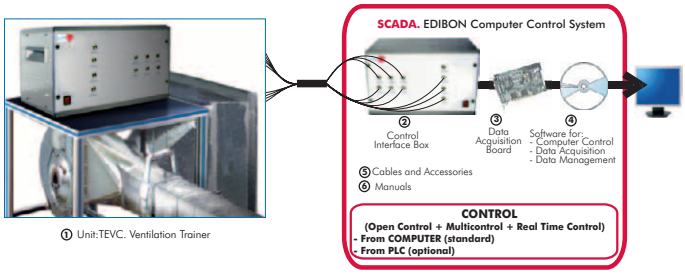
① Unit: TIAC. Acoustic Impedance Tube/ Acoustic Insulation Test Unit

TDRC. Computer Controlled **Noise Control Demonstration Unit**



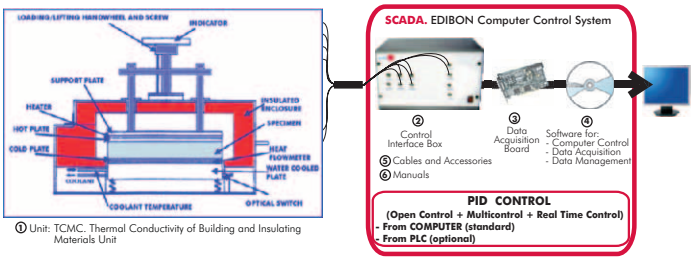
① Unit: TDRC. Noise Control Demonstration Unit

TEVC. Computer Controlled **Ventilation Trainer**



① Unit:TEVC. Ventilation Trainer

TCMC. Computer Controlled **Thermal Conductivity of Building and Insulating Materials Unit**



① Unit: TCMC. Thermal Conductivity of Building and Insulating Materials Unit

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=fluidmechanicsbasic&lang=en

LIFLUBA. **Basic Fluids Mechanics Integrated Laboratory:**

Base Service Units

FME00.
Hydraulics Bench

FME00/B.
Basic Hydraulics Feed System

Modules

➤General concepts

FME01.
Impact of a Jet

FME02.
Flow over Weirs

FME04.
Orifice Discharge

FME14.
Free and Forced Vortices

FME08.
Hydrostatic Pressure

FME10.
Dead Weight Calibrator

FME11.
Metacentric Height

FME26.
Depression Measurement System (vacuum gauge)

FME32.
Pitot Static Tube Module

➤Laws

FME03.
Bernoulli's Theorem Demonstration

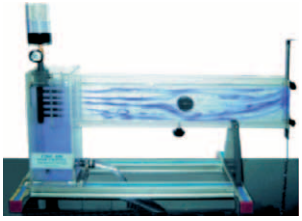
FME22.
Venturi, Bernoulli and Cavitation Unit

FME06.
Osborne-Reynolds' Demonstration

FME31.
Horizontal Osborne-Reynolds Demonstration

FME24.
Unit for the study of Porous Beds in Venturi Tubes (Darcy's Equation)

➤Demonstration

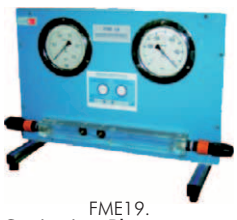


FME09.
Flow Visualization in Channels

FME20.
Laminar Flow Demonstration

FME30.
Vortex Flow Meter

FME15.
Water Hammer



FME19.
Cavitation Phenomenon Demonstration

FME25.
Flow Channel, 1 m. lenght

FME18.
Flow Meter Demonstration

FME17.
Orifice and Free Jet Flow

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=fluidmechanicsbasic&lang=en

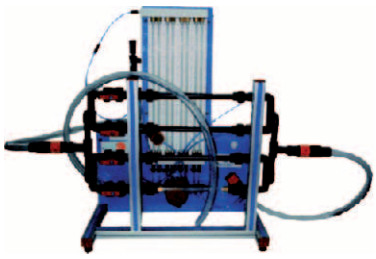
LIFLUBA. **Basic Fluids Mechanics Integrated Laboratory:**

Modules

➤**Pipes**

FME05.
Energy Losses in Bends

FME07.
Energy Losses in Pipes

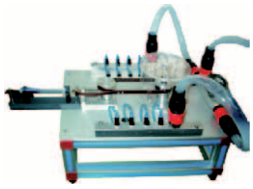


FME23.
Basic Pipe Network Unit

➤**Hidraulic Machines**

FME12.
Series/Parallel Pumps

FME13.
Centrifugal Pumps Characteristics



FME27.
Axial Flow Turbine

FME16.
Pelton Turbine

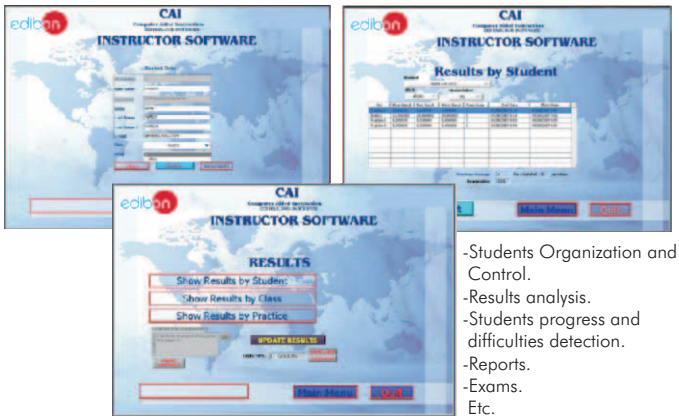
FME28.
Francis Turbine

FME29.
Kaplan Turbine

FME21.
Radial Flow Turbine

CAI. Computer Aided Instruction Software System

Instructor Software



-Students Organization and Control.
-Results analysis.
-Students progress and difficulties detection.
-Reports.
-Exams.
Etc.

Student/Module Software

-Theory.
-Exercises.
-Guided Practices.
-Exams.
-Etc.

Available Student/Module Software Packages:

➤**General concepts**

-FME01/SOF. Impact of a Jet.
-FME02/SOF. Flow over Weirs.
-FME04/SOF. Orifice Discharge.
-FME14/SOF. Free and Forced Vortices.
-FME08/SOF. Hydrostatic Pressure.
-FME10/SOF. Dead Weight Calibrator.
-FME11/SOF. Metacentric Height.
-FME26/SOF. Depression Measurement System (vacuum gauge).
-FME32/SOF. Pitot Static Tube Module. NEW

➤**Laws**

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

➤**Demonstration**

-FME09/SOF. Flow Visualization in Channels.
-FME20/SOF. Laminar Flow Demonstration.
-FME30/SOF. Vortex Flow Meter. NEW
-FME15/SOF. Water Hammer.
-FME19/SOF. Cavitation Phenomenon Demonstration.
-FME25/SOF. Flow Channel, 1m. length.
-FME18/SOF. Flow Meter Demonstration.
-FME17/SOF. Orifice and Free Jet Flow.

➤**Pipes**

-FME05/SOF. Energy Losses in Bends.
-FME07/SOF. Energy Losses in Pipes.
-FME23/SOF. Basic Pipe Network Unit.

➤**Hidraulic Machines**

-FME12/SOF. Series/Parallel Pumps.
-FME13/SOF. Centrifugal Pumps Characteristics.
-FME27/SOF. Axial Flow Turbine.
-FME16/SOF. Pelton Turbine.
-FME28/SOF. Francis Turbine.
-FME29/SOF. Kaplan Turbine.
-FME21/SOF. Radial Flow Turbine.

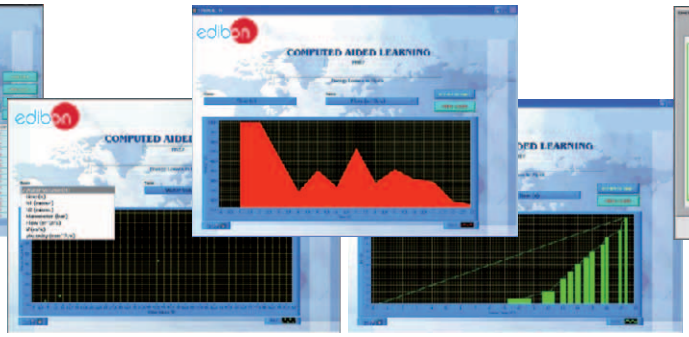
8.1- Fluid Mechanics (Basic)

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=fluidmechanicsbasic&lang=en

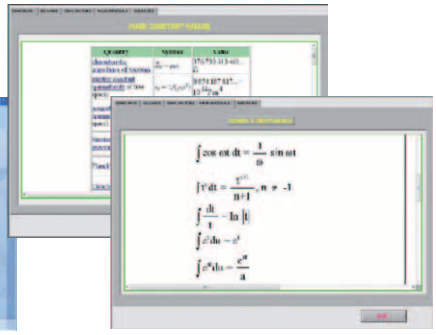
LIFLUBA. **Basic Fluids Mechanics Integrated Laboratory:**

FME/CAL. Computer Aided Learning Software (Results Calculation and Analysis)

Calculations



Plotting options



Information of constant values, unit conversion factors and integral and derivative tables

Available Software Packages:

➤General concepts

-FME01/CAL. Impact of a Jet.
-FME02/CAL. Flow over Weirs.
-FME04/CAL. Orifice Discharge.
-FME14/CAL. Free and Forced Vortices.
-FME08/CAL. Hydrostatic Pressure.
-FME10/CAL. Dead Weight Calibrator.
-FME11/CAL. Metacentric Height.
-FME26/CAL. Depression Measurement System (vacuum gauge).
-FME32/CAL. Pitot Static Tube Module. NEW

➤Laws

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

➤Demonstration

-FME09/CAL. Flow Visualization in Channels.
-FME20/CAL. Laminar Flow Demonstration.
-FME30/CAL. Vortex Flow Meter. NEW
-FME15/CAL. Water Hammer.
-FME19/CAL. Cavitation Phenomenon Demonstration.
-FME25/CAL. Flow Channel, 1m. length.
-FME18/CAL. Flow Meter Demonstration.
-FME17/CAL. Orifice and Free Jet Flow.

➤Pipes

-FME05/CAL. Energy Losses in Bends.
-FME07/CAL. Energy Losses in Pipes.
-FME23/CAL. Basic Pipe Network Unit.

➤Hidraulic Machines

-FME12/CAL. Series/Parallel Pumps.
-FME13/CAL. Centrifugal Pumps Characteristics.
-FME27/CAL. Axial Flow Turbine.
-FME16/CAL. Pelton Turbine.
-FME28/CAL. Francis Turbine.
-FME29/CAL. Kaplan Turbine.
-FME21/CAL. Radial Flow Turbine.

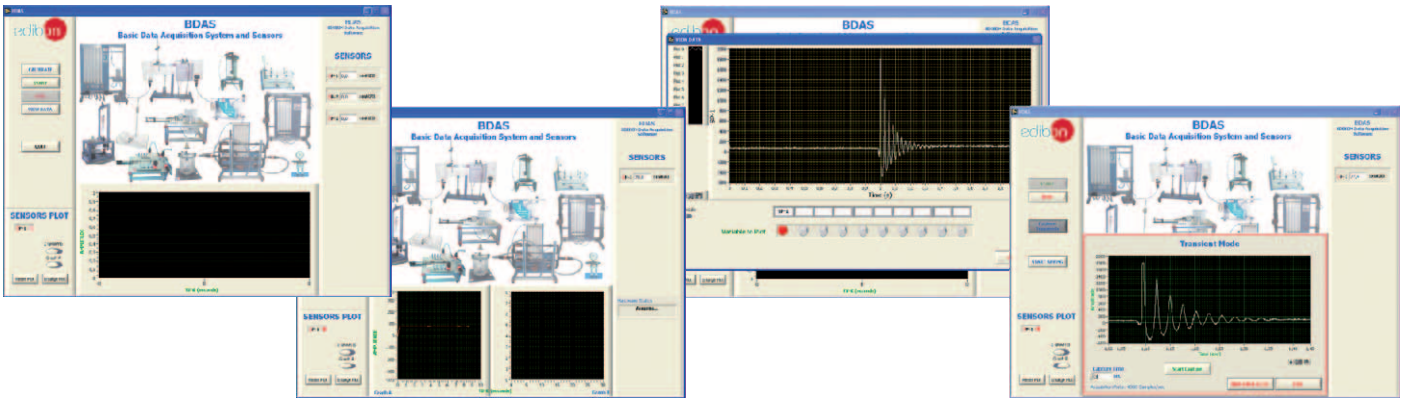
BDAS. Basic Data Acquisition System and Sensors NEW

Data Acquisition Electronic Box

Data Acquisition Software

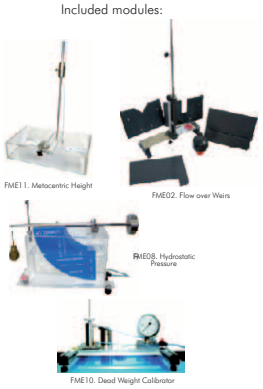
Computer (not included in the supply)

Some screens

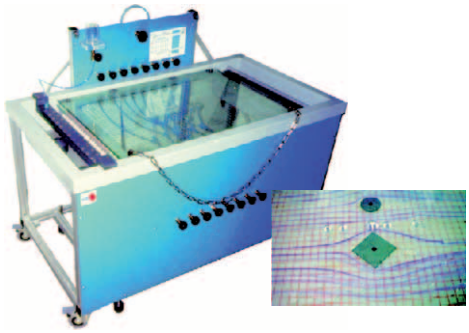


BHI. **Hydrostatic Bench & Fluid Properties**

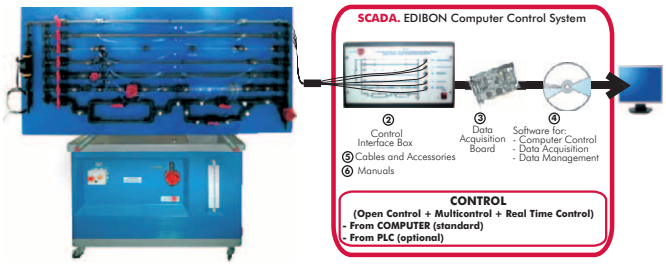
Included modules:



LFA. **Laminar Flow Visualization and Analysis Unit**

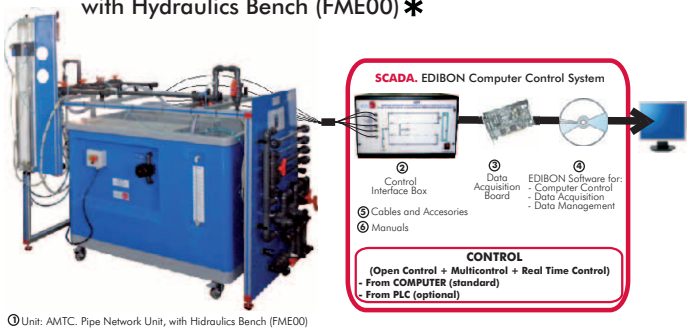


AFTC. Computer Controlled **Fluid Friction in Pipes**, with Hydraulics Bench (FME00) ✱



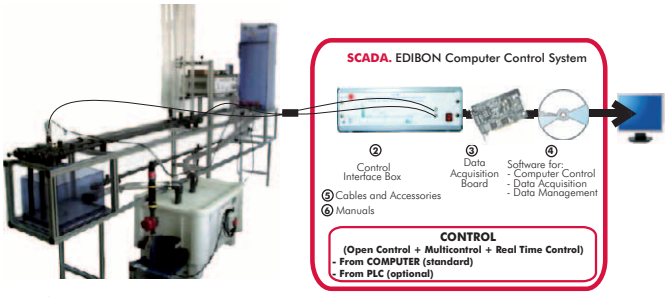
① Unit: AFTC. Fluid Friction in Pipes, with Hydraulics Bench (FME00)

AMTC. Computer Controlled **Pipe Network Unit**, with Hydraulics Bench (FME00) ✱



① Unit: AMTC. Pipe Network Unit, with Hidraulics Bench (FME00)

EGAC. Computer Controlled **Water Hammer Unit**



① Unit: EGAC. Water Hammer Unit

HMM. **Manometers & Multimanometers**

HVB. **Falling Sphere Viscosimeter and Drag Coefficient**

UVF. **Hydrogen Bubble Flow Visualisation Unit**

FMDU. **Flow Meters Demonstration Unit**

Other available Units: NEW

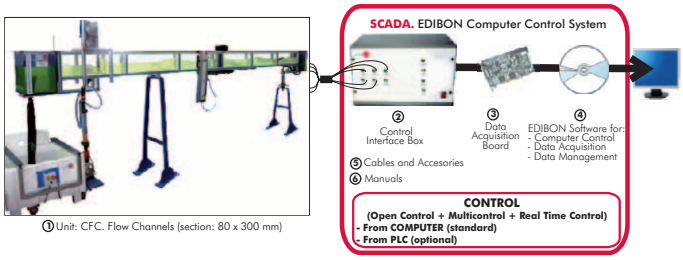
- HCMP. **Precision Pressure Gauge Calibrator**
- HECA. **Air Flow Studies Unit**
- HSMAP. **Air Pressure Maintained Water System Trainer**

✱ Non computer controlled version available too.

8.3- Fluid Mechanics (Flow Channels)

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=fluidmechanicsflowchannels&lang=en

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



① Unit: CFC. Flow Channels (section: 80 x 300 mm)

Available lengths: 2.5 / 5 / 7.5 and 10 m.

CFGC. Computer Controlled **Flow Channels (section: 300 x 450 mm)** ✱

① Unit: CFGC. Flow Channels (section: 300 x 450 mm)

Available lengths: 5 / 7.5 / 10 / 12.5 and 15 m.

On request: Any other dimensions.

CAS. **Sediment Transport Demonstration Channel**

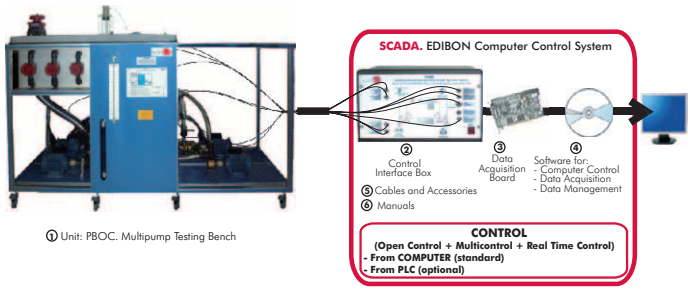
Other available Units: NEW

- HVFLM. **Mobile Bed and Flow Visualisation Unit**
- FME25. **Flow Channel, 1m. length** (see page 47)

8.4- Hydraulic Machines (Pumps)

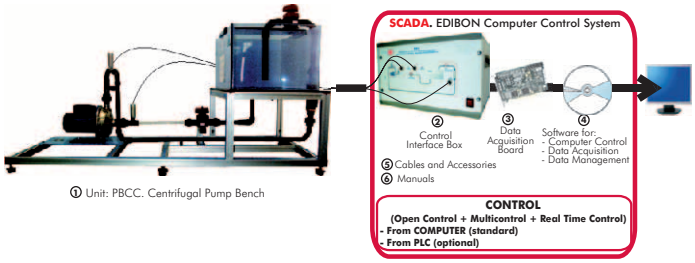
www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=hydraulicmachinespumps&lang=en

PBOC. Computer Controlled **Multipump Testing Bench**



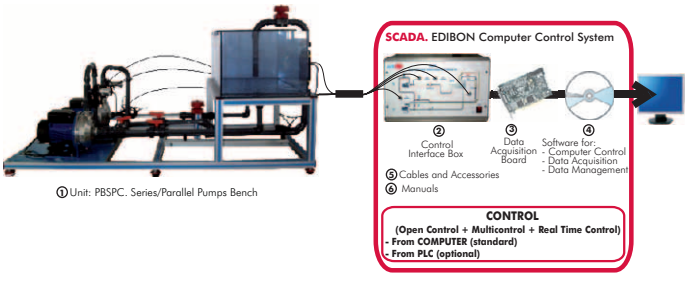
① Unit: PBOC. Multipump Testing Bench

PBCC. Computer Controlled **Centrifugal Pump Bench** ✱



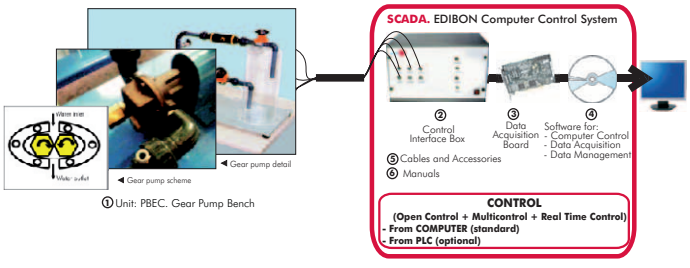
① Unit: PBCC. Centrifugal Pump Bench

PBSPC. Computer Controlled **Series/Parallel Pumps Bench** ✱



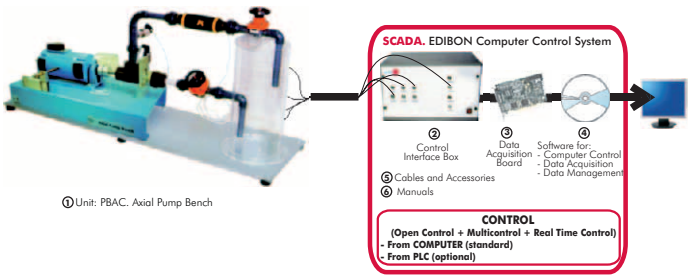
① Unit: PBSPC. Series/Parallel Pumps Bench

PBEC. Computer Controlled **Gear Pump Bench**



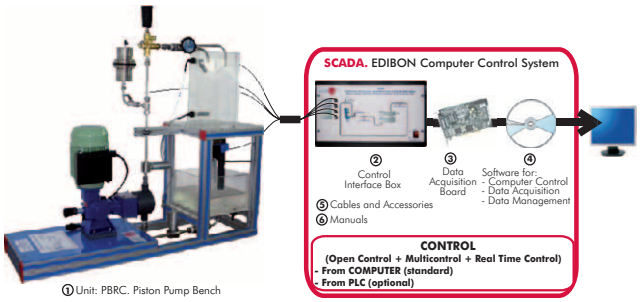
① Unit: PBEC. Gear Pump Bench

PBAC. Computer Controlled **Axial Pump Bench**



① Unit: PBAC. Axial Pump Bench

PBRC. Computer Controlled **Piston Pump Bench**



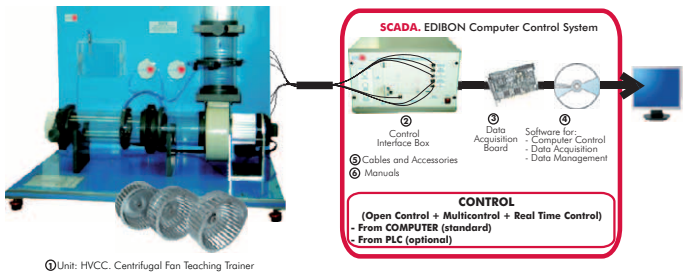
① Unit: PBRC. Piston Pump Bench

✱ Non computer controlled version available too.

8.5- Hydraulic Machines (Fans and Compressors)

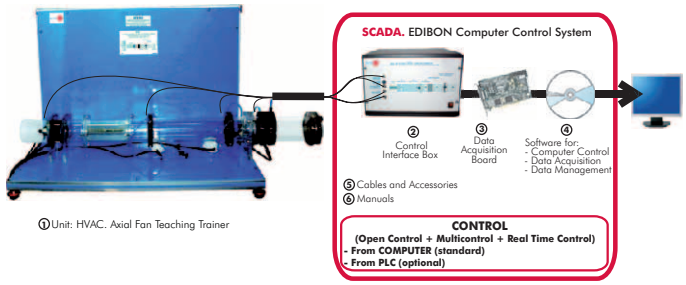
www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=hydraulicmachinesfans&lang=en

HVCC. Computer Controlled **Centrifugal Fan Teaching Trainer** ✱



① Unit: HVCC. Centrifugal Fan Teaching Trainer

HVAC. Computer Controlled **Axial Fan Teaching Trainer** ✱



① Unit: HVAC. Axial Fan Teaching Trainer

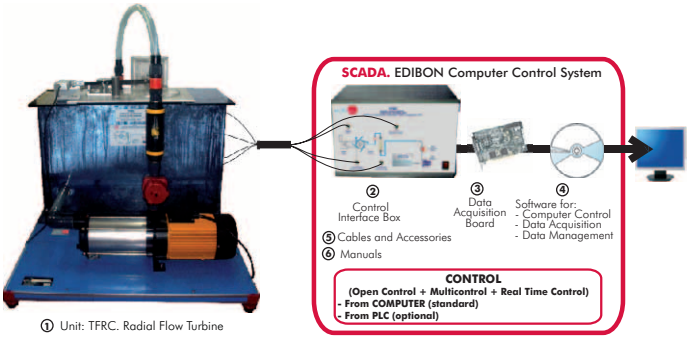
Other available Unit: NEW

- HCCC. Computer Controlled **Centrifugal Compressor Demonstration Unit**

8.6- Hydraulic Machines (Turbines)

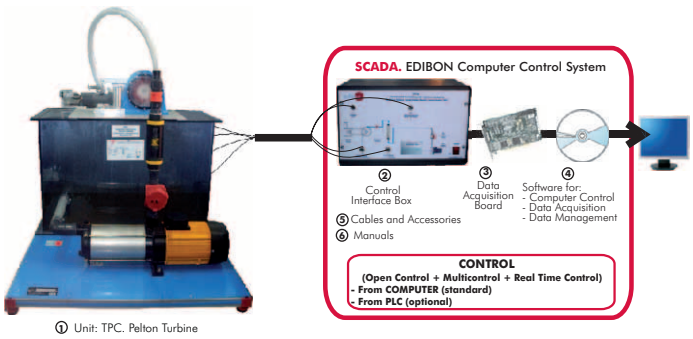
www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=hydraulicmachinesturbines&lang=en

TFRC. Computer Controlled **Radial Flow Turbine**



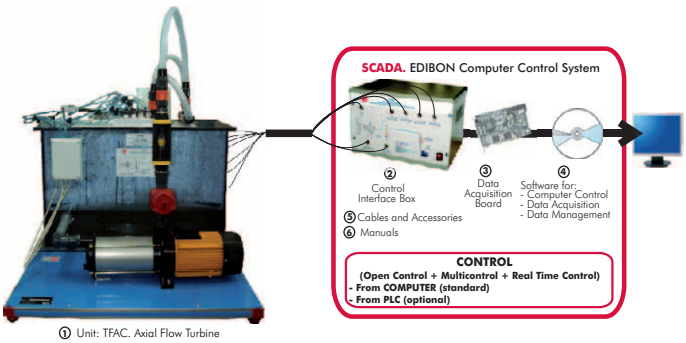
① Unit: TFRC. Radial Flow Turbine

TPC. Computer Controlled **Pelton Turbine**



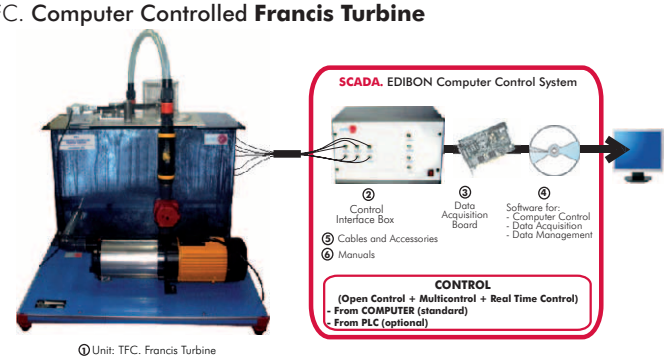
① Unit: TPC. Pelton Turbine

TFAC. Computer Controlled **Axial Flow Turbine**



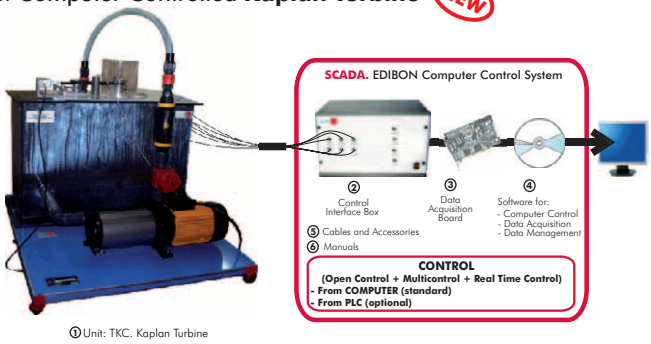
① Unit: TFAC. Axial Flow Turbine

TFC. Computer Controlled **Francis Turbine**



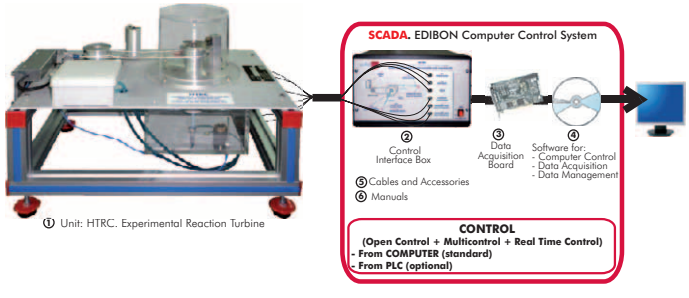
① Unit: TFC. Francis Turbine

TKC. Computer Controlled **Kaplan Turbine** NEW



① Unit: TKC. Kaplan Turbine

HTRC. Computer Controlled **Experimental Reaction Turbine**



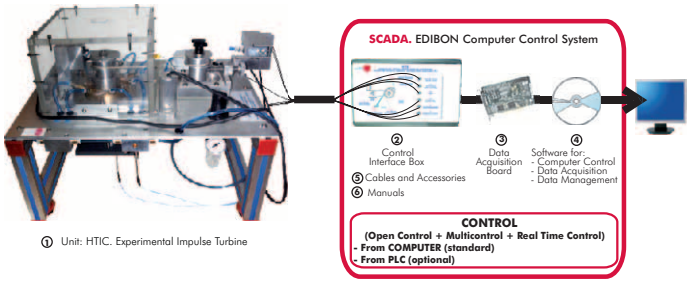
① Unit: HTRC. Experimental Reaction Turbine

✱ Non computer controlled version available too.

8.6- Hydraulic Machines (Turbines)

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=hydraulicmachinesturbines&lang=en

HTIC. Computer Controlled **Experimental Impulse Turbine**



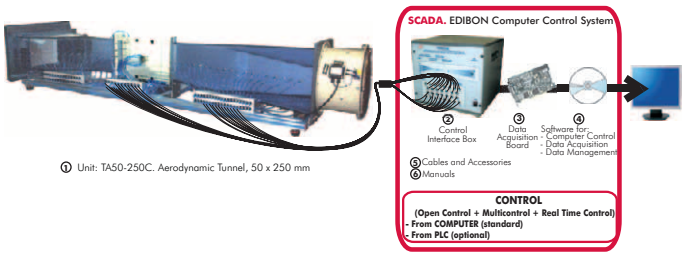
① Unit: HTIC. Experimental Impulse Turbine

See other **Turbines** in section "**9.14. Thermal Turbines**" (page 65)

8.7- Aerodynamics (Basic)

www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=aerodynamicsbasic&lang=en

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

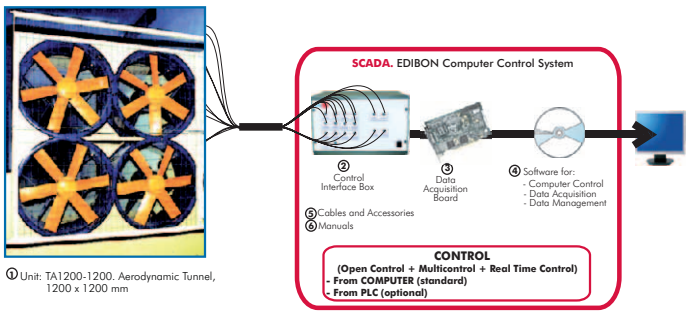


① Unit: TA50-250C. Aerodynamic Tunnel, 50 x 250 mm

8.8- Aerodynamics (General)

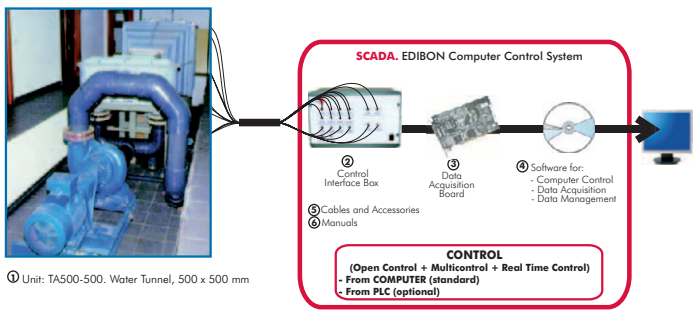
www.edibon.com/products/index.php?area=fluidmechanicsaerodynamics&subarea=aerodynamicsgeneral&lang=en

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



① Unit: TA1200-1200. Aerodynamic Tunnel, 1200 x 1200 mm

TA500/500. Computer Controlled **Water Tunnel, 500 x 500 mm**

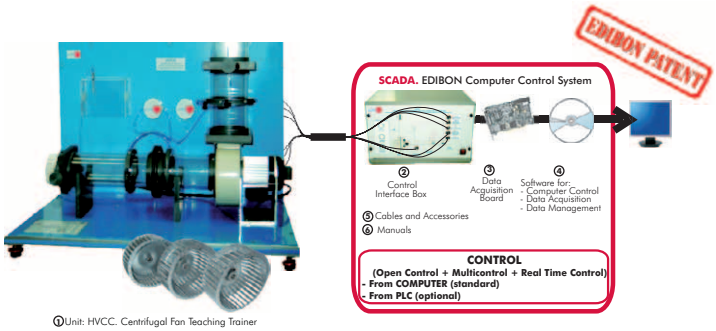


① Unit: TA500-500. Water Tunnel, 500 x 500 mm

* Non computer controlled version available too.

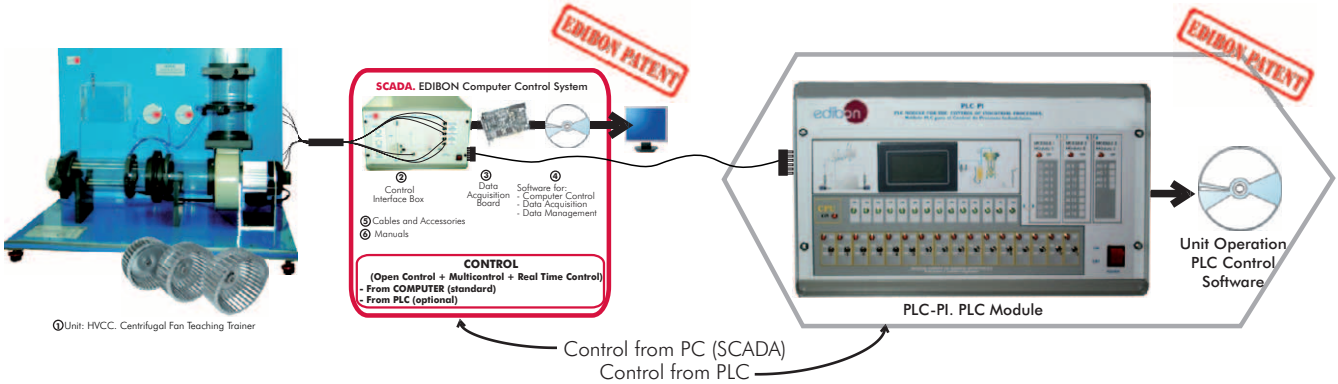
Fluid Mechanics & Aerodynamics control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

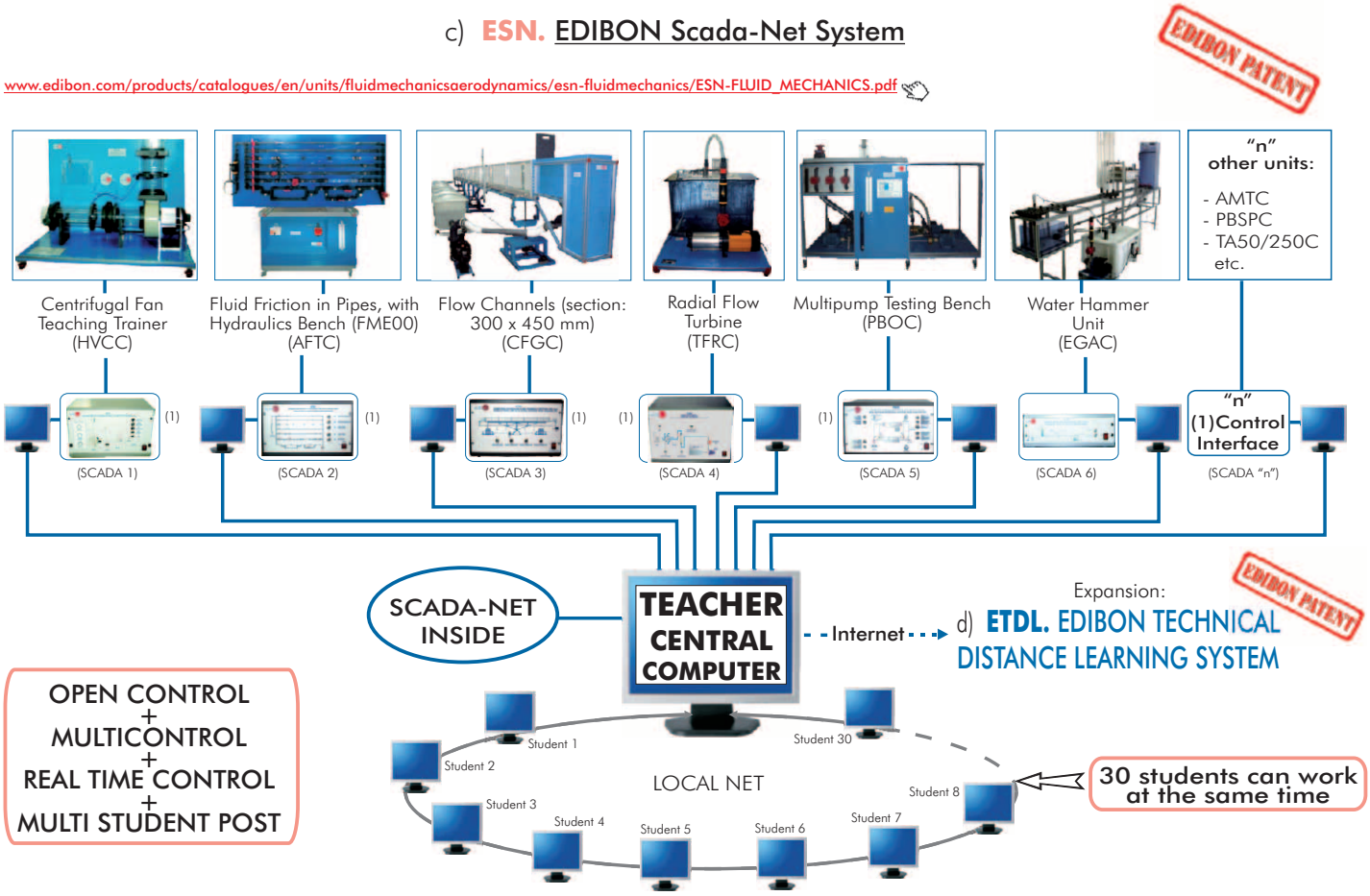


Units that can use Control from PC and PLC in this area:

AFTC, AMTC, EGAC, CFC, CFGC, PBOC, PBCC, PBSPC, PBEC, PBAC, PBRC, HVCC, HVAC, HCCC, TFRC, TPC, TFAC, TFC, TKC, HTRC, HTIC, TA50/250C, TA1200/1200, TA500/500.

c) ESN. EDIBON Scada-Net System

www.edibon.com/products/catalogues/en/units/fluidmechanicsaerodynamics/esn-fluidmechanics/ESN-FLUID_MECHANICS.pdf

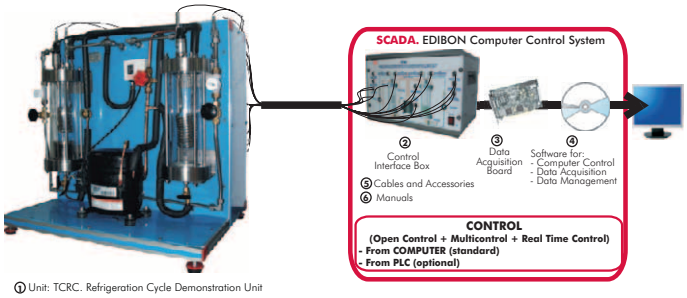


Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=refrigeration&lang=en

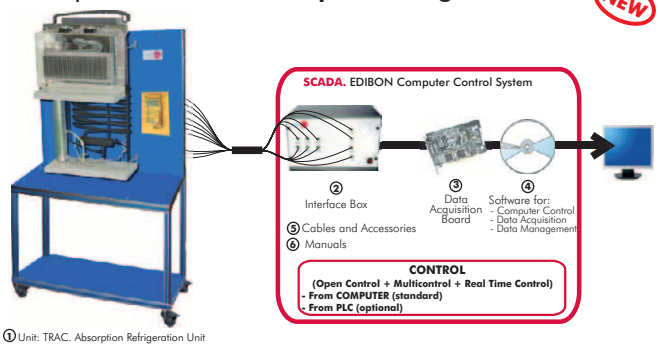
➤Basic Refrigeration

TCRC. Computer Controlled **Refrigeration Cycle Demonstration Unit** ✱



① Unit: TCRC. Refrigeration Cycle Demonstration Unit

TRAC. Computer Controlled **Absorption Refrigeration Unit** NEW



① Unit: TRAC. Absorption Refrigeration Unit

Other available Units: NEW

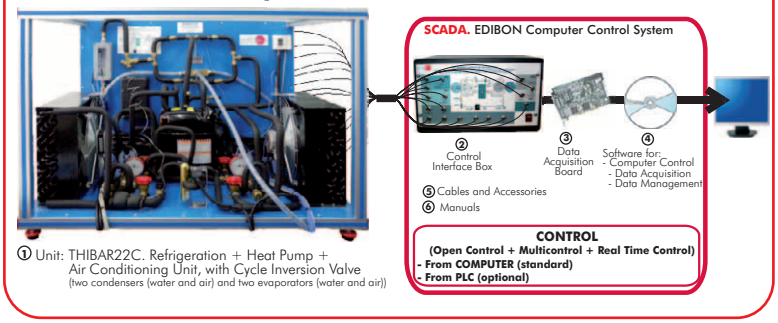
-TRCVC. Computer Controlled **Vapour-Compresion Refrigeration Unit**

-TRD2PC. **Two Doors Domestic Refrigeration System Trainer**

➤General Refrigeration

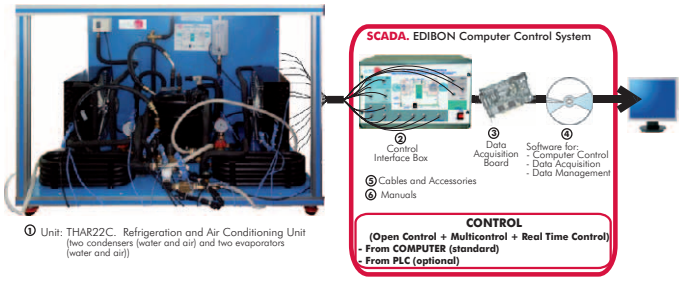
THIBAR22C. Computer Controlled **Refrigeration + Heat Pump + Air Conditioning Unit, with Cycle Inversion Valve** (two condensers and two evaporators) ✱

COMPLETE



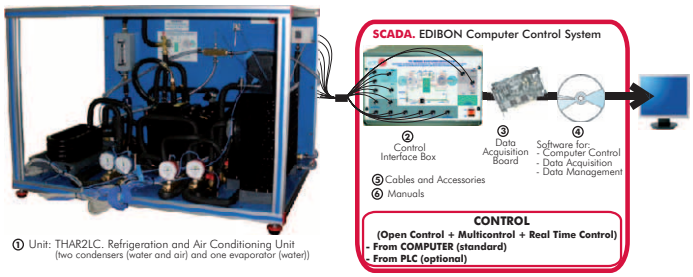
① Unit: THIBAR22C. Refrigeration + Heat Pump + Air Conditioning Unit, with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air))

THAR22C. Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers and two evaporators) ✱



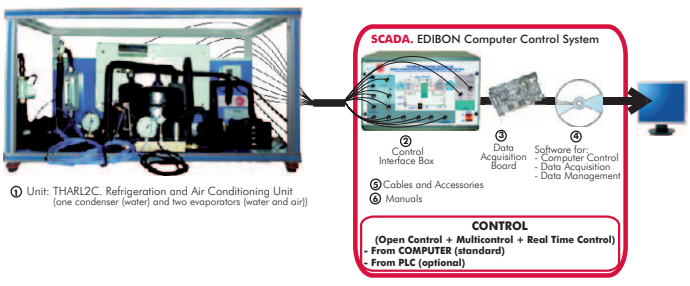
① Unit: THAR22C. Refrigeration and Air Conditioning Unit (two condensers (water and air) and two evaporators (water and air))

THAR2LC. Computer Controlled **Refrigeration and Air Conditioning Unit** (two condensers and water evaporator) ✱



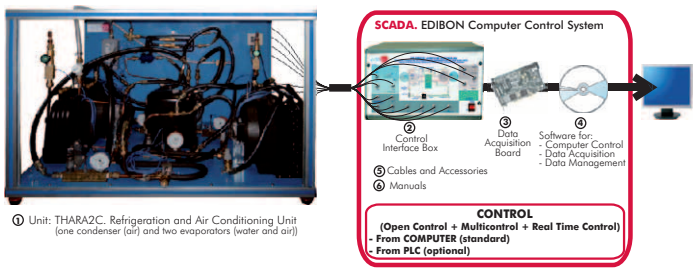
① Unit: THAR2LC. Refrigeration and Air Conditioning Unit (two condensers (water and air) and one evaporator (water))

THARL2C. Computer Controlled **Refrigeration and Air Conditioning Unit** (water condenser and two evaporators) ✱



① Unit: THARL2C. Refrigeration and Air Conditioning Unit (one condenser (water) and two evaporators (water and air))

THARA2C. Computer Controlled **Refrigeration and Air Conditioning Unit** (air condenser and two evaporators) ✱

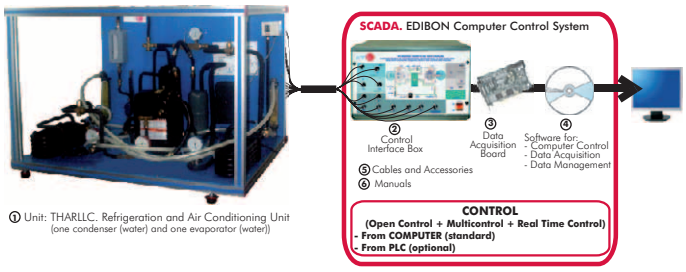


① Unit: THARA2C. Refrigeration and Air Conditioning Unit (one condenser (air) and two evaporators (water and air))

✱ Non computer controlled version available too.

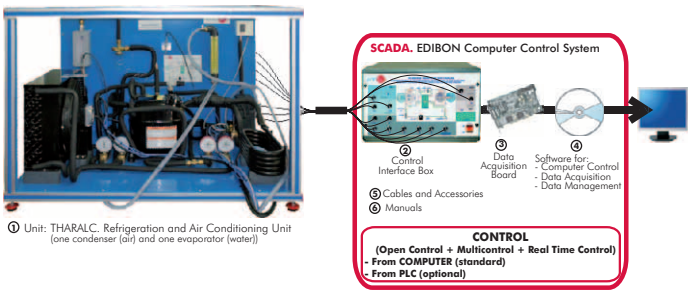
➤General Refrigeration

THARLLC. Computer Controlled **Refrigeration and Air Conditioning Unit** (water condenser and water evaporator) ✱



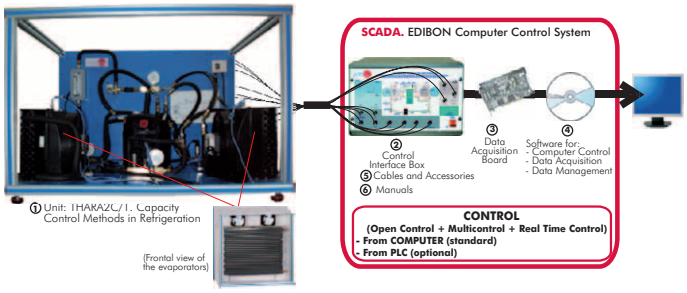
① Unit: THARLLC. Refrigeration and Air Conditioning Unit (one condenser (water) and one evaporator (water))

THARALC. Computer Controlled **Refrigeration and Air Conditioning Unit** (air condenser and water evaporator) ✱



① Unit: THARALC. Refrigeration and Air Conditioning Unit (one condenser (air) and one evaporator (water))

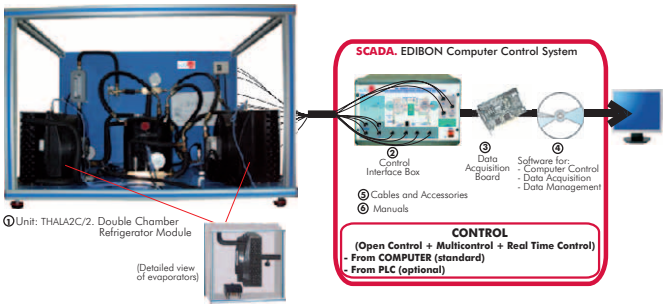
THARA2C/1. Computer Controlled **Capacity Control Methods in Refrigeration**



① Unit: THARA2C/1. Capacity Control Methods in Refrigeration

(Frontal view of the evaporators)

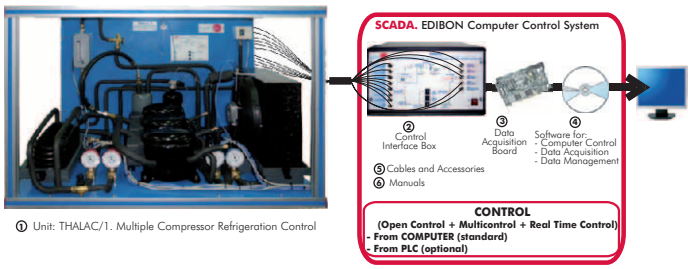
THARA2C/2. Computer Controlled **Double Chamber Refrigerator Module**



① Unit: THALA2C/2. Double Chamber Refrigerator Module

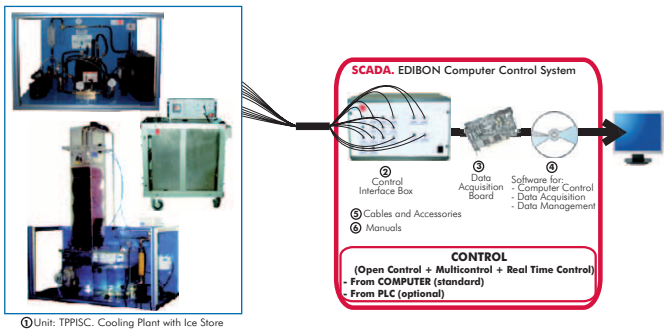
(Detailed view of evaporators)

THALAC/1. Computer Controlled **Multiple Compressor Refrigeration Control**



① Unit: THALAC/1. Multiple Compressor Refrigeration Control

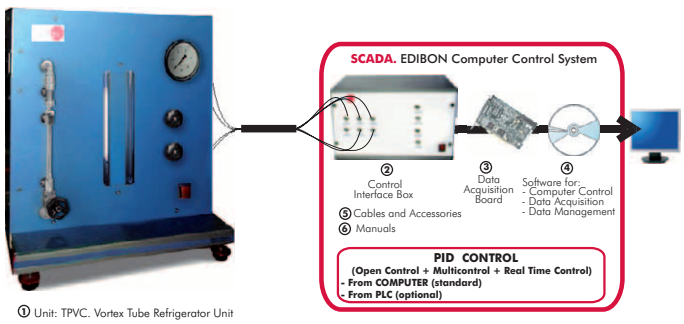
TCPISC. Computer Controlled **Cooling Plant with Ice Store** NEW



① Unit: TPPISC. Cooling Plant with Ice Store

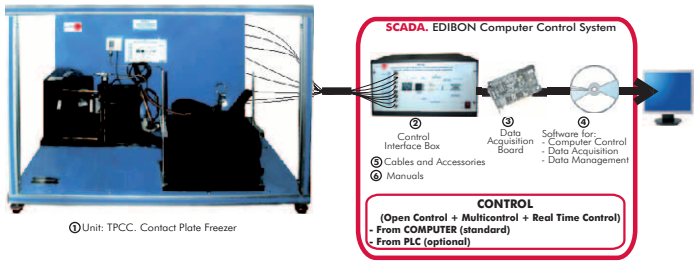
➤Special Refrigeration

TPVC. Computer Controlled **Vortex Tube Refrigerator Unit**



① Unit: TPVC. Vortex Tube Refrigerator Unit

TPCC. Computer Controlled **Contact Plate Freezer**



① Unit: TPCC. Contact Plate Freezer

Other available Unit:

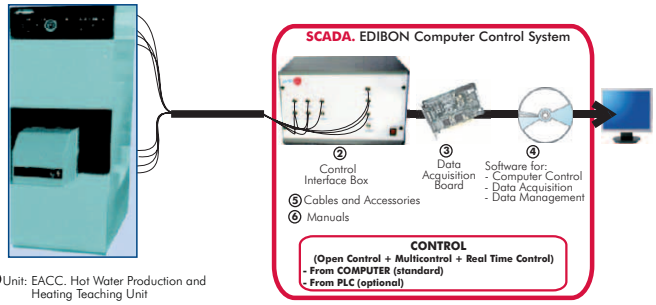
- TEVC. **Computer Controlled Ventilation Trainer** (see page 46)

✱ Non computer controlled version available too.

9.3- Heating

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heating&lang=en

EACC. Computer Controlled **Hot Water Production and Heating Teaching Unit**



① Unit: EACC. Hot Water Production and Heating Teaching Unit

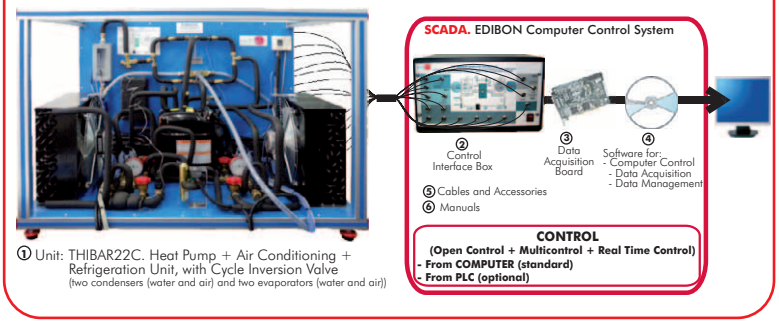
9.4- Heat Pumps

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heatpumps&lang=en

➤General Heat Pumps

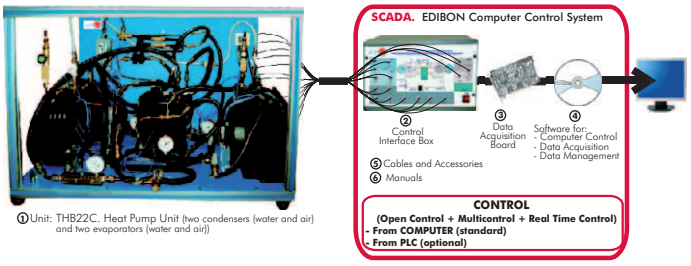
THIBAR22C. Computer Controlled **Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve** (two condensers and two evaporators) ✱

COMPLETE



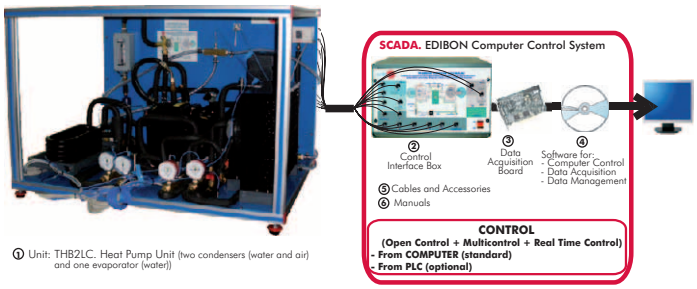
① Unit: THIBAR22C. Heat Pump + Air Conditioning + Refrigeration Unit, with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air))

THB22C. Computer Controlled **Heat Pump Unit** (two condensers and two evaporators) ✱



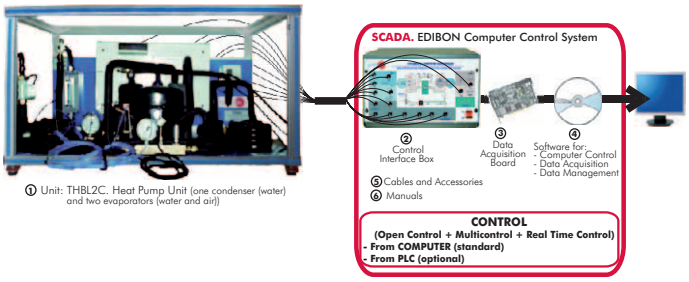
① Unit: THB22C. Heat Pump Unit (two condensers (water and air) and two evaporators (water and air))

THB2LC. Computer Controlled **Heat Pump Unit** (two condensers and water evaporator) ✱



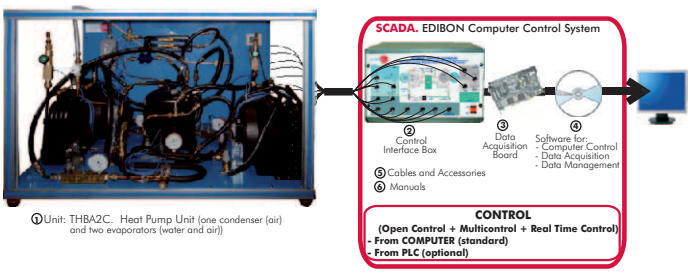
① Unit: THB2LC. Heat Pump Unit (two condensers (water and air) and one evaporator (water))

THBL2C. Computer Controlled **Heat Pump Unit** (water condenser and two evaporators) ✱



① Unit: THBL2C. Heat Pump Unit (one condenser (water) and two evaporators (water and air))

THBA2C. Computer Controlled **Heat Pump Unit** (air condenser and two evaporators) ✱



① Unit: THBA2C. Heat Pump Unit (one condenser (air) and two evaporators (water and air))

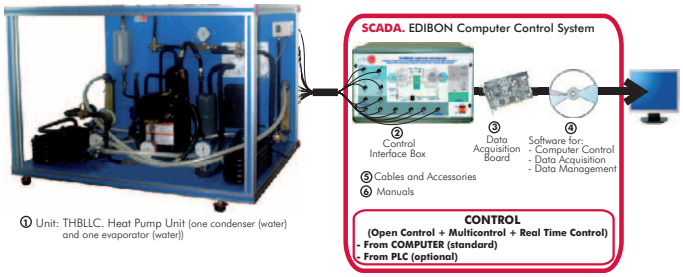
✱ Non computer controlled version available too.

9.4- Heat Pumps

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heatpumps&lang=en

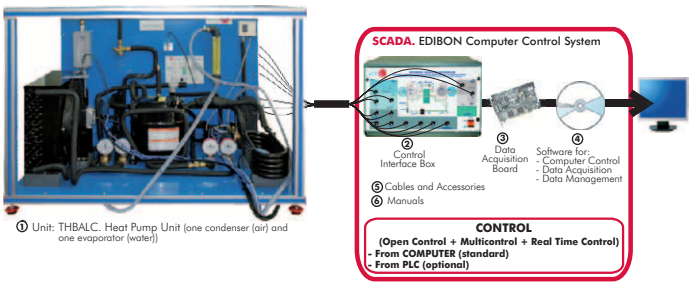
➤General Heat Pumps

THBLLC. Computer Controlled **Heat Pump Unit** (water condenser and water evaporator) ✱



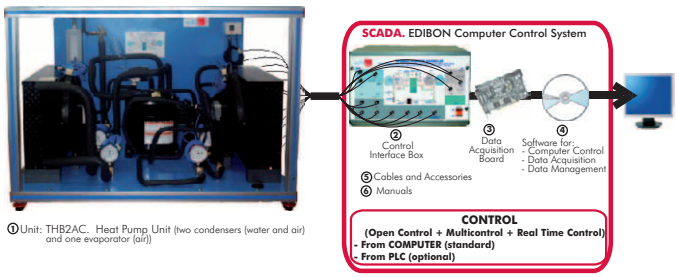
① Unit: THBLLC. Heat Pump Unit (one condenser (water) and one evaporator (water))

THBALC. Computer Controlled **Heat Pump Unit** (air condenser and water evaporator) ✱



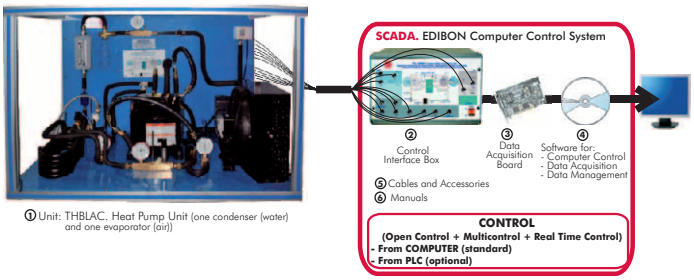
① Unit: THBALC. Heat Pump Unit (one condenser (air) and one evaporator (water))

THB2AC. Computer Controlled **Heat Pump Unit** (two condensers and air evaporator) ✱



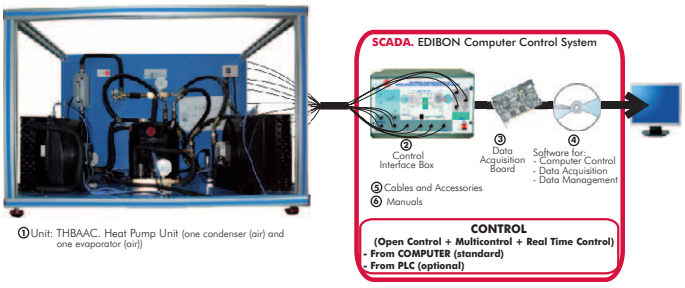
① Unit: THB2AC. Heat Pump Unit (two condensers (water and air) and one evaporator (air))

THBLAC. Computer Controlled **Heat Pump Unit** (water condenser and air evaporator) ✱



① Unit: THBLAC. Heat Pump Unit (one condenser (water) and one evaporator (air))

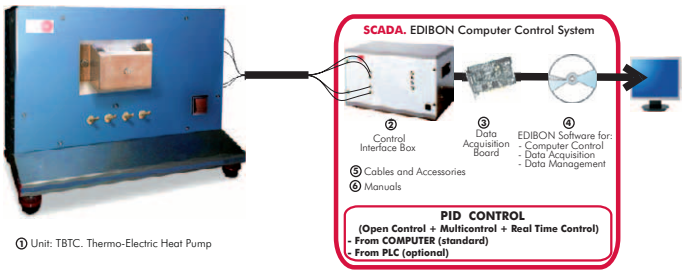
THBAAC. Computer Controlled **Heat Pump Unit** (air condenser and air evaporator) ✱



① Unit: THBAAC. Heat Pump Unit (one condenser (air) and one evaporator (air))

➤Special Heat Pumps

TBTC. Computer Controlled **Thermo-Electric Heat Pump**



① Unit: TBTC. Thermo-Electric Heat Pump

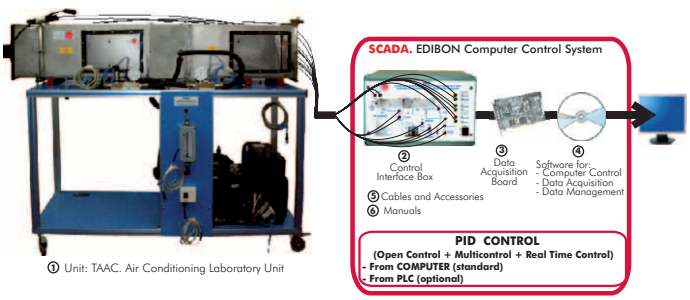
TBCF. **Bomb Calorimeter Set for Testing Calorific Value of Fuels**

9.5- Air Conditioning

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=airconditioning&lang=en

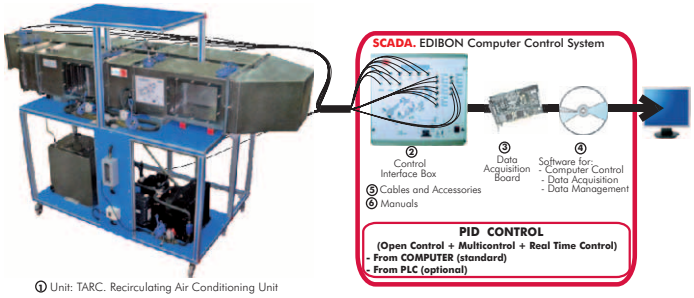
➤General Air Conditioning

TAAC. Computer Controlled **Air Conditioning Laboratory Unit** ✱



① Unit: TAAC. Air Conditioning Laboratory Unit

TARC. Computer Controlled **Recirculating Air Conditioning Unit** ✱



① Unit: TARC. Recirculating Air Conditioning Unit

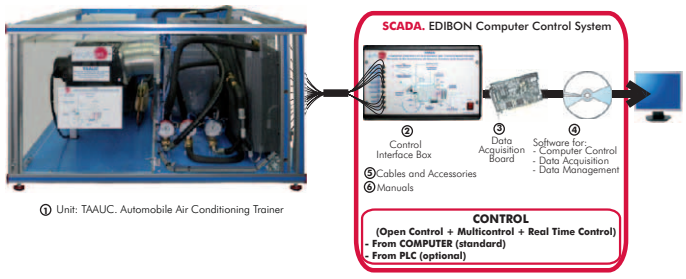
✱ Non computer controlled version available too.

9.5- Air Conditioning

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=airconditioning&lang=en

➤General Air Conditioning

TAAUC. Computer Controlled **Automobile Air Conditioning Trainer**✱

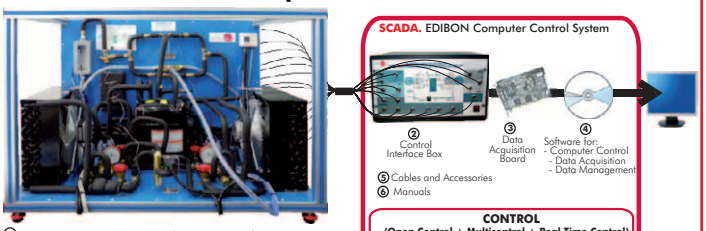


① Unit: TAAUC. Automobile Air Conditioning Trainer

➤Applied Air Conditioning

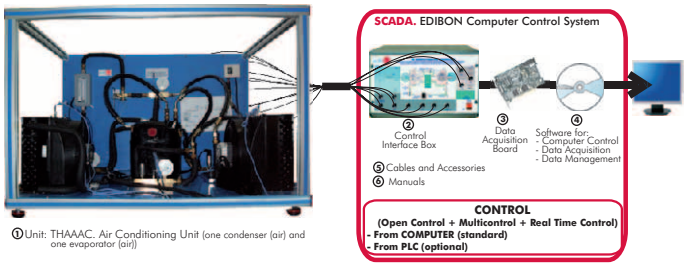
THIBAR22C. Computer Controlled **Air Conditioning + Refrigeration + Heat Pump Unit, with Cycle Inversion Valve** (two condensers and two Evaporators) ✱

COMPLETE



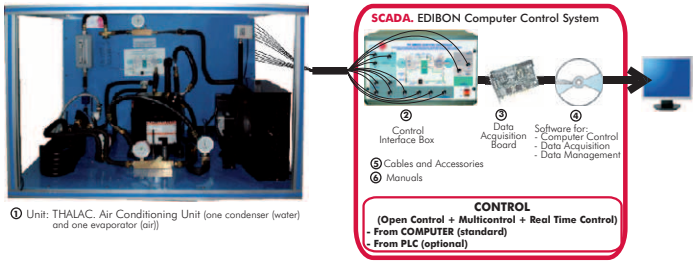
① Unit: THIBAR22C. Air Conditioning + Refrigeration + Heat Pump Unit, with Cycle Inversion Valve (two condensers (water and air) and two evaporators (water and air))

THAAAC. Computer Controlled **Air Conditioning Unit** (air condenser and air evaporator)✱



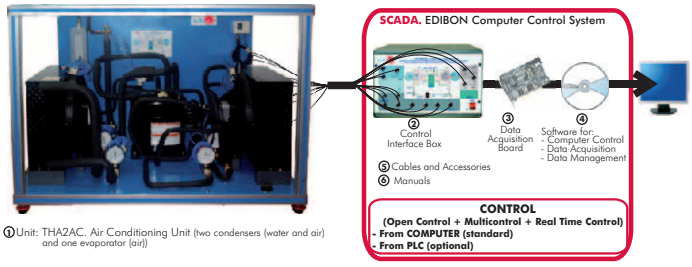
① Unit: THAAAC. Air Conditioning Unit (one condenser (air) and one evaporator (air))

THALAC. Computer Controlled **Air Conditioning Unit** (water condenser and air evaporator)✱



① Unit: THALAC. Air Conditioning Unit (one condenser (water) and one evaporator (air))

THA2AC. Computer Controlled **Air Conditioning Unit** (two condensers and air evaporator)✱



① Unit: THA2AC. Air Conditioning Unit (two condensers (water and air) and one evaporator (air))

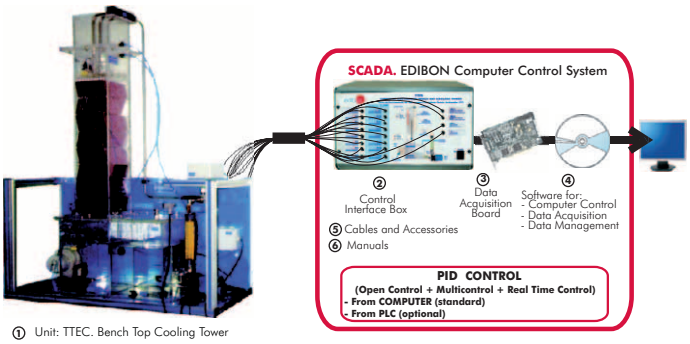
Other available Units:

Also see "**THAR "Series** in section "**9.1. Refrigeration**" (pages 55 and 56)

9.6- Cooling Towers

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=coolingtowers&lang=en

TTEC. Computer Controlled **Bench Top Cooling Tower** ✱



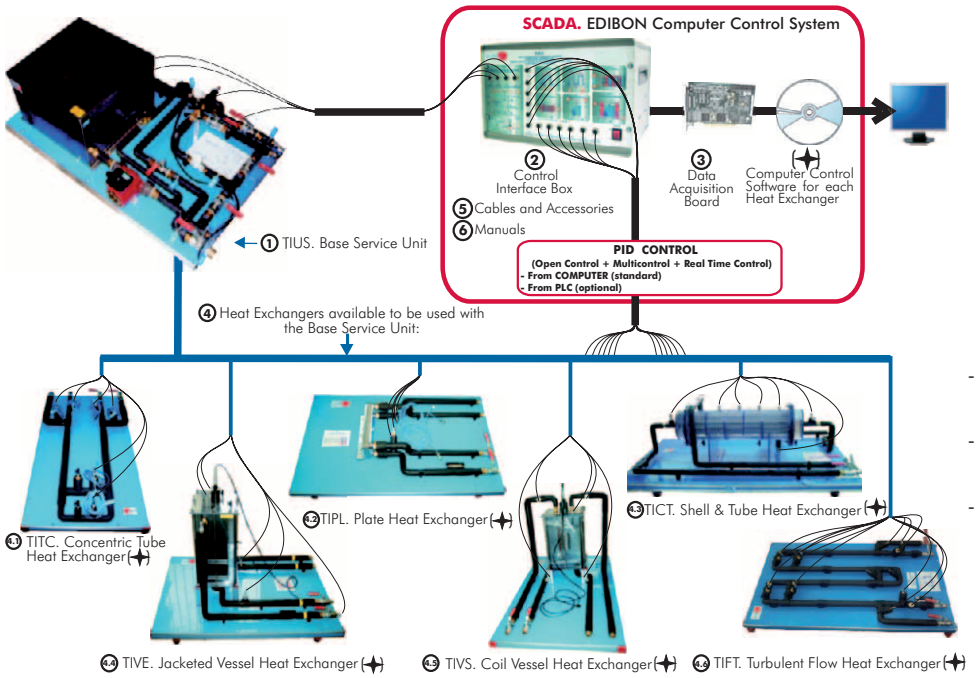
① Unit: TTEC. Bench Top Cooling Tower

✱ Non computer controlled version available too.

9.7- Heat Exchange

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heatexchange&lang=en

TICC. Computer Controlled **Heat Exchangers Training System:** ✱



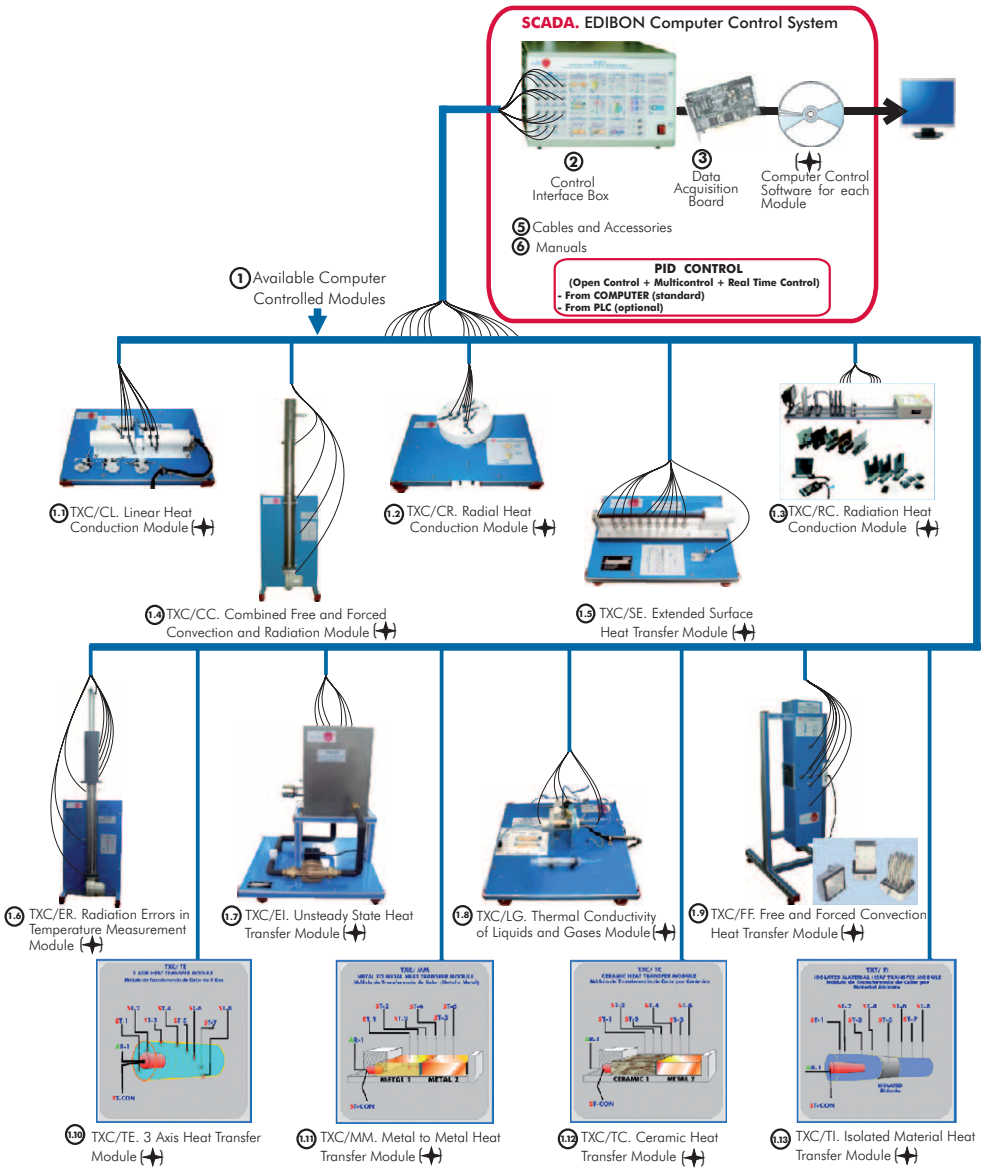
Other available Heat Exchangers NEW
to be used with the Base Service Unit (TIUS):

- TITCA. **Extended Tubular Heat Exchanger**
- TIPLA. **Extended Reconfigurable Plate Heat Exchanger**
- TICF. **Cross Flow Heat Exchanger**

9.8- Heat Transfer (Basic)

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heattransferbasic&lang=en

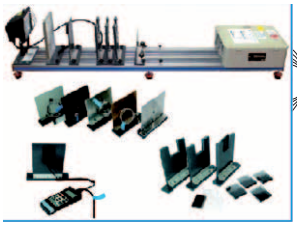
TSTCC. Computer Controlled **Heat Transfer Series:** ✱

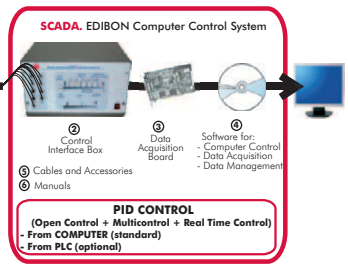


✱ Non computer controlled version available too.

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heattransfergeneral&lang=en

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

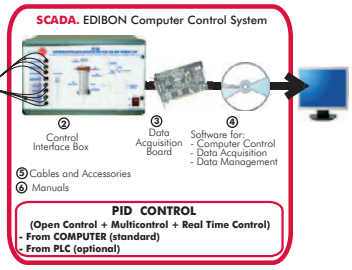




① Unit: TRTC. Thermal Radiation and Light Radiation Unit

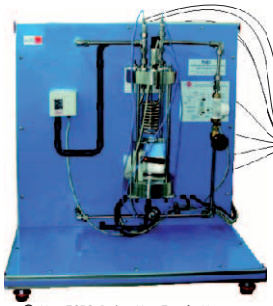
TMT. **Temperature Measurement Unit**

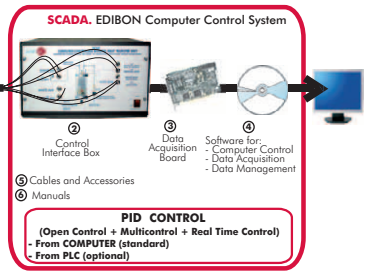
TTLFC. Computer Controlled **Fluidisation and Fluid Bed Heat Transfer Unit** ✱



① Unit: TTLFC. Fluidisation and Fluid Bed Heat Transfer Unit

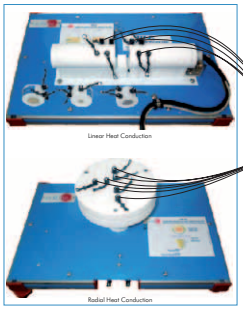
TCEC. Computer Controlled **Boiling Heat Transfer Unit** ✱

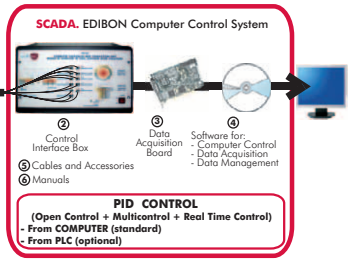




① Unit: TCEC. Boiling Heat Transfer Unit

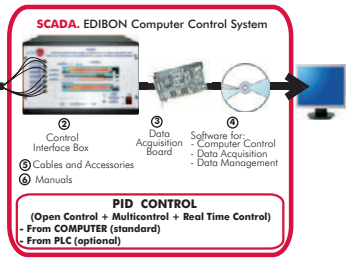
TCCC. Computer Controlled **Heat Conduction Unit**





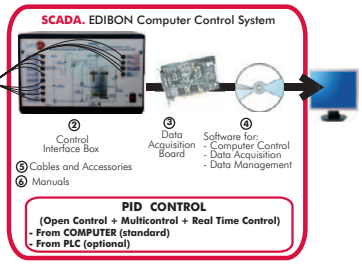
① Unit: TCCC. Heat Conduction Unit

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



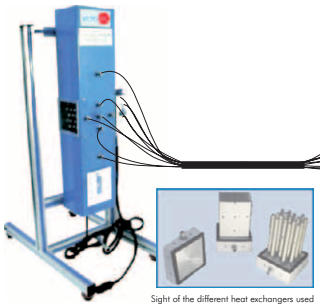
① Unit: TCLGC. Thermal Conductivity of Liquids and Gases Unit

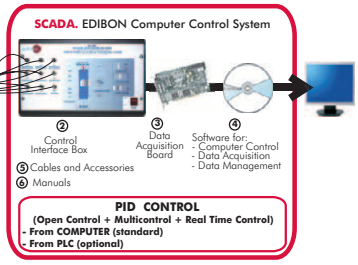
TCPGC. Computer Controlled **Film and Dropwise Condensation Unit** ✱



① Unit: TCPGC. Film and Dropwise Condesation Unit

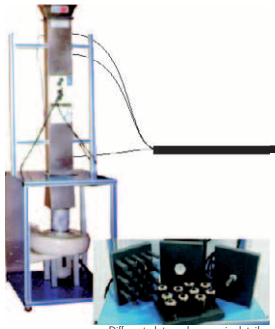
TCLFC. Computer Controlled **Free and Forced Convection Heat Transfer Unit**

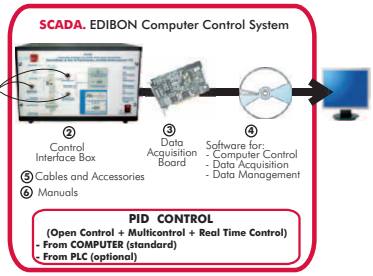




① Unit: TCLFC. Free and Forced Convection Heat Transfer Unit

TIFCC. Computer Controlled **Cross Flow Heat Exchanger** ✱





① Unit: TIFCC. Cross Flow Heat Exchanger

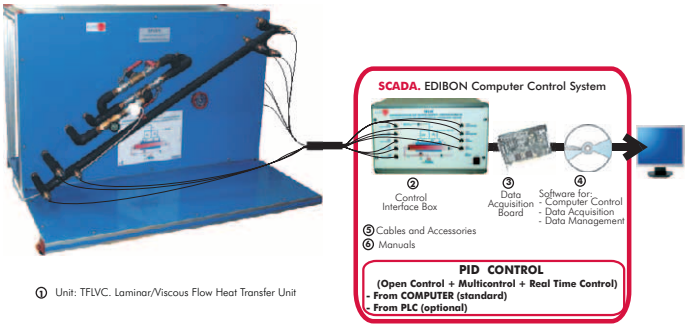
Other available Units: NEW

- TMCP. **Pressure Measurement and Calibration Unit**
- TCMC. Computer Controlled **Thermal Conductivity of Building and Insulating Materials Unit** (see page 46)

✱ Non computer controlled version available too.

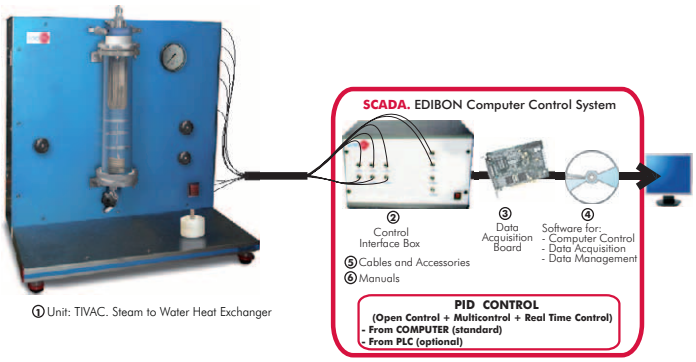
www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=heattransferspecial&lang=en

TFLVC. Computer Controlled **Laminar/Viscous Flow Heat Transfer Unit** ✱



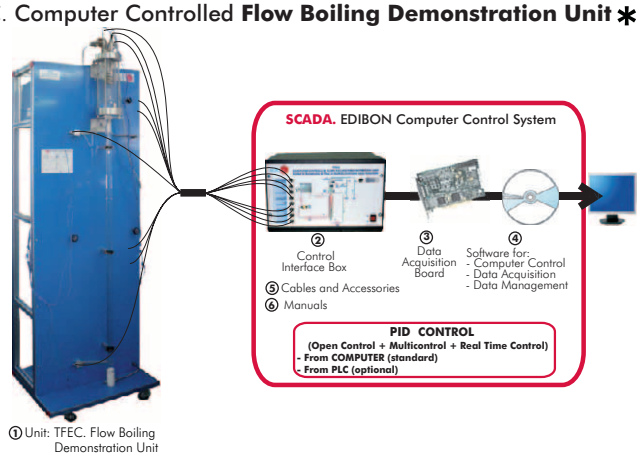
① Unit: TFLVC. Laminar/Viscous Flow Heat Transfer Unit

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



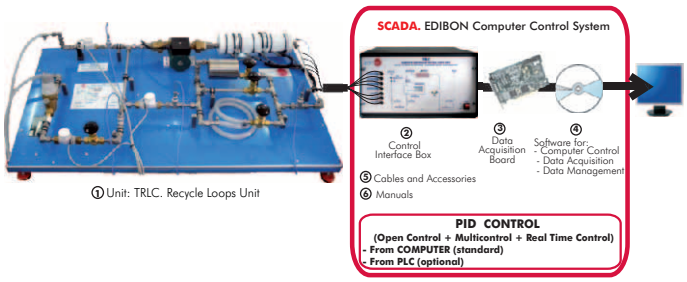
① Unit: TIVAC. Steam to Water Heat Exchanger

TFEC. Computer Controlled **Flow Boiling Demonstration Unit** ✱



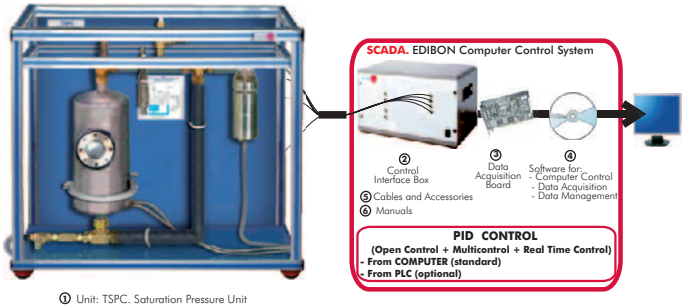
① Unit: TFEC. Flow Boiling Demonstration Unit

TRLC. Computer Controlled **Recycle Loops Unit** ✱



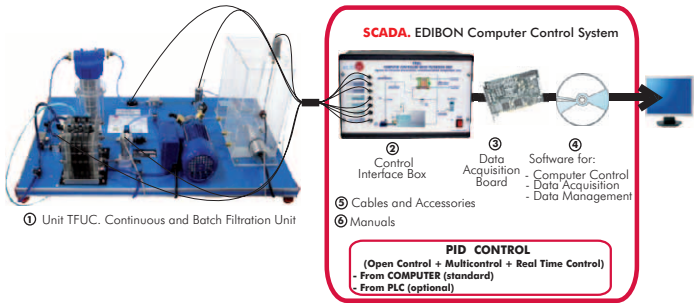
① Unit: TRLC. Recycle Loops Unit

TSPC. Computer Controlled **Saturation Pressure Unit**



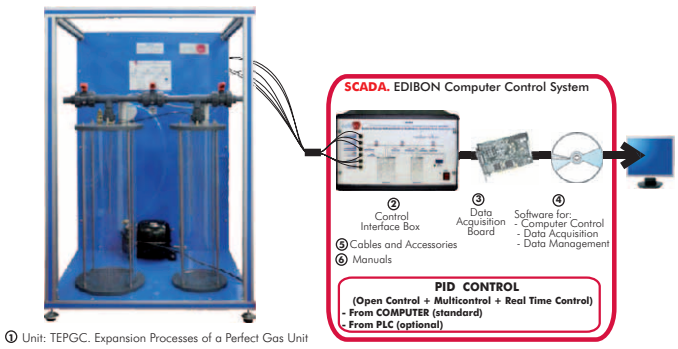
① Unit: TSPC. Saturation Pressure Unit

TFUC. Computer Controlled **Continuous and Batch Filtration Unit** ✱ NEW



① Unit TFUC. Continuous and Batch Filtration Unit

TEPGC. Computer Controlled **Expansion Processes of a Perfect Gas Unit**



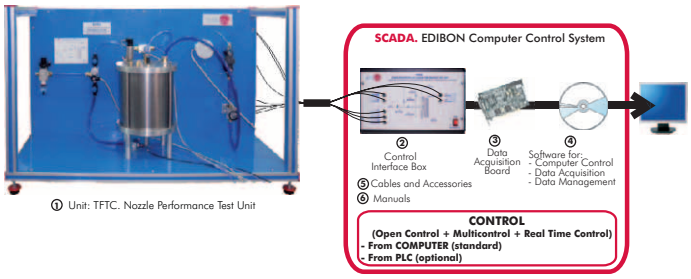
① Unit: TEPGC. Expansion Processes of a Perfect Gas Unit

✱ Non computer controlled version available too.

9.11- Nozzles & Steam

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=nozzlessteam&lang=en

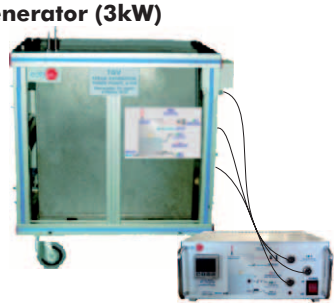
TFTC. Computer Controlled **Nozzle Performance Test Unit**



① Unit: TFTC. Nozzle Performance Test Unit

TPT. **Nozzle Pressure Distribution Unit**

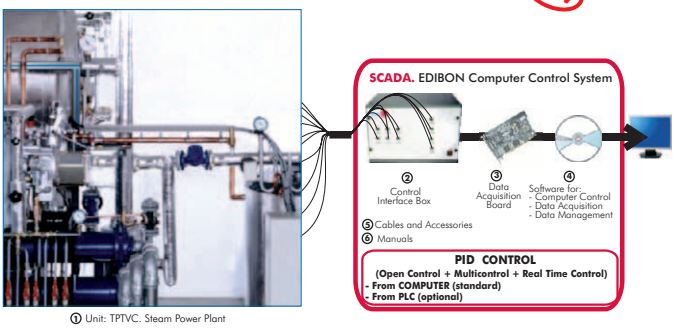
TGV. **Steam Generator (3kW)**



TGV-6KW. **Steam Generator (6kW)**

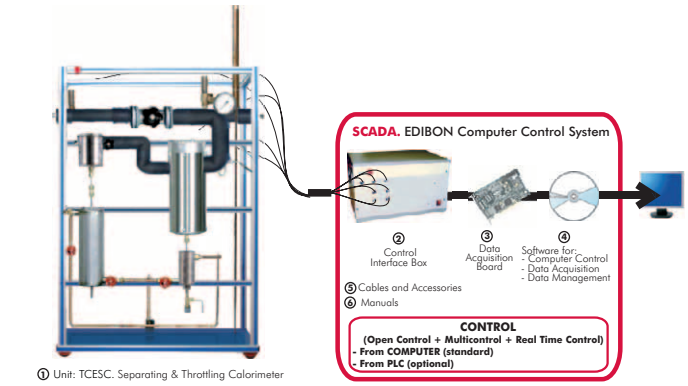
TGV-6KWA. **Steam Generator (6kW)** (for high pressures and high temperatures)

TPTVC. Computer Controlled **Steam Power Plant** NEW



① Unit: TPTVC. Steam Power Plant

TCESC. Computer Controlled **Separating & Throttling Calorimeter** NEW

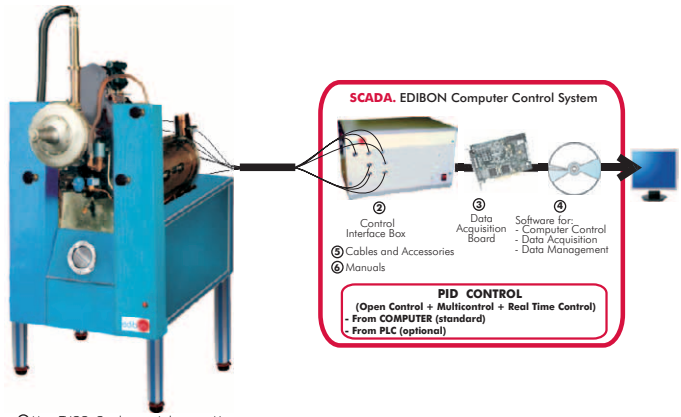


① Unit: TCESC. Separating & Throttling Calorimeter

9.12- Combustion

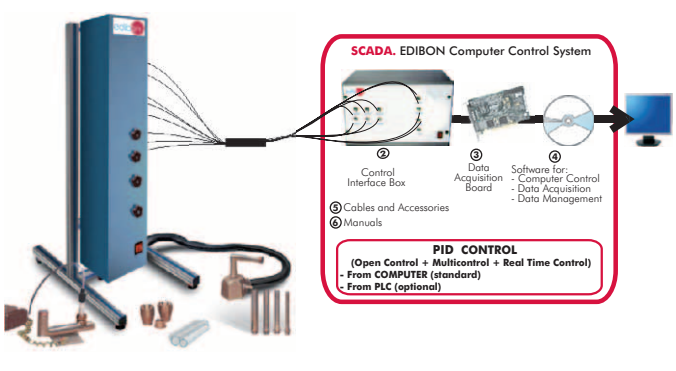
www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=combustion&lang=en

TVCC. Computer Controlled **Combustion Laboratory Unit**



① Unit: TVCC. Combustion Laboratory Unit

TVPLC. Computer Controlled **Flame Propagation and Stability Unit**

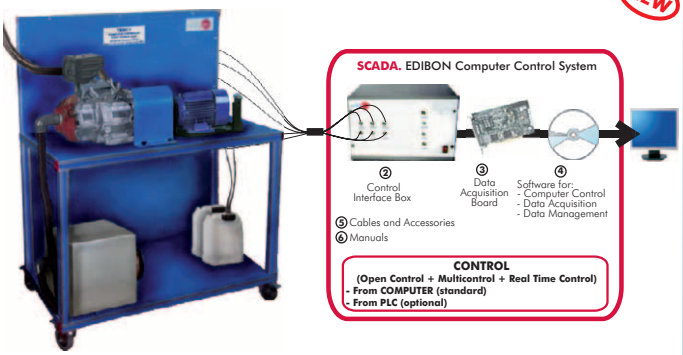


① Unit: TVPLC. Flame Propagation and Stability Unit

www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=enginestestbenches&lang=en

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

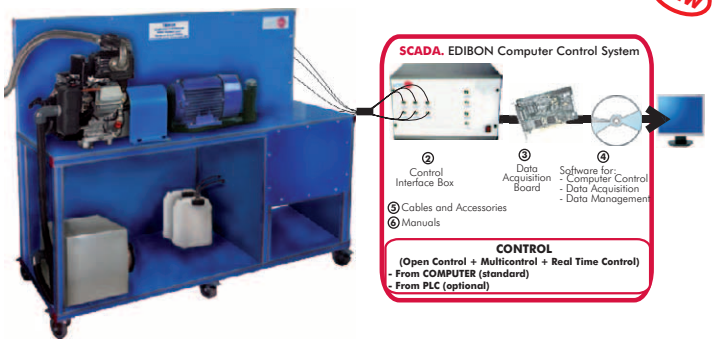
NEW



① Unit: TBMC3. Test Bench for Single-Cylinder Engines, 2.2 kW

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

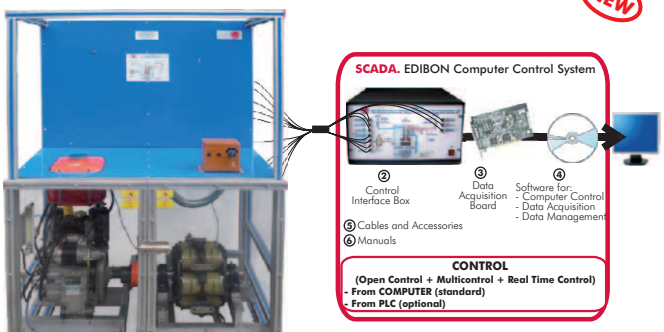
NEW



① Unit: TBMC8. Test Bench for Single-Cylinder Engines, 7.5 kW

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

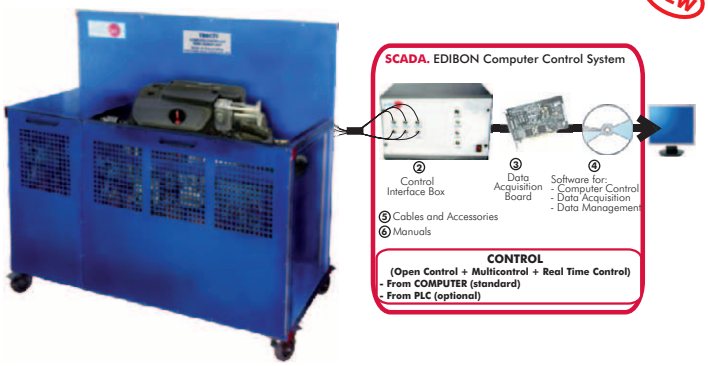
NEW



① Unit: TBMC12. Test Bench for Single-Cylinder and Two-Cylinders Engines, 11 kW

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

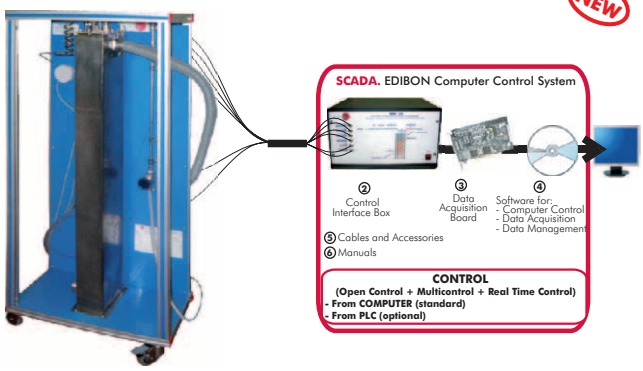
NEW



① Unit: TBMC75. Test Bench for Four-Cylinders Engines, 75 kW

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

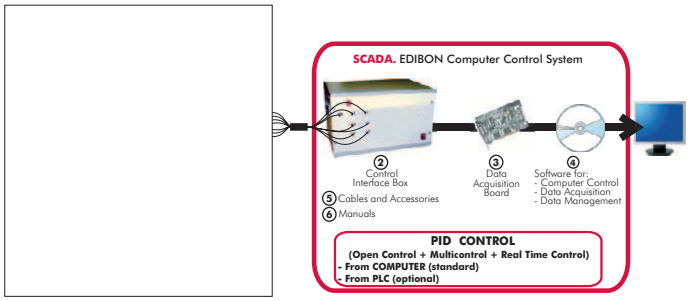
NEW



① Unit: TBMC-CG. Exhaust Gas Calorimeter

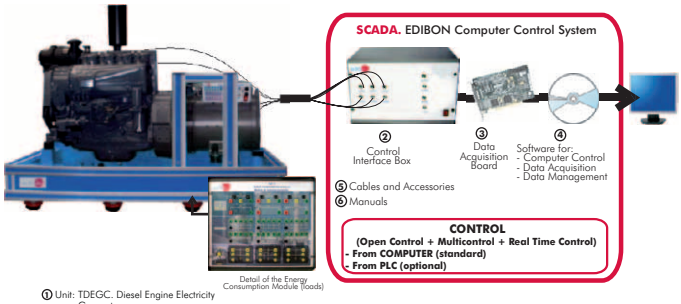
TMSC. Computer Controlled **Stirling Motor**

NEW



① Unit: TMSC. Stirling Motor

TDEGC. Computer Controlled **Diesel Engine Electricity Generator**



Detail of the Energy Consumption Module (loads)

① Unit: TDEGC. Diesel Engine Electricity Generator

TBMC-AGE. **Exhaust Gas Analyzer**

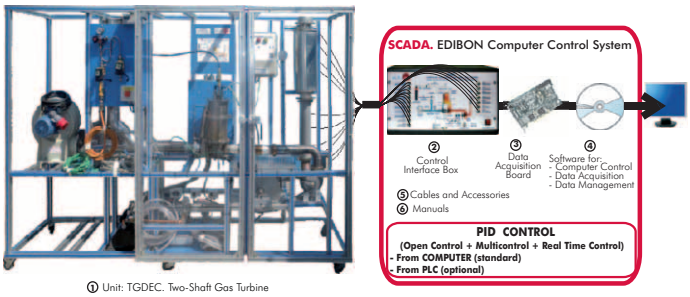
NEW

Other available Unit:

- TMHC **Computer Controlled Test Bench for Hybrid Engine** NEW

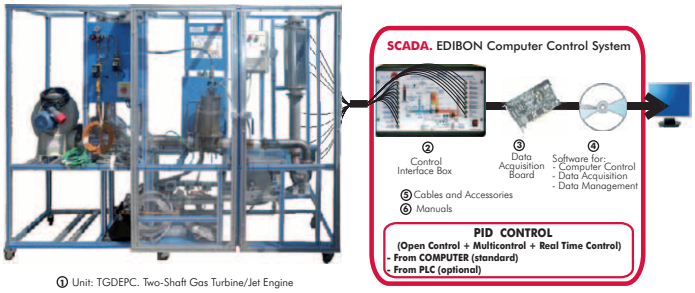
www.edibon.com/products/index.php?area=thermodynamicsthermotechnics&subarea=turbines&lang=en

TGDEC. Computer Controlled **Two-Shaft Gas Turbine** NEW



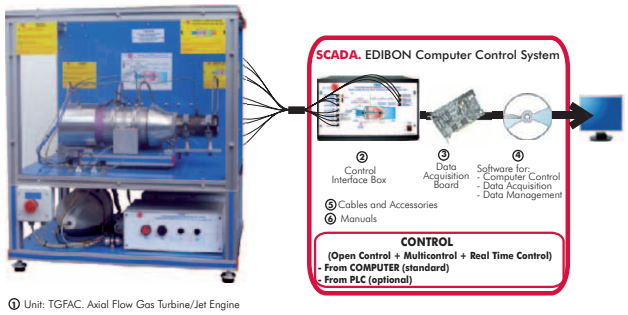
① Unit: TGDEC. Two-Shaft Gas Turbine

TGDEPC. Computer Controlled **Two-Shaft Gas Turbine/Jet Engine** NEW



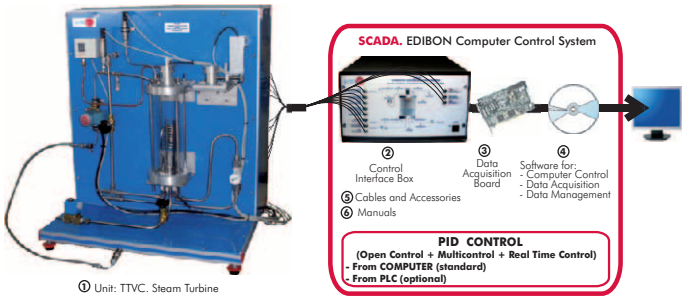
① Unit: TGDEPC. Two-Shaft Gas Turbine/Jet Engine

TGFAC. Computer Controlled **Axial Flow Gas Turbine/Jet Engine** NEW



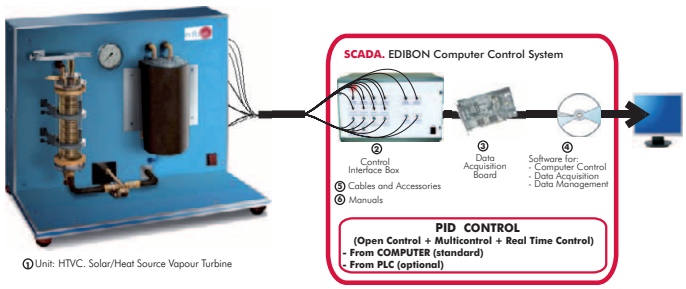
① Unit: TGFAC. Axial Flow Gas Turbine/Jet Engine

TTVC. Computer Controlled **Steam Turbine**



① Unit: TTVC. Steam Turbine

HTVC. Computer Controlled **Solar/Heat Source Vapour Turbine**

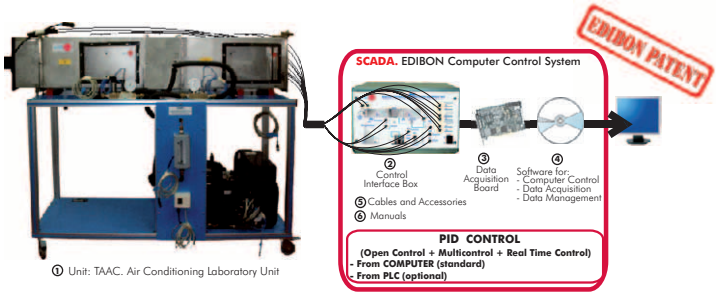


① Unit: HTVC. Solar/Heat Source Vapour Turbine

See other **Turbines** in section "**8.6. Hydraulic Machines (Turbines)**" (pages 52-53)

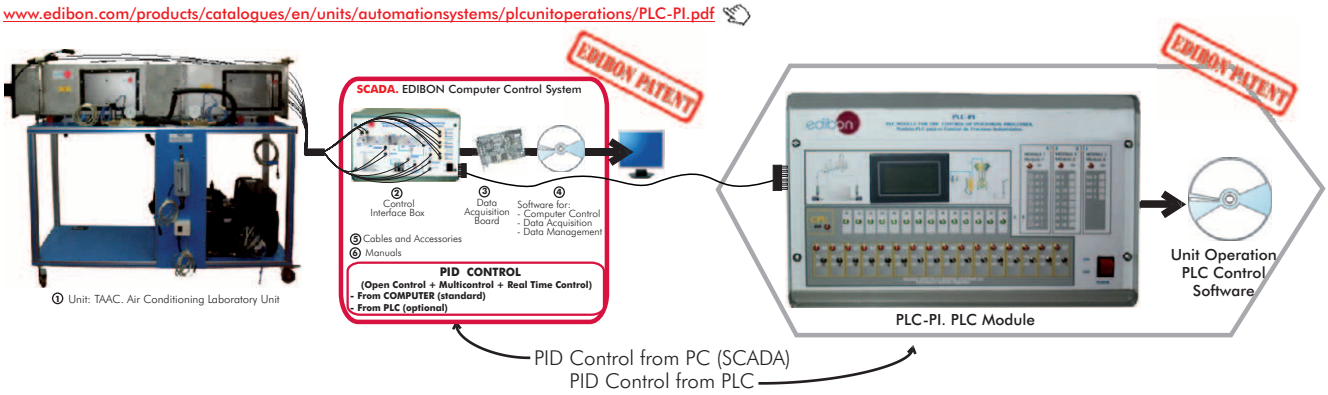
Thermodynamics & Thermotechnics control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

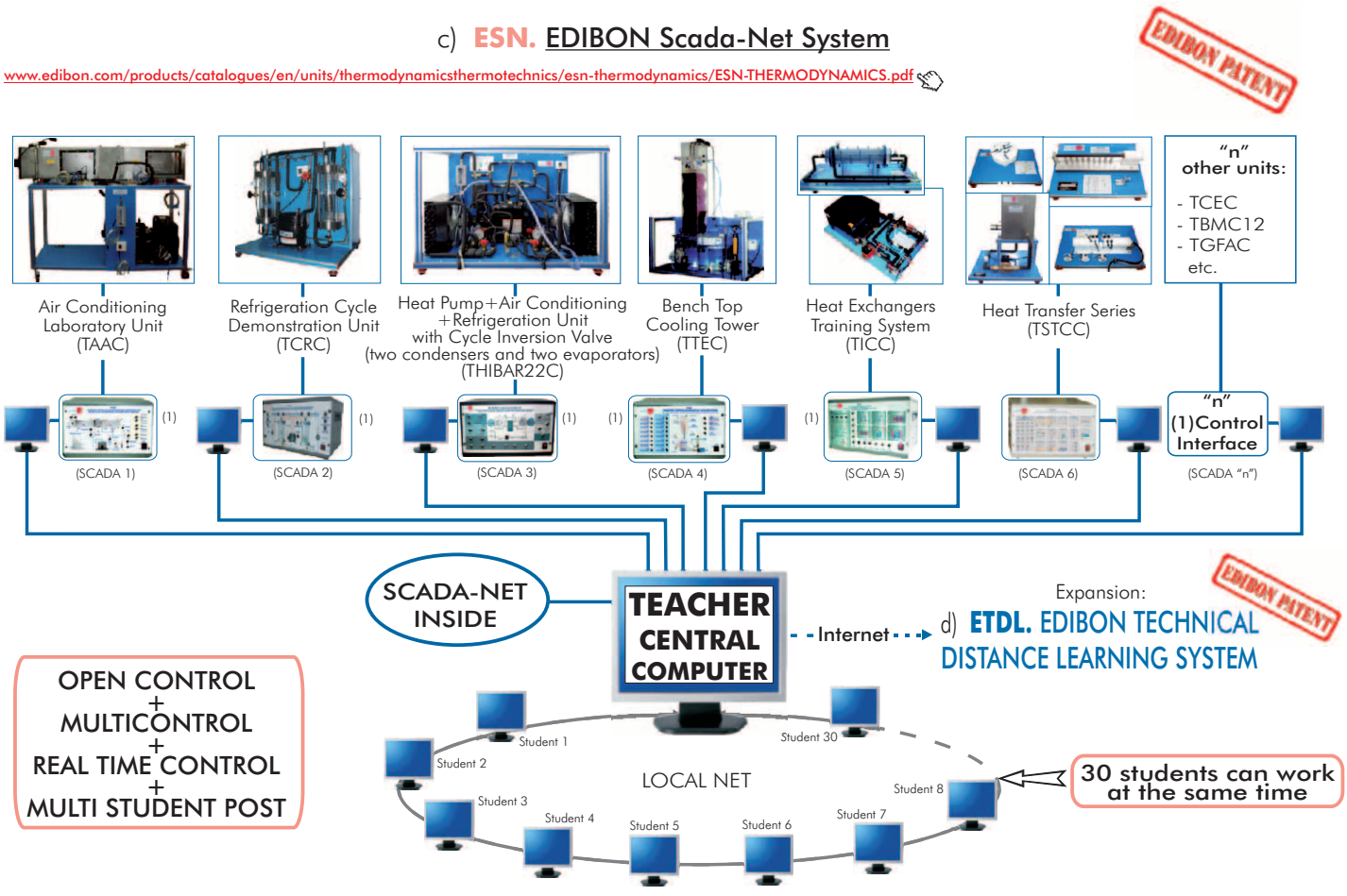


Units that can use Control from PC and PLC in this area:

TCRC, TRAC, TRCVC, THIBAR22C, THAR22C, THAR2LC, THARL2C, THARA2C, THARLLC, THARALC, THARA2C/1, THARA2C/2, THALAC/1, TCPISC, TPVC, TPCC, TEVC, EACC, THB22C, THB2LC, THBL2C, THBA2C, THBLLC, THBALC, THB2AC, THBLAC, THBAAC, TBTC, TAAC, TARC, TAAUC, THAAAC, THALAC, THA2AC, TTEC, TICC, TSTCC, TRTC, TTLFC, TCEC, TCCC, TCLGC, TCPGC, TCLFC, TIFCC, TCMC, TFLVC, TIVAC, TFEC, TRLC, TSPC, TFUC, TEPGC, TFTC, TPTVC, TCESC, TVCC, TVPLC, TBMC3, TBMC8, TBMC12, TBMC75, TBMC-CG, TMSC, TDEGC, TMHC, TGDEC, TGDEPC, TGFAC, TTVC, HTVC.

c) ESN. EDIBON Scada-Net System

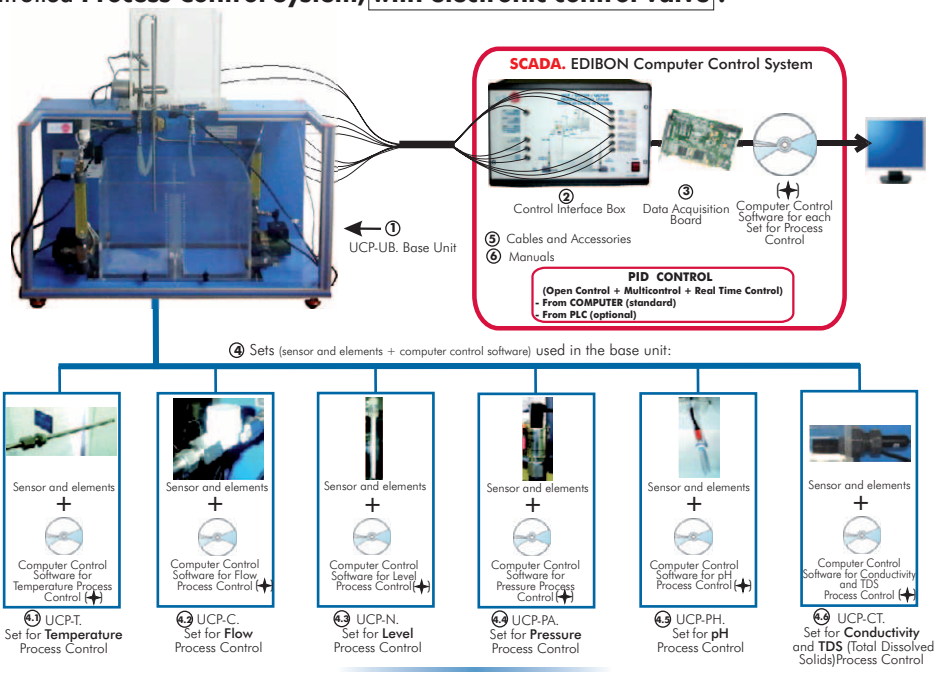
www.edibon.com/products/catalogues/en/units/thermodynamicsthermotechnics/esn-thermodynamics/ESN-THERMODYNAMICS.pdf



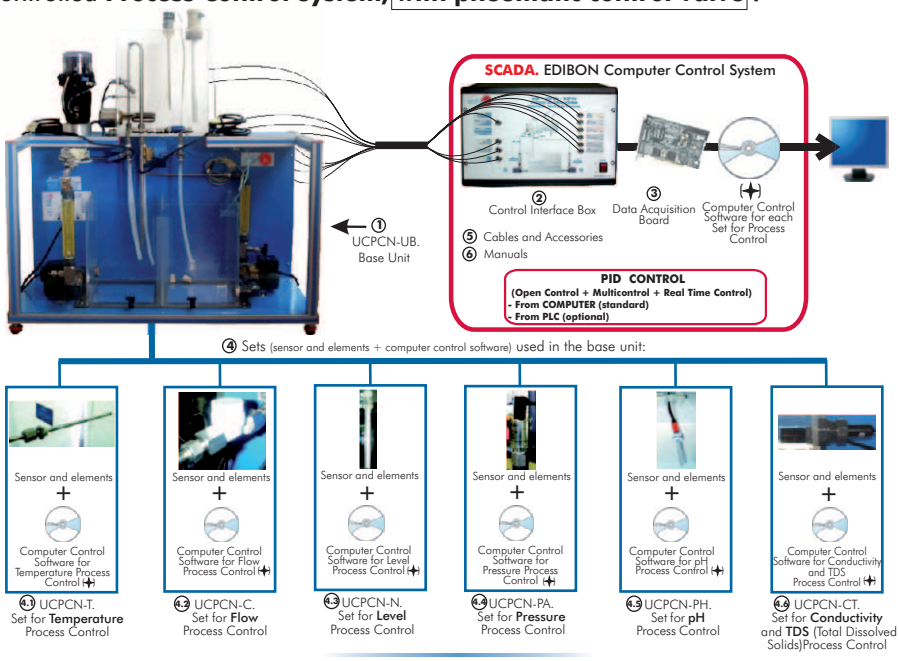
Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

www.edibon.com/products/index.php?area=processcontrol&subarea=fundamentals&lang=en

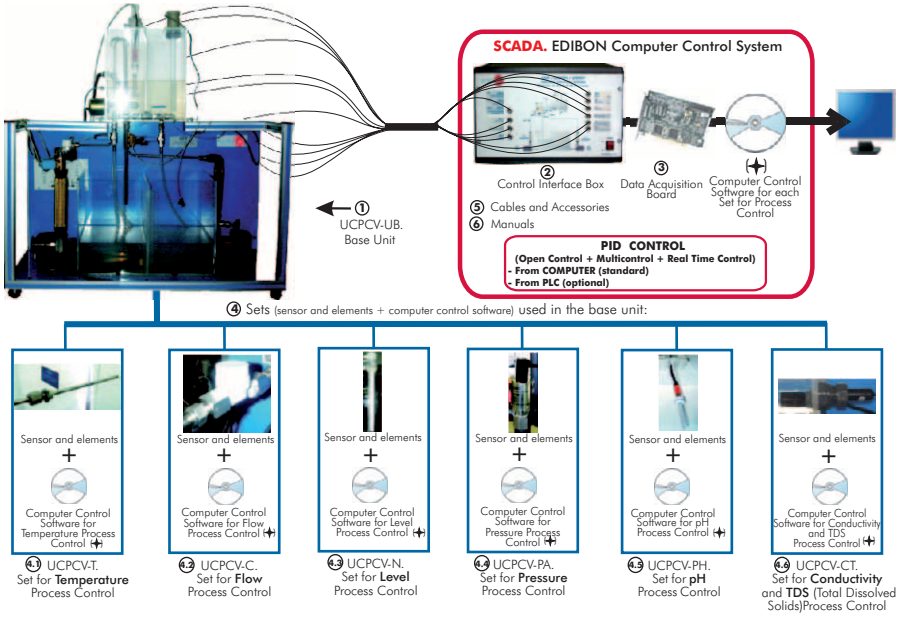
UCP. Computer Controlled **Process Control System, with electronic control valve :**



UCPCN. Computer Controlled **Process Control System, with pneumatic control valve :**



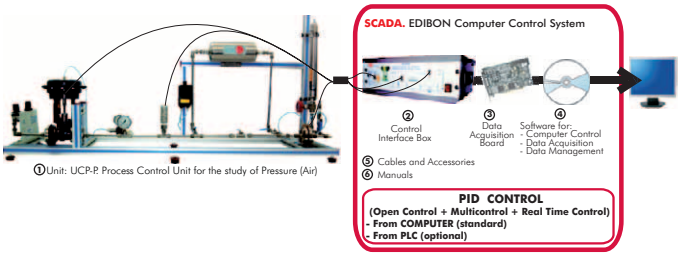
UCPCV. Computer Controlled **Process Control System, with speed controller :**



10.1- Process Control. Fundamentals

www.edibon.com/products/index.php?area=processcontrol&subarea=fundamentals&lang=en

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



① Unit: UCP-P. Process Control Unit for the study of Pressure (Air)

Other available Units:

-CECI. **Industrial Controllers Trainer** (see page 40)

-CRCI. **Industrial Controllers Networking** (see page 40)

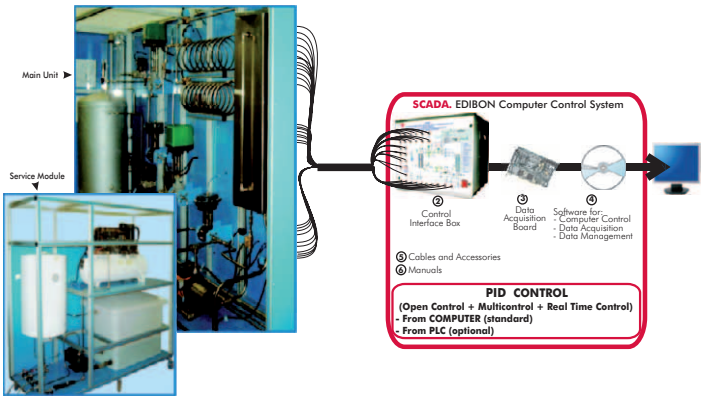
-CEAB. **Trainer for Field Bus Applications** (see page 40)

-CEAC. **Controller Tuning Trainer** (see page 40)

10.2- Industrial Process Control

www.edibon.com/products/index.php?area=processcontrol&subarea=industrial&lang=en

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



① Unit: CPIC. Process Control Plant with Industrial Instrumentation and Service Module (Flow, Temperature, Level and Pressure)

Other available Units:

-CPIC-C. Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Flow)

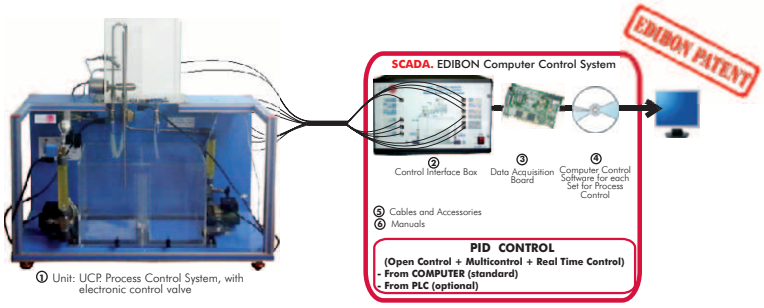
-CPIC-T. Computer Controlled **Process Control Plant with Industrial Instrumentation and Service Module** (only Temperature)

-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)

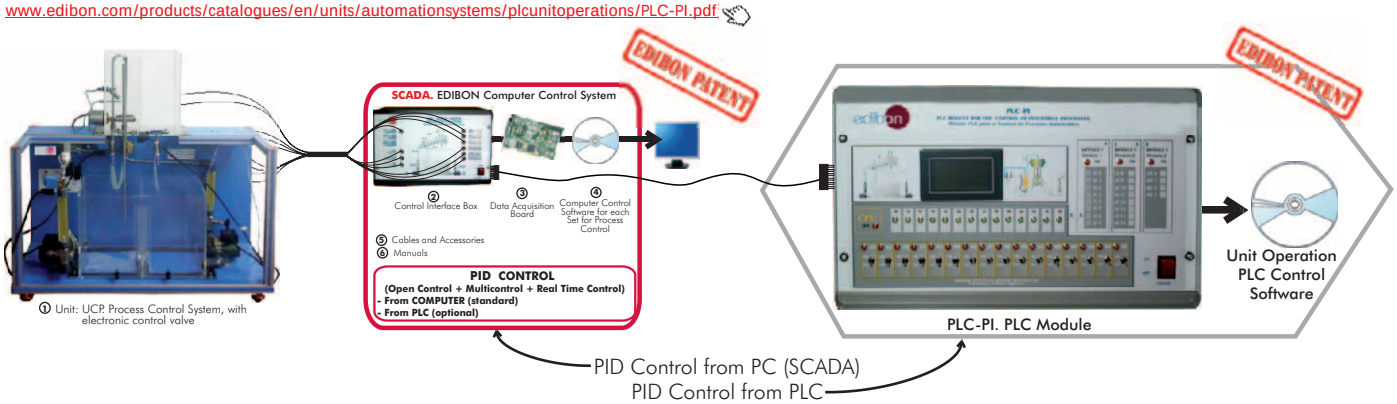
Process Control control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

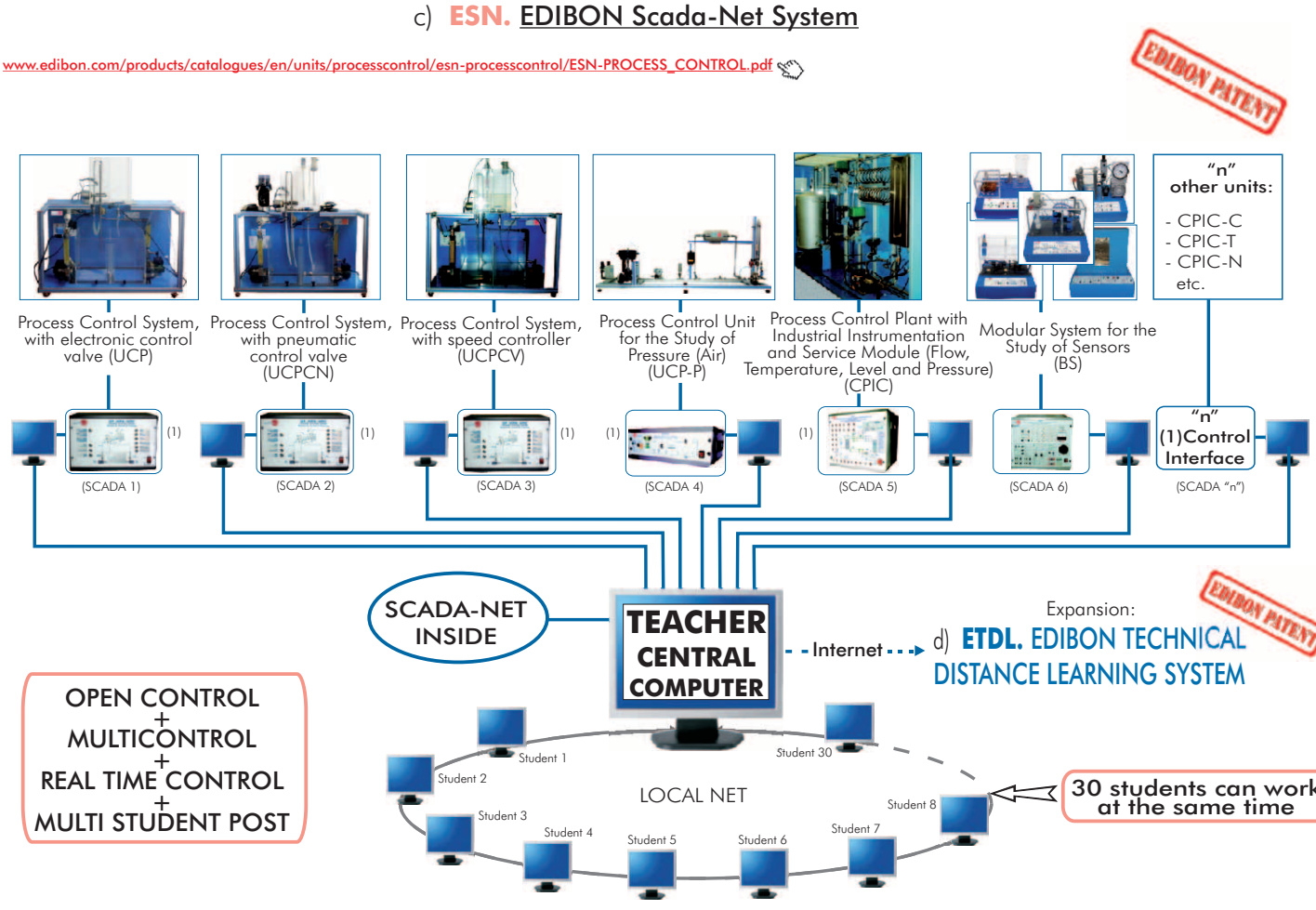


Units that can use Control from PC and PLC in this area:

UCP, UCPCN, UCPCV, UCP-P, CPIC, CPIC-C, CPIC-T, CPIC-N, CPIC-P.

c) ESN. EDIBON Scada-Net System

www.edibon.com/products/catalogues/en/units/processcontrol/esn-processcontrol/ESN-PROCESS_CONTROL.pdf

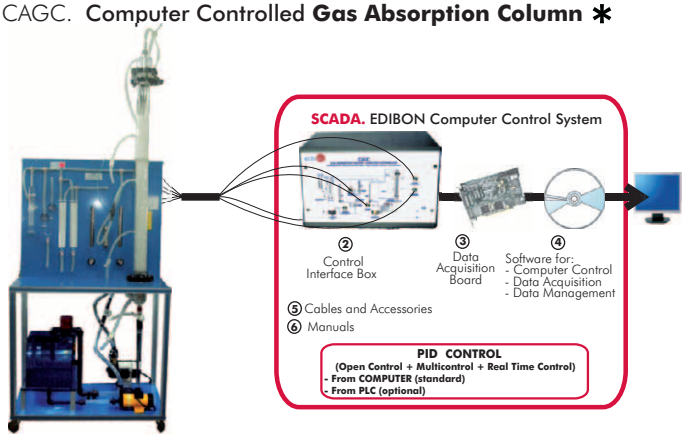


Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

11.1- Chemical Engineering (Basic)

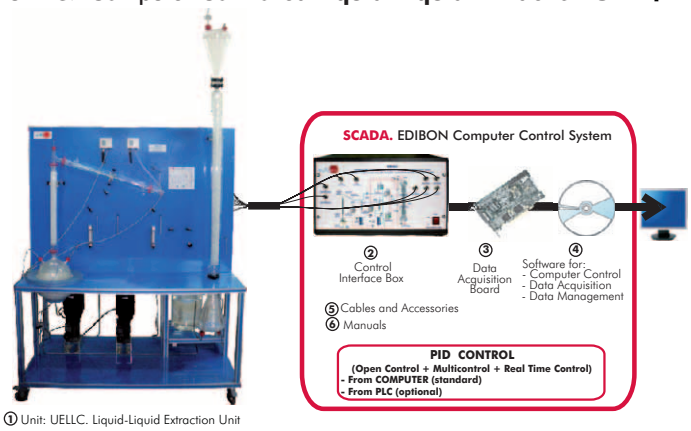
www.edibon.com/products/index.php?area=chemicalengineering&subarea=chemicalengineeringbasic&lang=en

CAGC. Computer Controlled **Gas Absorption Column** ✱



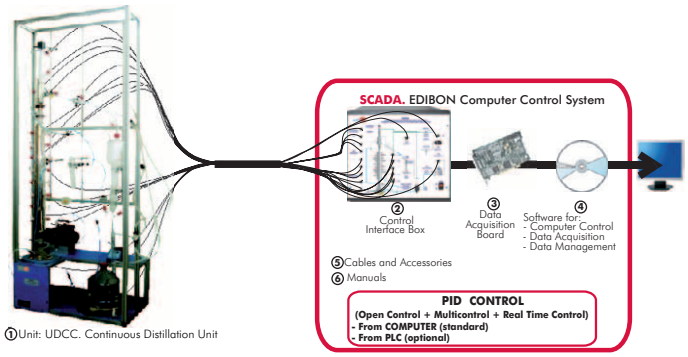
① Unit: CAGC. Gas Absorption Column

UELLC. Computer Controlled **Liquid-Liquid Extraction Unit** ✱



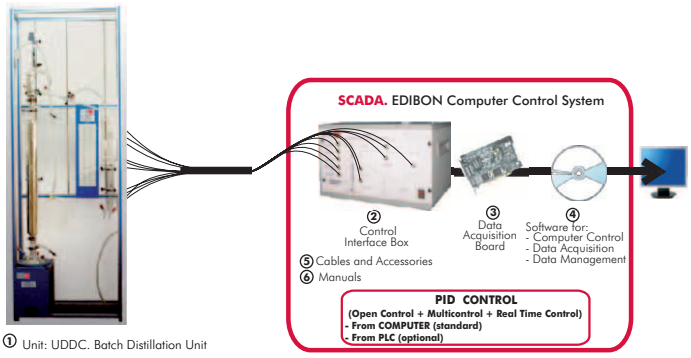
① Unit: UELLC. Liquid-Liquid Extraction Unit

UDCC. Computer Controlled **Continuous Distillation Unit** ✱



① Unit: UDCC. Continuous Distillation Unit

UDDC. Computer Controlled **Batch Distillation Unit** ✱

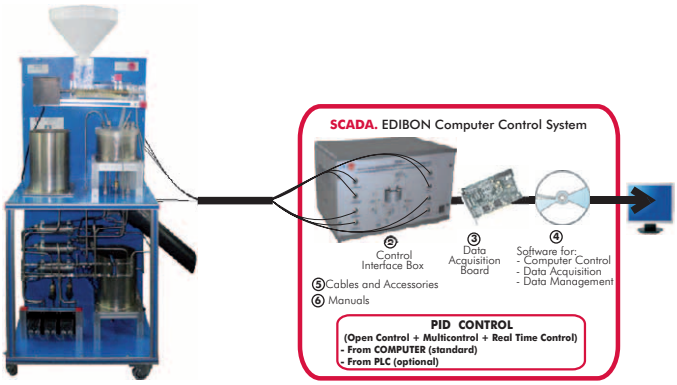


① Unit: UDDC. Batch Distillation Unit

11.2- Chemical Engineering (General)

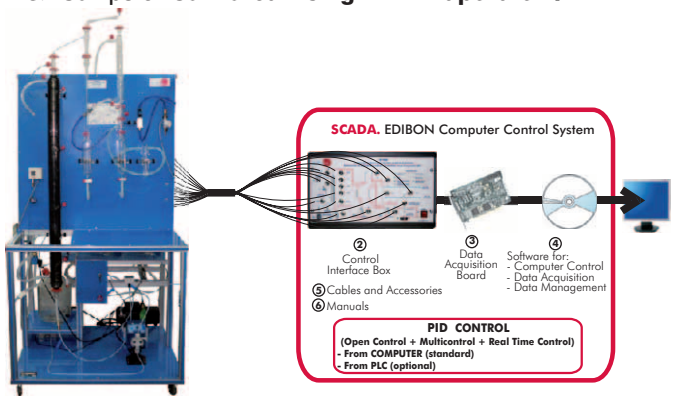
www.edibon.com/products/index.php?area=chemicalengineering&subarea=chemicalengineeringgeneral&lang=en

UESLC. Computer Controlled **Solid-Liquid Extraction Unit** ✱



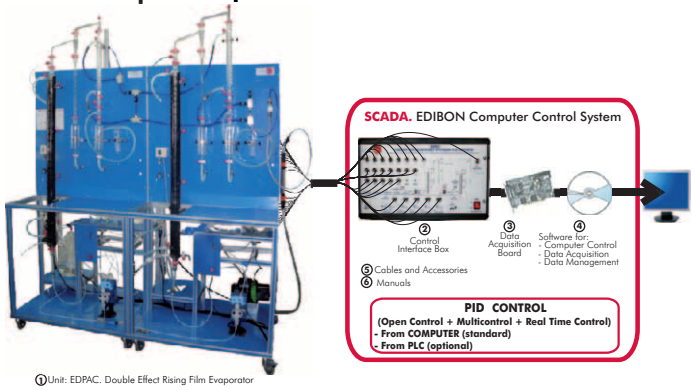
① Unit: UESLC. Solid-Liquid Extraction Unit

EPAC. Computer Controlled **Rising Film Evaporator** ✱



① Unit: EPAC. Rising Film Evaporator

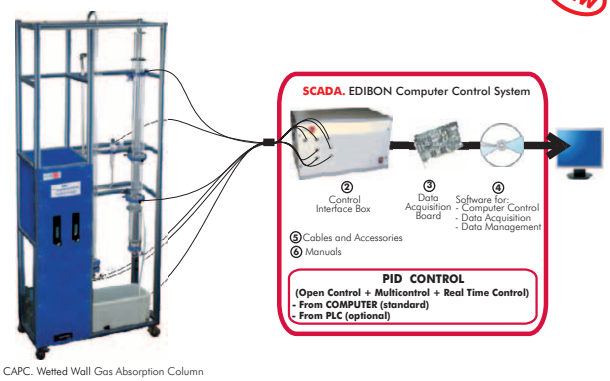
EDPAC. Computer Controlled **Double Effect Rising Film Evaporator** ✱



① Unit: EDPAC. Double Effect Rising Film Evaporator

CAPC. Computer Controlled **Wetted Wall Gas Absorption Column**

NEW



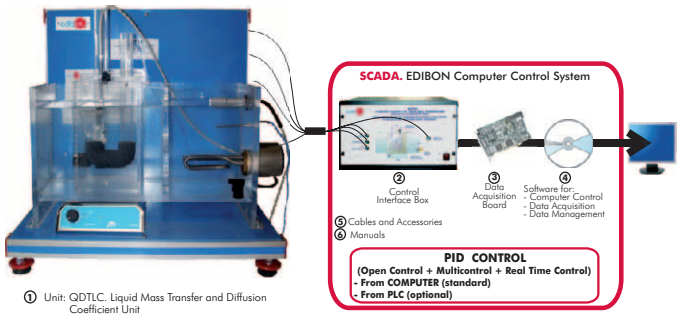
① Unit: CAPC. Wetted Wall Gas Absorption Column

✱ Non computer controlled version available too.

11.2- Chemical Engineering (General)

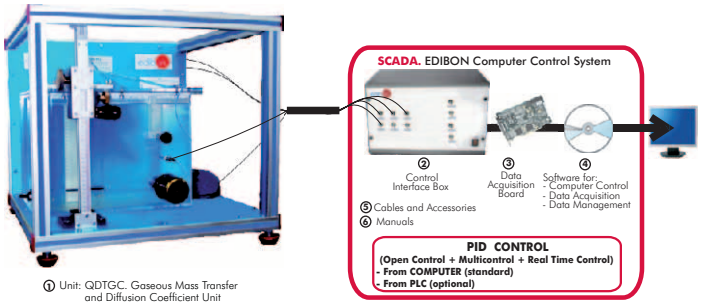
www.edibon.com/products/index.php?area=chemicalengineering&subarea=chemicalengineeringgeneral&lang=en

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



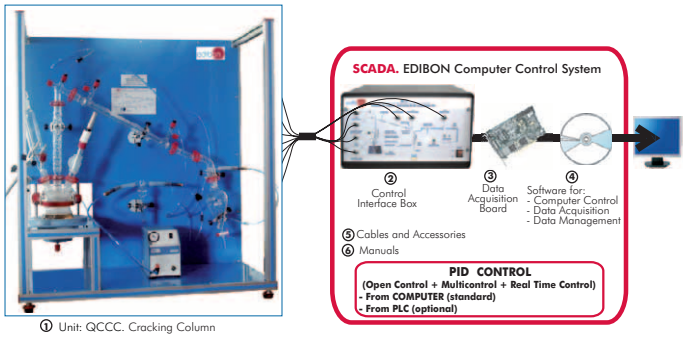
① Unit: QDTLC. Liquid Mass Transfer and Diffusion Coefficient Unit

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



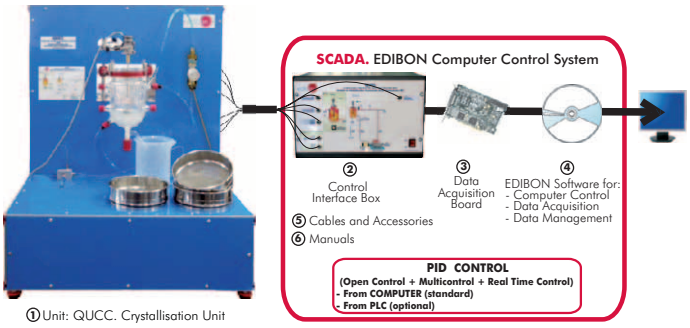
① Unit: QDTGC. Gaseous Mass Transfer and Diffusion Coefficient Unit

QCCC. Computer Controlled **Cracking Column**



① Unit: QCCC. Cracking Column

QUCC. Computer Controlled **Crystallisation Unit** ✱ NEW



① Unit: QUCC. Crystallisation Unit

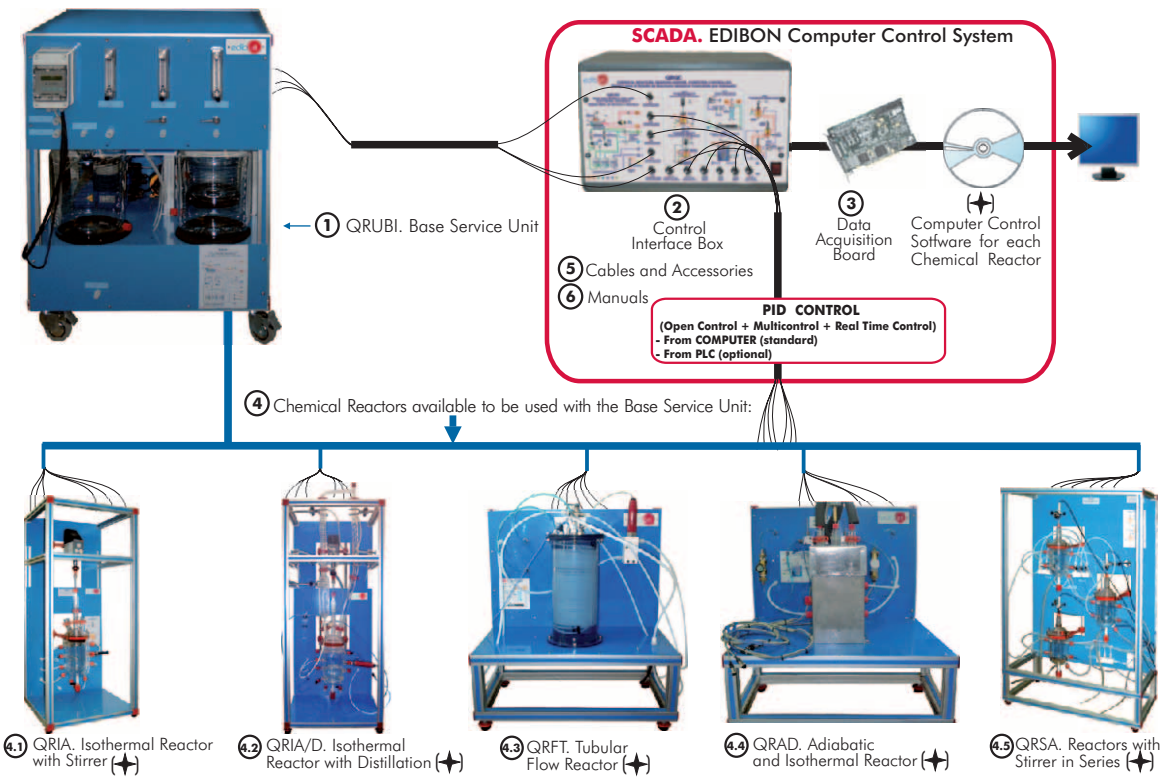
Other available Units: NEW

- QALFC. Computer Controlled **Fixed Bed Adsorption Unit**
- EPDC. Computer Controlled **Falling Film Evaporator** ✱
- EDPDC. Computer Controlled **Double Effect Falling Film Evaporator** ✱

11.3- Chemical Reactors

www.edibon.com/products/index.php?area=chemicalengineering&subarea=reactors&lang=en

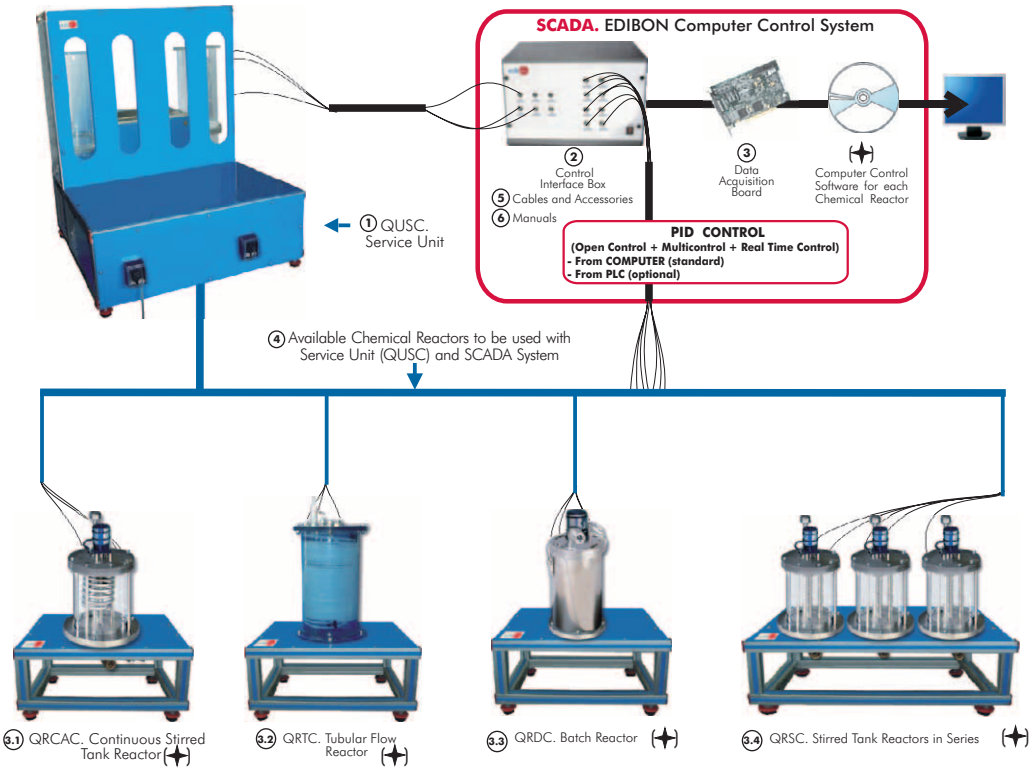
QRQC. Computer Controlled **Chemical Reactors Training System:**



✱ Non computer controlled version available too.

www.edibon.com/products/index.php?area=chemicalengineering&subarea=reactors&lang=en

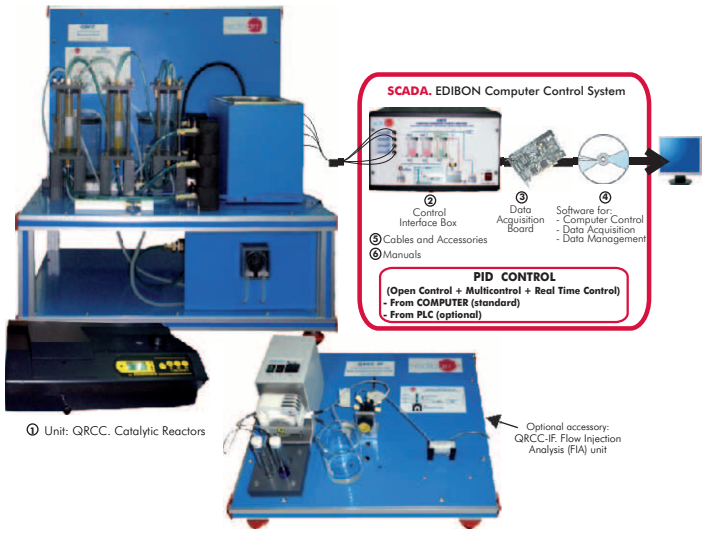
QRC. Computer Controlled **Chemical Reactors Trainer:** *



Other available Chemical Reactors NEW
to be used with the Unit (QUSC) and SCADA system:

- QRLC. **Laminar Flow Reactor**
- QRPC. **Plug Flow Reactor**

QRCC. Computer Controlled **Catalytic Reactors** * NEW



* Non computer controlled version available too.

11.4- Chemical Process

www.edibon.com/products/index.php?area=chemicalengineering&subarea=chemicalprocess&lang=en

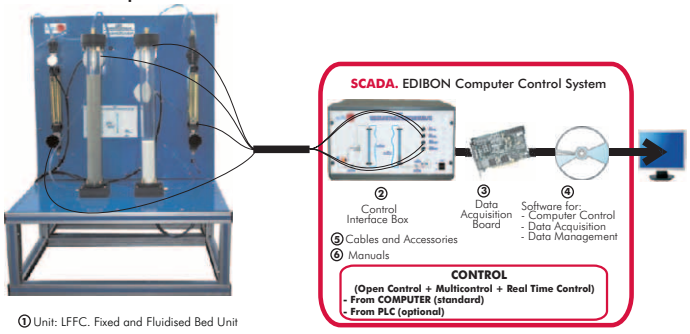
EMLS. **Liquid/Solid Mixing Unit**

EEC. **Corrosion Study Unit**

ESED. **Sedimentation Study Unit**

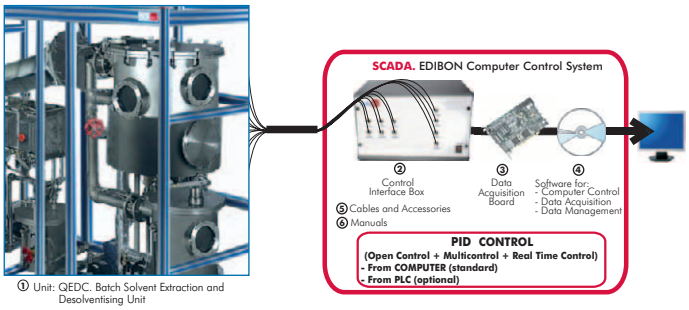
QMS. **Solids Handling Study Unit**

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



① Unit: LFFC. Fixed and Fluidised Bed Unit

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



① Unit: QEDC. Batch Solvent Extraction and Desolventising Unit

Other available Units:

-TFUC. Computer Controlled **Continuous and Batch Filtration Unit** ✱ (see page 62)

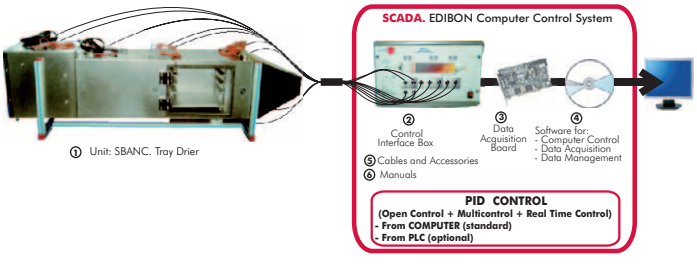
-EFLPC. Computer Controlled **Deep Bed Filter Unit** ✱ (see page 79)

-EII. **Ion Exchange Unit** (see page 79)

11.5- Chemical Process (Agronomical Industry)

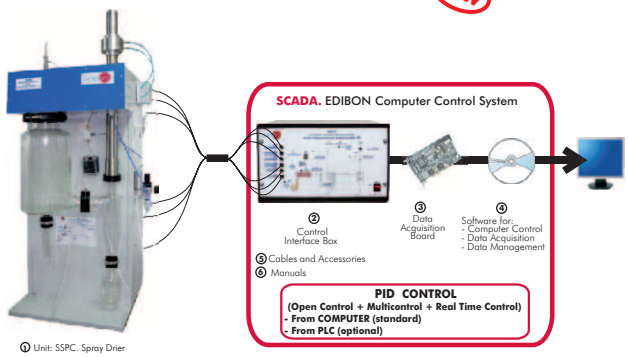
www.edibon.com/products/index.php?area=chemicalengineering&subarea=agronomicalindustry&lang=en

SBANC. Computer Controlled **Tray Drier**



① Unit: SBANC. Tray Drier

SSPC. Computer Controlled **Spray Drier** ✱ NEW



① Unit: SSPC. Spray Drier

11.6- Chemical Process (Special)

www.edibon.com/products/index.php?area=chemicalengineering&subarea=chemicalprocessspecial&lang=en

Available Units:

-EPIRC. Computer Controlled **Pyrolysis Unit**

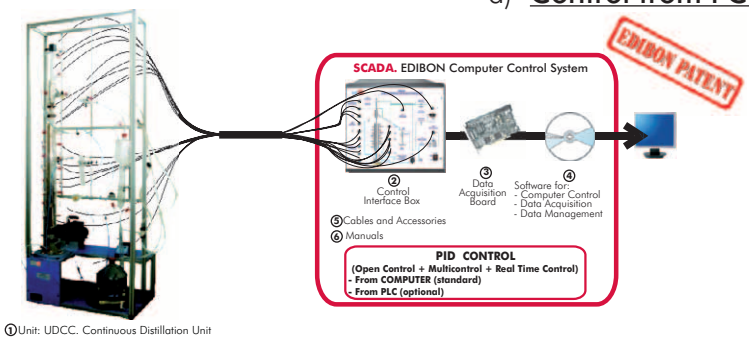
-PLGC. Computer Controlled **Gas Washing Process Plant**

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

✱ Non computer controlled version available too.

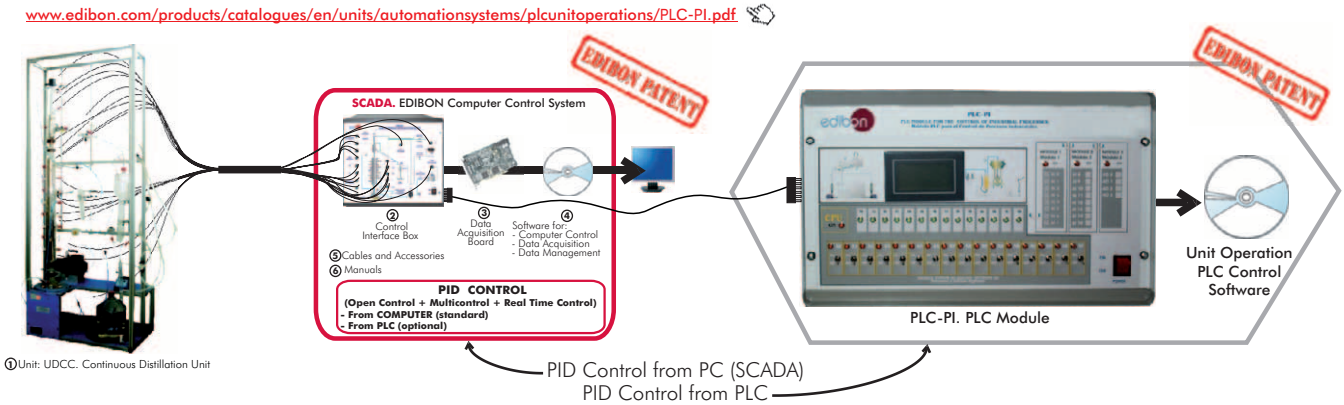
Chemical Engineering control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

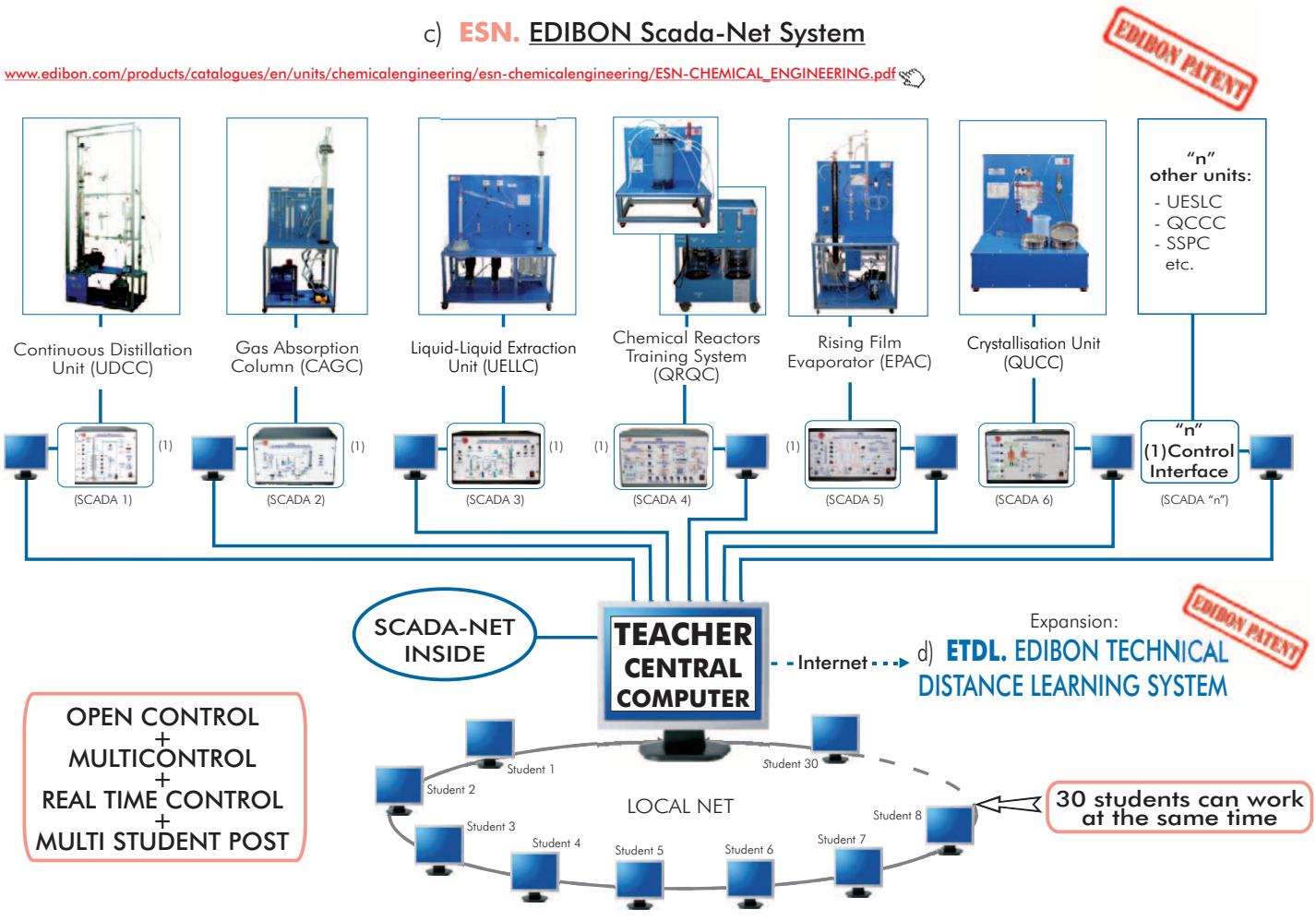


Units that can use Control from PC and PLC in this area:

CAGC, UELLC, UDCC, UDDC, UESLC, EPAC, EDPAC, CAPC, QDTLC, QDTGC, QCCC, QUCC, EPDC, EDPDC, QALFC, QRQC, QRC, QRCC, LFFC, QEDC, TFUC, EFLPC, SBANC, SSPC, EPIRC, PLGC, PPDAC.

c) ESN. EDIBON Scada-Net System

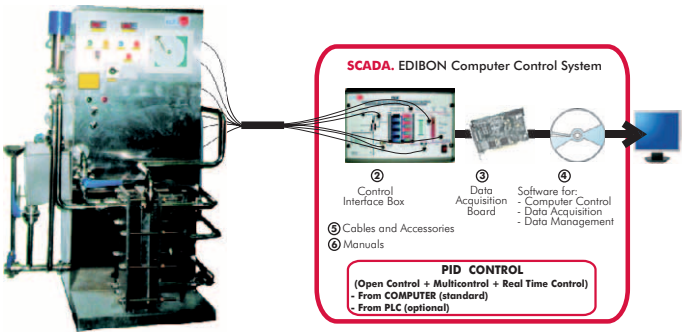
www.edibon.com/products/catalogues/en/units/chemicalengineering/esn-chemicalengineering/ESN-CHEMICAL_ENGINEERING.pdf



Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

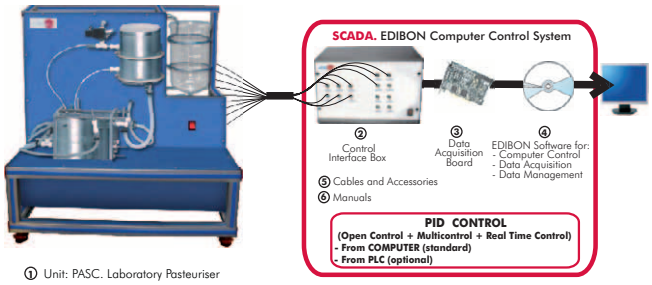
www.edibon.com/products/index.php?area=foodwatertechnologies&subarea=foodtechnologybasic&lang=en

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



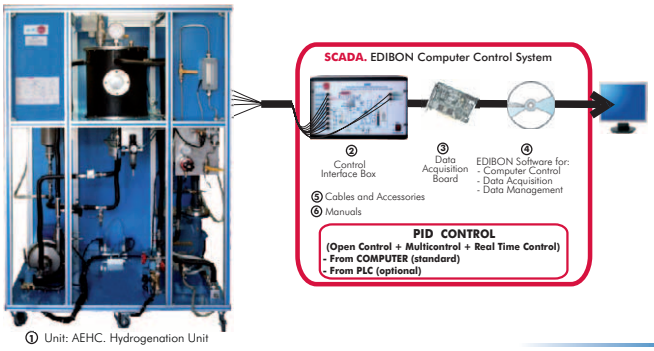
① Unit: PADC. Teaching Autonomous Pasteurization Unit

PASC. Computer Controlled **Laboratory Pasteuriser** NEW



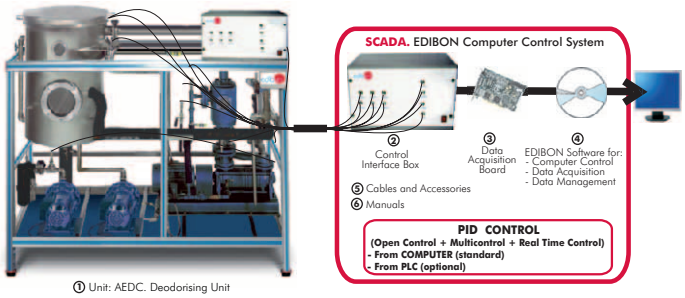
① Unit: PASC. Laboratory Pasteuriser

AEHC. Computer Controlled **Hydrogenation Unit**



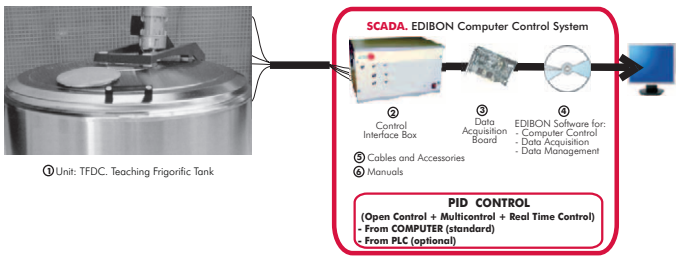
① Unit: AEHC. Hydrogenation Unit

AEDC. Computer Controlled **Deodorising Unit**



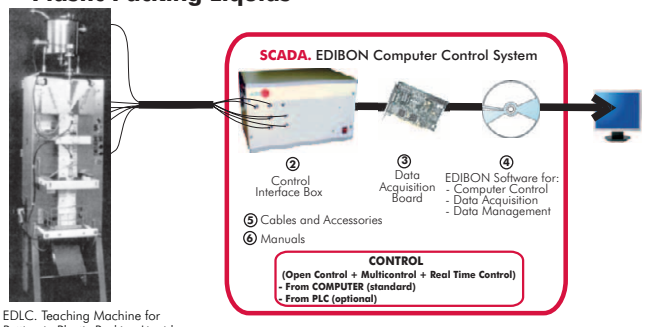
① Unit: AEDC. Deodorising Unit

TFDC. Computer Controlled **Teaching Frigorific Tank**



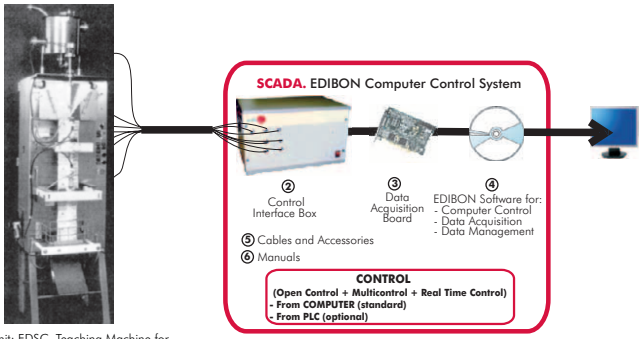
① Unit: TFDC. Teaching Frigorific Tank

EDLC. Computer Controlled **Teaching Machine for Putting in Plastic Packing Liquids**



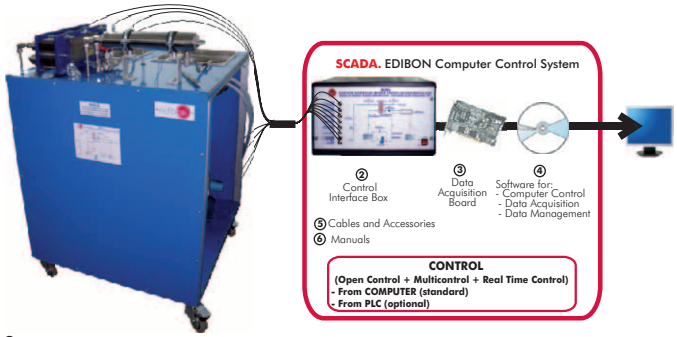
① Unit: EDLC. Teaching Machine for Putting in Plastic Packing Liquids

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



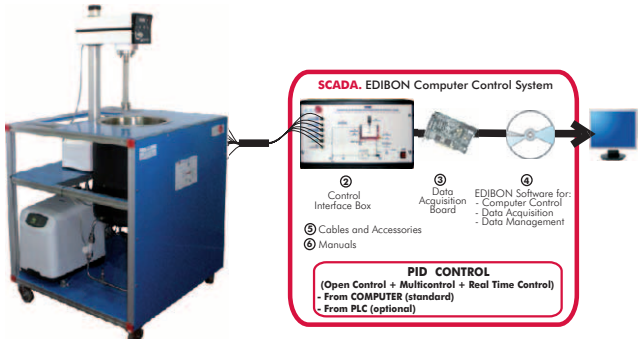
① Unit: EDSC. Teaching Machine for Putting into a Container Solids

ROUC. Computer Controlled **Reverse Osmosis/Ultrafiltration Unit**



① Unit: ROUC. Reverse Osmosis/Ultrafiltration Unit

VPMC. Computer Controlled **Multipurpose Processing Vessel**



① Unit:VPMC. Multipurpose Processing Vessel

Other available Units: NEW

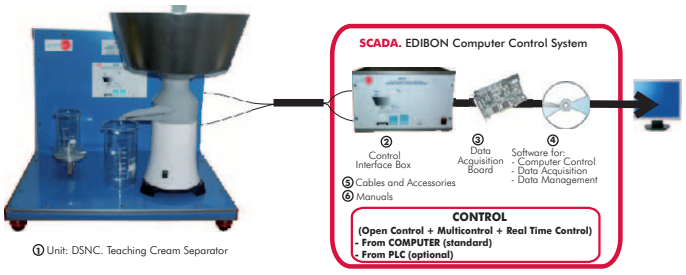
- AFPMC. Computer Controlled **Plate and Frame Filter Press**
- SBANC. Computer Controlled **Tray Drier** (see page 73)
- SSPC. Computer Controlled **Spray Drier** ✱ (see page 73)
- TPCC. Computer Controlled **Contact Plate Freezer** (see page 56)

✱ Non computer controlled version available too.

12.2- Food Technology (Milk)

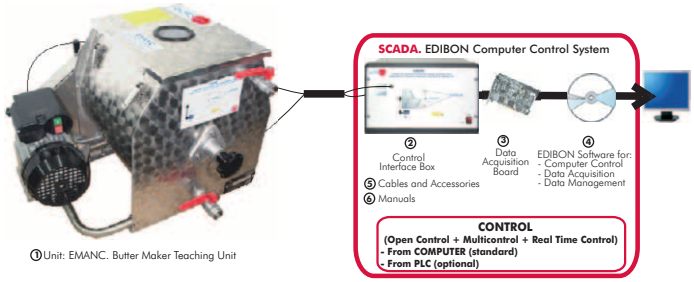
www.edibon.com/products/index.php?area=foodwatertechnologies&subarea=foodtechnologymilk&lang=en

DSNC. Computer Controlled **Teaching Cream Separator** ✱



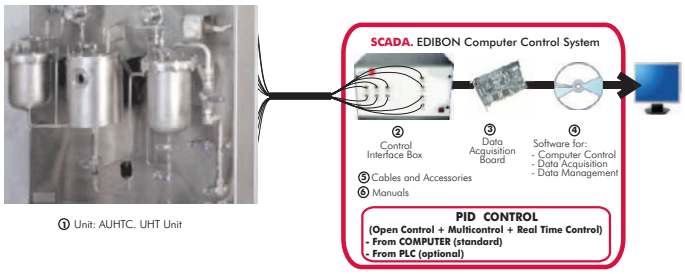
① Unit: DSNC. Teaching Cream Separator

EMANC. Computer Controlled **Butter Maker Teaching Unit** ✱



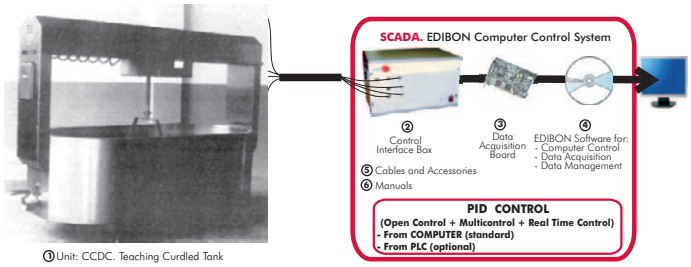
① Unit: EMANC. Butter Maker Teaching Unit

AUHTC. Computer Controlled **UHT Unit**



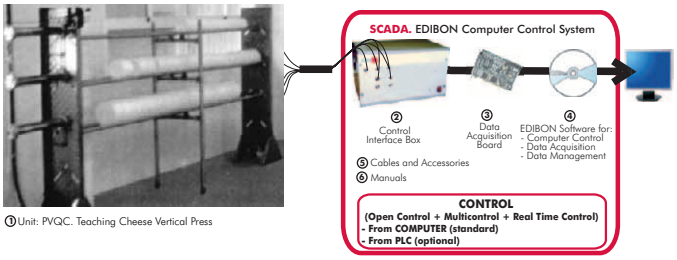
① Unit: AUHTC. UHT Unit

CCDC. Computer Controlled **Teaching Curdled Tank**



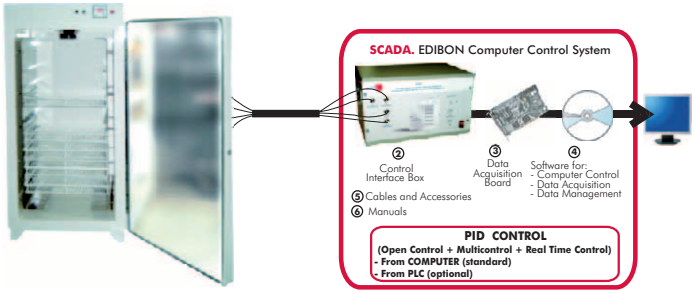
① Unit: CCDC. Teaching Curdled Tank

PVQC. Computer Controlled **Teaching Cheese Vertical Press**



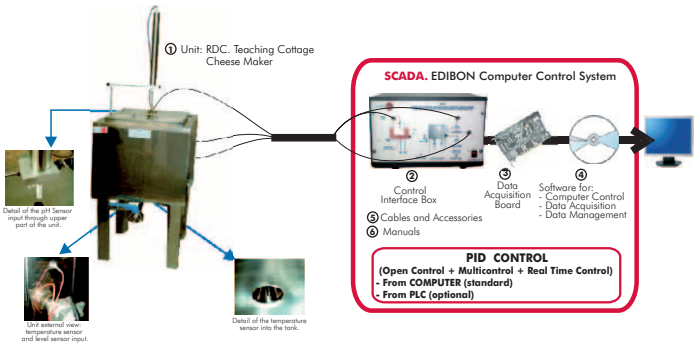
① Unit: PVQC. Teaching Cheese Vertical Press

IYDC. Computer Controlled **Teaching Yogurt Incubator**



① Unit: IYDC. Teaching Yogurt Incubator

RDC. Computer Controlled **Teaching Cottage Cheese Maker**



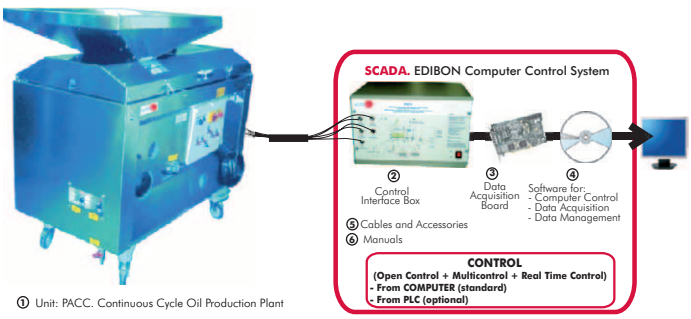
Other available Unit: NEW

- AEQC. Computer Controlled **Cheese Vat & Cheese Macking Accesories**
- PADC. Computer Controlled **Teaching Autonomous Pasteurization Unit** (see page 75)
- PASC. Computer Controlled **Laboratory Pasteuriser** (see page 75)
- FQDC. Computer Controlled **Teaching Cheese Melter**

12.3- Food Technology (Oil)

www.edibon.com/products/index.php?area=foodwatertechnologies&subarea=foodtechnologyoil&lang=en

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

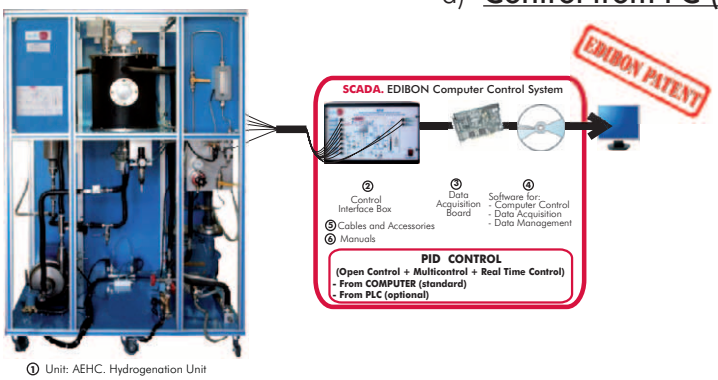


① Unit: PACC. Continuous Cycle Oil Production Plant

✱ Non computer controlled version available too.

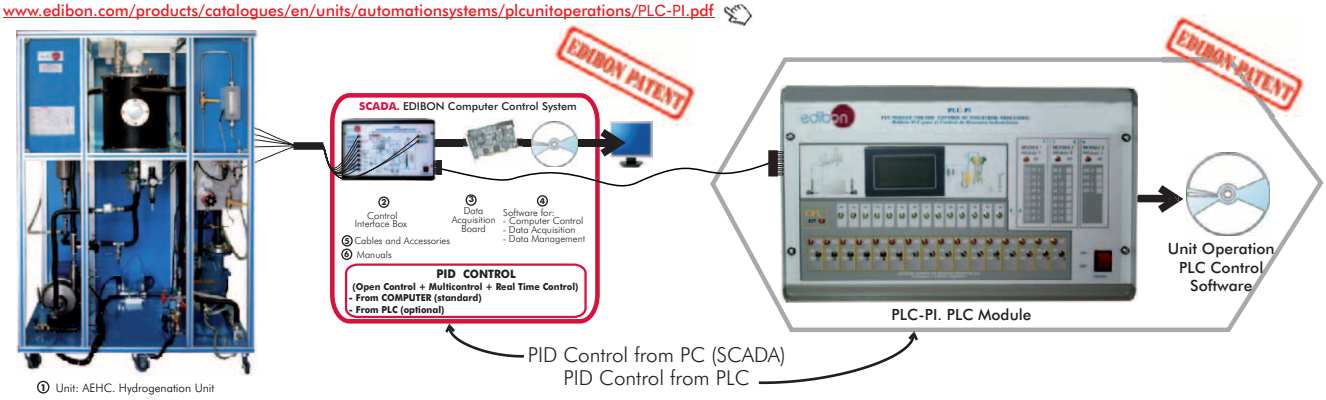
Food & Water Technologies control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

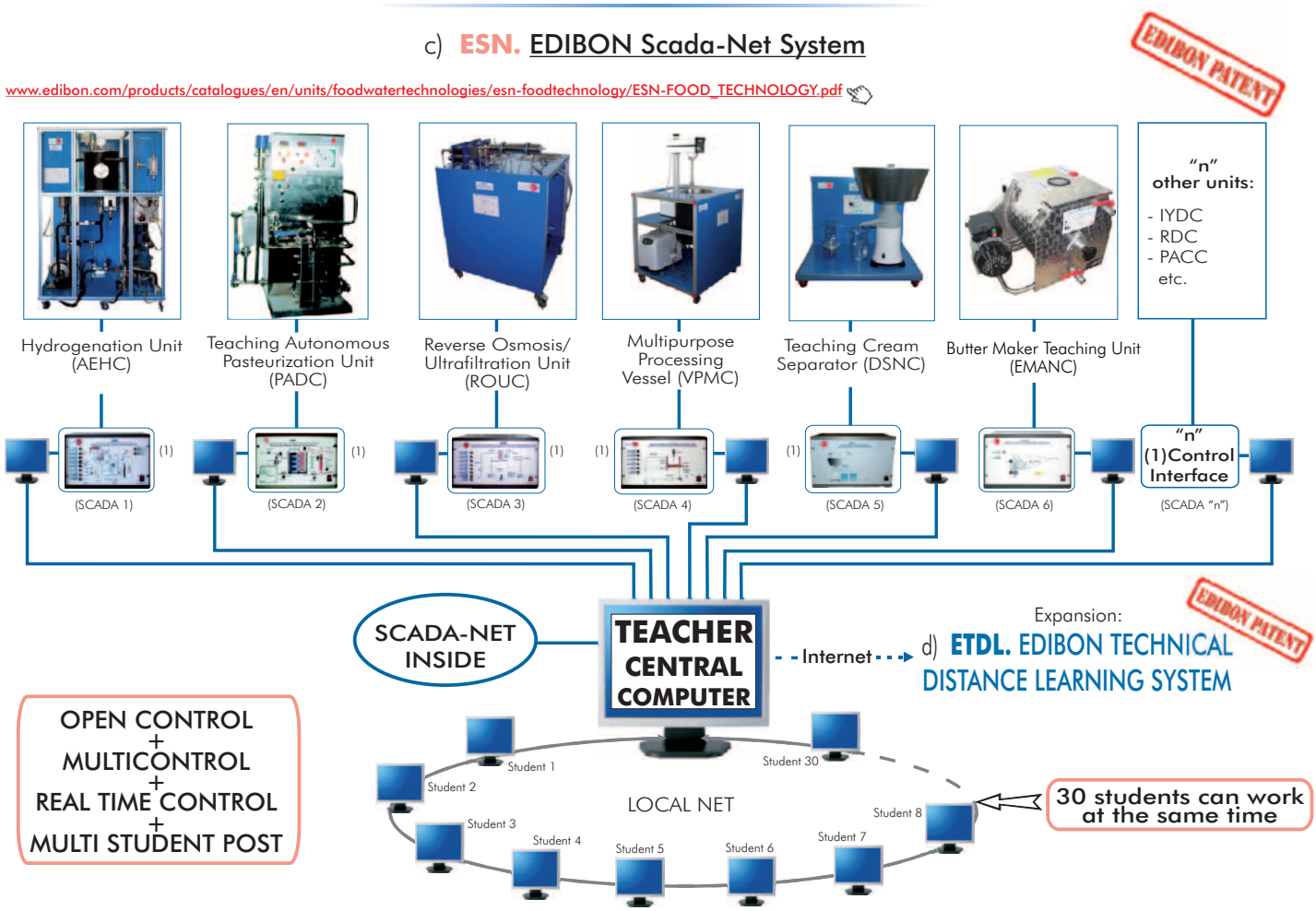


Units that can use Control from PC and PLC in this area:

PADC, PASC, AEHC, AEDC, TFDC, EDLC, EDSC, ROUC, VPMC, AFPMC, SBANC, SSPC, TPCC, DSNC, EMANC, AUHTC, CCDC, PVQC, IYDC, RDC, AEQC, FQDC, PACC.

c) ESN. EDIBON Scada-Net System

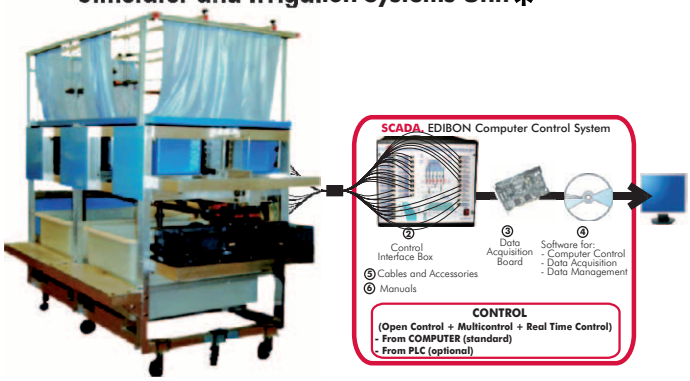
www.edibon.com/products/catalogues/en/units/foodwatertechnologies/esn-foodtechnology/ESN-FOOD_TECHNOLOGY.pdf



Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

www.edibon.com/products/index.php?area=environment&subarea=waterhandling&lang=en

ESHC. Computer Controlled **Hydrologic Systems, Rain Simulator and Irrigation Systems Unit** ✱

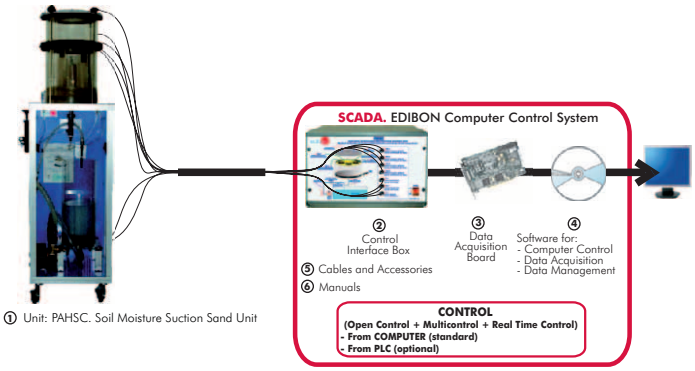


① Unit: ESHC. Hydrologic Systems, Rain Simulator and Irrigation Systems Unit

Available versions:

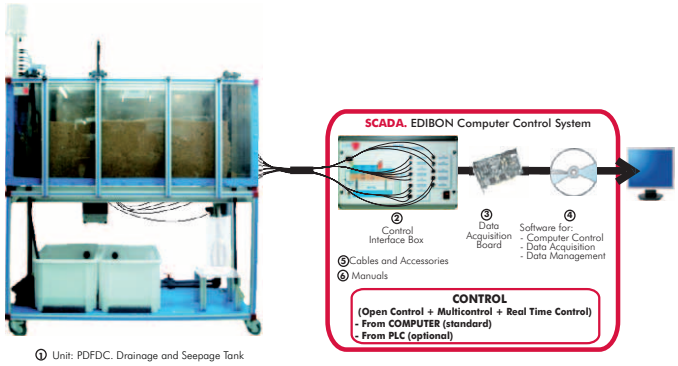
- ESHC (2x1m). Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1m).
- ESHC (4x2m). Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2m).

PAHSC. Computer Controlled **Soil Moisture Suction Sand Unit** ✱



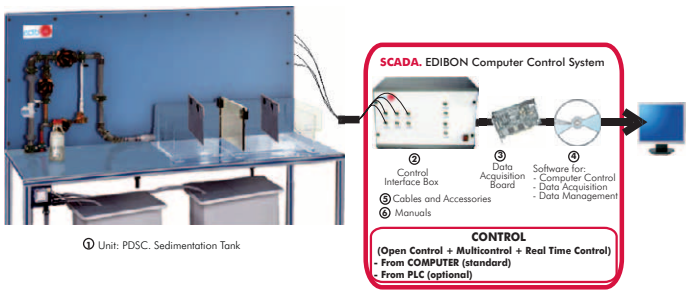
① Unit: PAHSC. Soil Moisture Suction Sand Unit

PDFDC. Computer Controlled **Drainage and Seepage Tank** ✱



① Unit: PDFDC. Drainage and Seepage Tank

PDSC. Computer Controlled **Sedimentation Tank** ✱



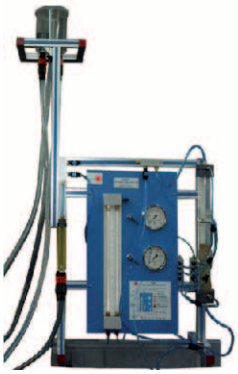
① Unit: PDSC. Sedimentation Tank

PL. **Demonstration Lysimeter**

PPD. **Drain Permeameter**

PEIF. **Filterability Index Unit**

PEFP. **Permeability/Fluidisation Studies Unit**



Other available Unit:

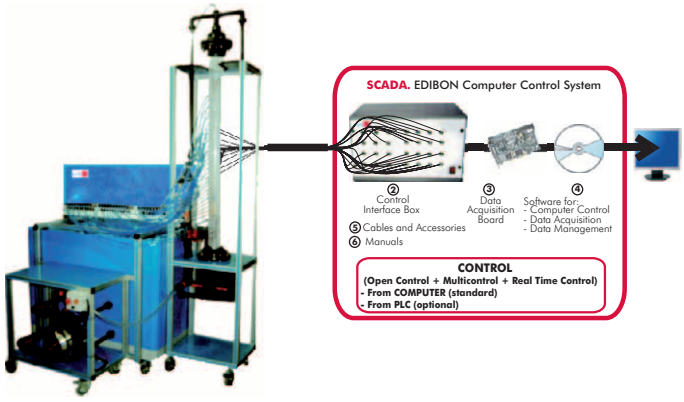
- HVFLM. **Mobile Bed and Flow Visualisation Unit** NEW

✱ Non computer controlled version available too.

13.2- Water Treatment

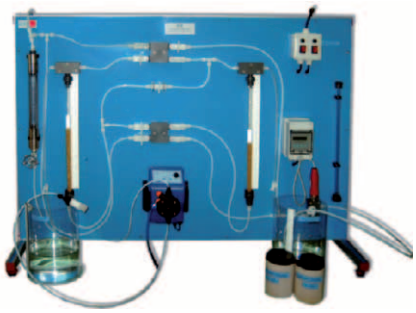
www.edibon.com/products/index.php?area=environment&subarea=watertreatment&lang=en

EFLPC. Computer Controlled **Deep Bed Filter Unit** ✱

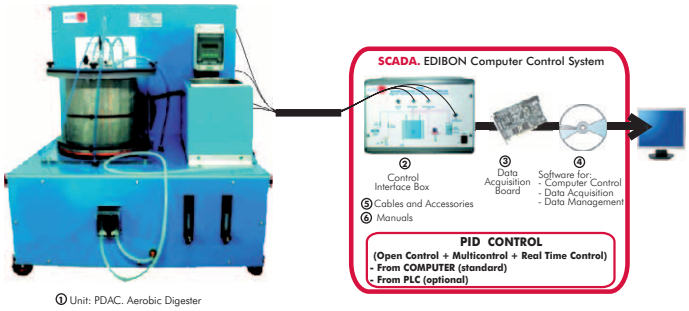


① Unit: EFLPC. Deep Bed Filter Unit

EII. **Ion Exchange Unit**

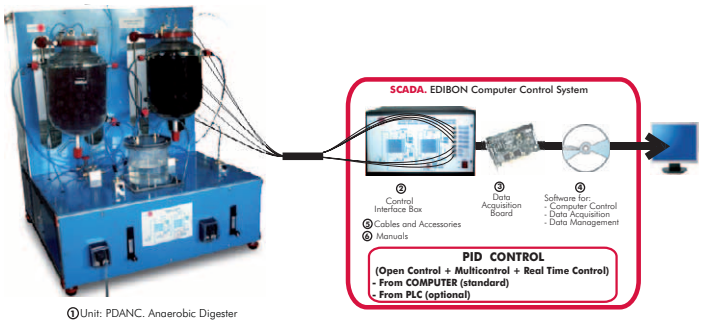


PDAC. Computer Controlled **Aerobic Digester** ✱



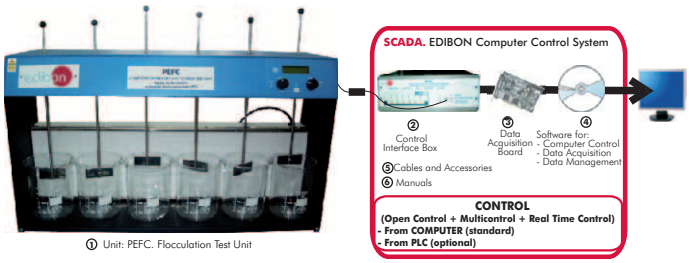
① Unit: PDAC. Aerobic Digester

PDANC. Computer Controlled **Anaerobic Digester** ✱



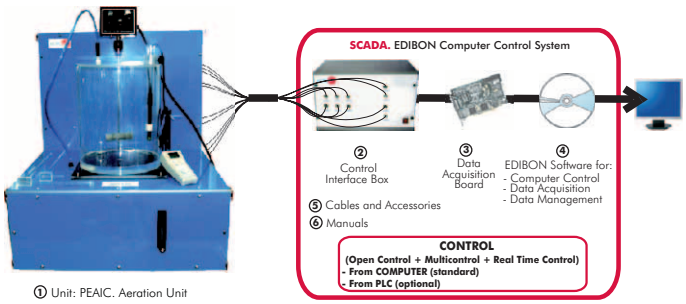
① Unit: PDANC. Anaerobic Digester

PEFC. Computer Controlled **Flocculation Test Unit** ✱



① Unit: PEFC. Flocculation Test Unit

PEAIC. Computer Controlled **Aeration Unit** ✱



① Unit: PEAIC. Aeration Unit

Other available Unit: NEW

-PPTAC. Computer Controlled **Water Treatment Plant**

-ROUC. Computer Controlled **Reverse Osmosis/Ultrafiltration Unit** (see page 75)

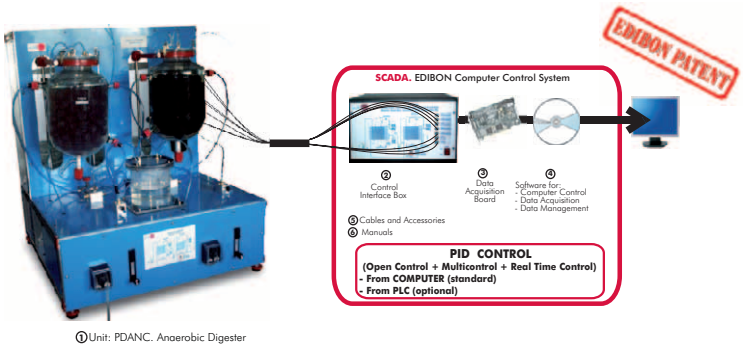
13.3- Pollution (Ground)

www.edibon.com/products/index.php?area=environment&subarea=pollutionground&lang=en

✱ Non computer controlled version available too.

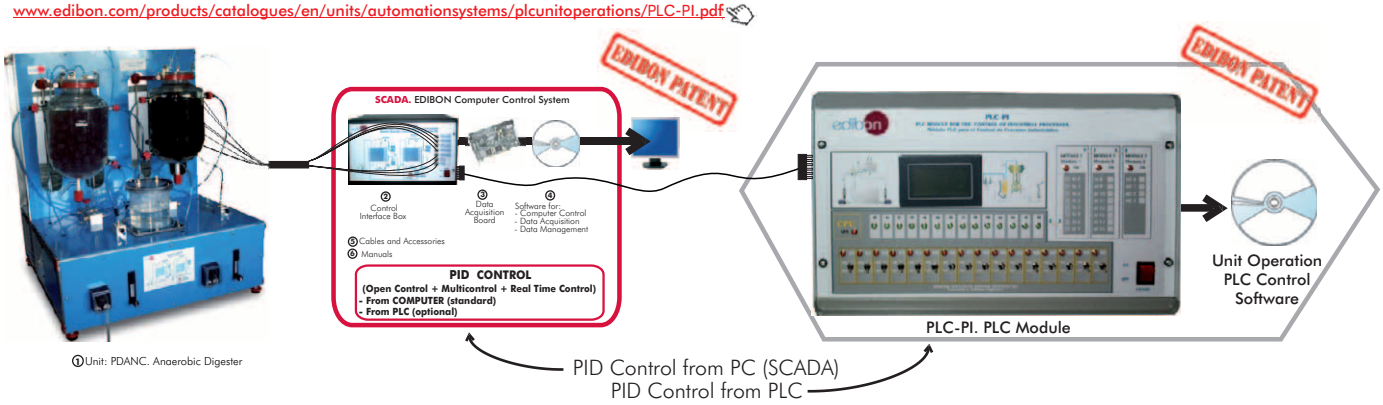
Environment control configurations possibilities

a) Control from PC (SCADA)



b) Control from PLC

www.edibon.com/products/catalogues/en/units/automationsystems/plcunitoperations/PLC-PI.pdf

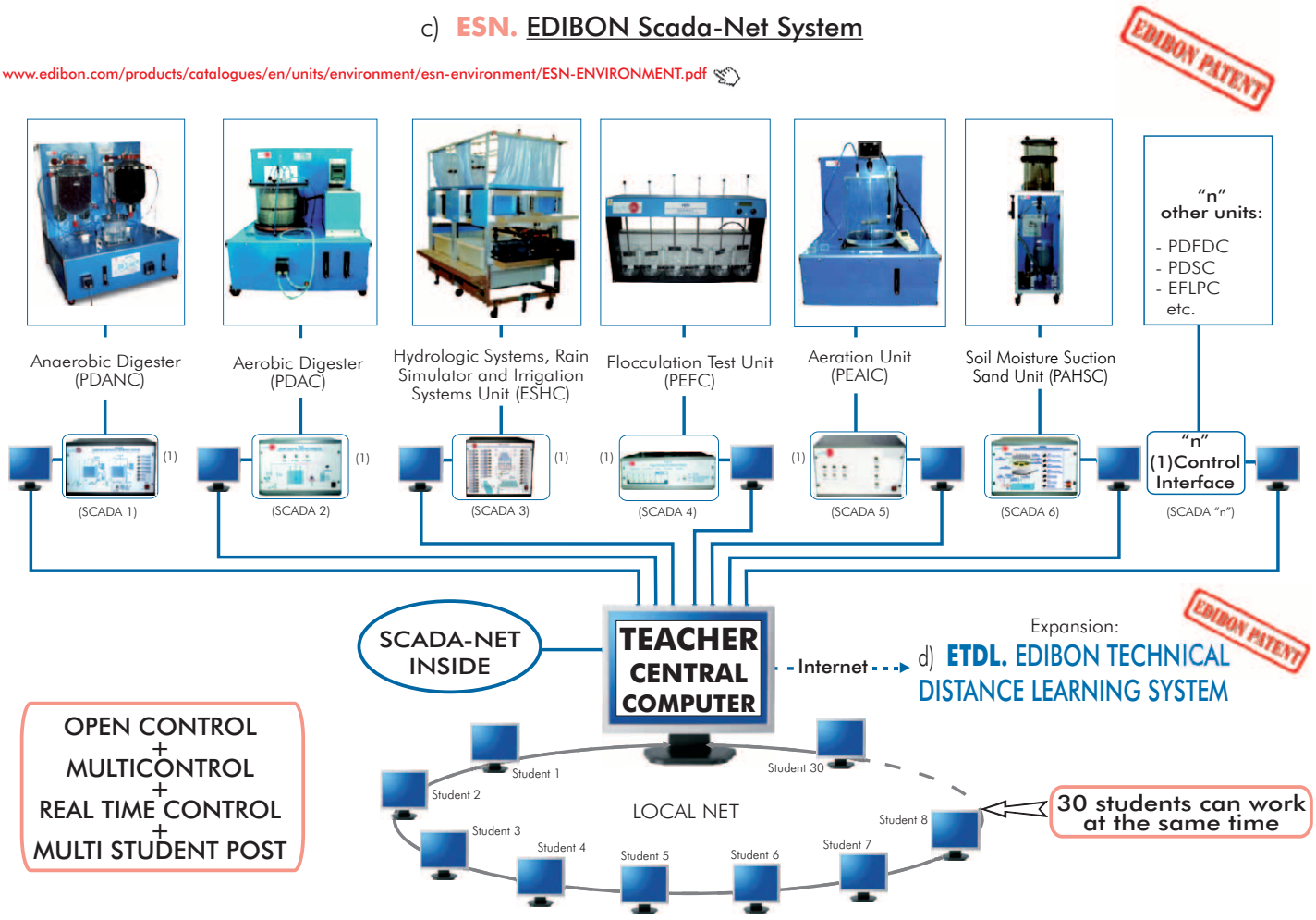


Units that can use Control from PC and PLC in this area:

ESHC, PAHSC, PDFDC, PDSC, HVFLM, EFLPC, PDAC, PDANC, PEFC, PEAIC, ROUC, PPTAC.

c) ESN. EDIBON Scada-Net System

www.edibon.com/products/catalogues/en/units/environment/esn-environment/ESN-ENVIRONMENT.pdf

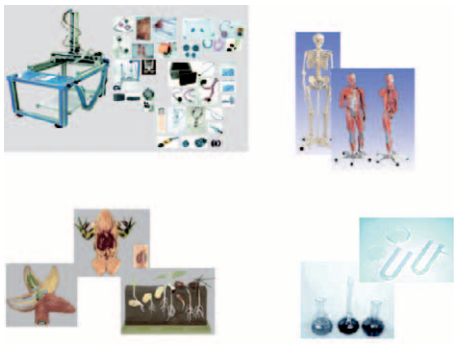


Note: The ESN system can use any EDIBON computer controlled unit, in all the 3 options as ESN-PC (only PC´s) or ESN-PLC (only PLC´s) or ESN-PCPLC (PC´s + PLC´s).

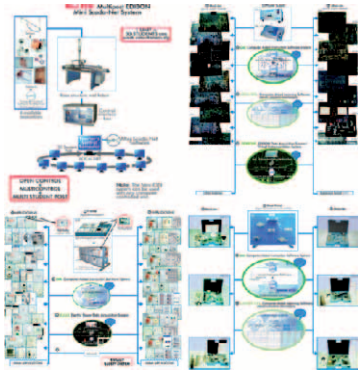
www.edibon.com/products/systems.php?lang=en

Physics

1SE. **Secondary Education**



1AD. **Advanced Physics Laboratory**



Electronics

2TV. **Technical and Vocational Education Electronics Laboratory**

2HE. **Higher Education Electronics Laboratory**

Telecommunications

3TV. **Technical and Vocational Education Telecommunications Laboratory**

3HE. **Higher Education Telecommunications Laboratory**

Electricity

4TV. **Technical and Vocational Education Electricity Laboratory**

4HE. **Higher Education Electricity Laboratory**

4EMTV. **Technical and Vocational Education Electrical Machines Laboratory**

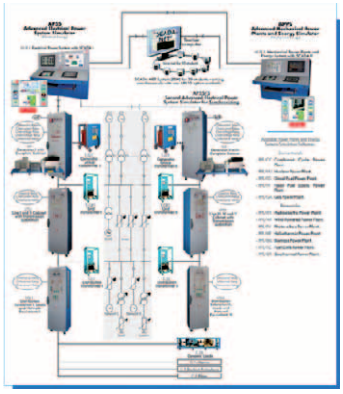
4EMAD. **Advanced Electrical Machines Laboratory**

www.edibon.com/products/systems.php?lang=en

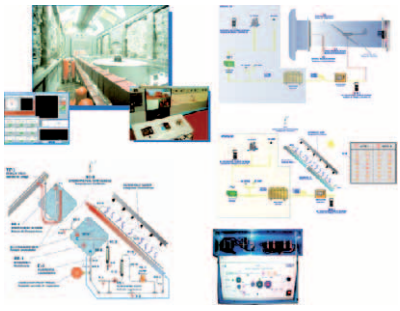
➤Energy

5TV. **Technical and Vocational Education Energy Laboratory**

5AD. **Advanced Energy Laboratory**



5TC. **Energy Training Center**



➤Renewable Energy

5RTV. **Technical and Vocational Education Renewable Energy Laboratory**

5RAD. **Advanced Renewable Energy Laboratory**

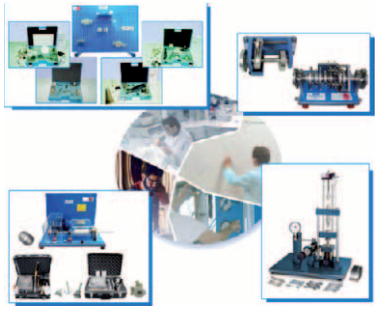
➤Automation and Systems

6TV. **Technical and Vocational Education Automation and Systems Laboratory**

6AD. **Advanced Automation and Systems Laboratory**

➤Mechanics and Materials

7TV. **Technical and Vocational Education Mechanics and Materials Laboratory**



7HE. **Higher Education Mechanics and Materials Laboratory**

➤Fluid Mechanics

8AD1. **Fluid Mechanics Laboratory (Phase 1)**

8AD2. **Fluid Mechanics Laboratory (Phase 2)**

8AD3. **Fluid Mechanics Laboratory (Phase 3)**

➤Thermodynamics and Thermotechnics

9AD1. **Thermodynamics and Thermotechnics Laboratory (Phase 1)**

9AD2. **Thermodynamics and Thermotechnics Laboratory (Phase 2)**

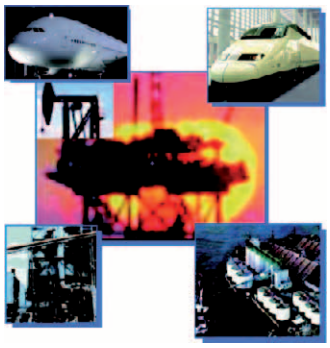
9AD3. **Thermodynamics and Thermotechnics Laboratory (Phase 3)**

➤Process Control

10G1. **General Process Control Laboratory (Phase 1)**

10G2. **General Process Control Laboratory (Phase 2)**

10PCTC. **Process Control and Maintenance Training Center**



10RC. **Regulation, Control and Process Control Laboratory**

➤Chemical Engineering

11TV. **Technical and Vocational Education Chemical Engineering Laboratory**

11HE. **Higher Education Chemical Engineering Laboratory**

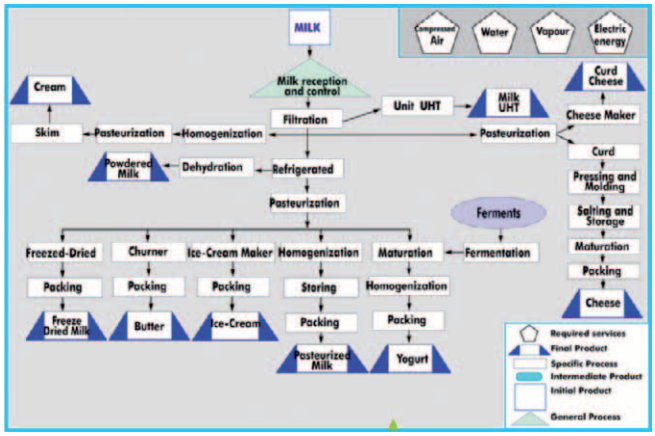
11PTC. **Petroleum Training Center**

12TV. Technical and Vocational Education Food Technology Laboratory

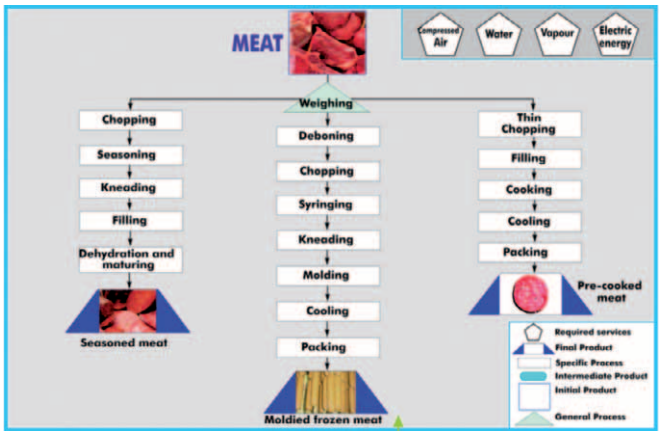
12HE. Higher Education Food Technology Laboratory

12PP. Food Technology: Pilot Plants

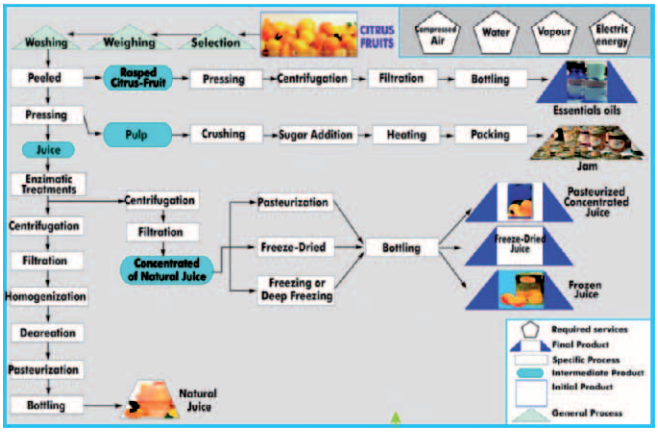
for **Dairy Products** (LE00)



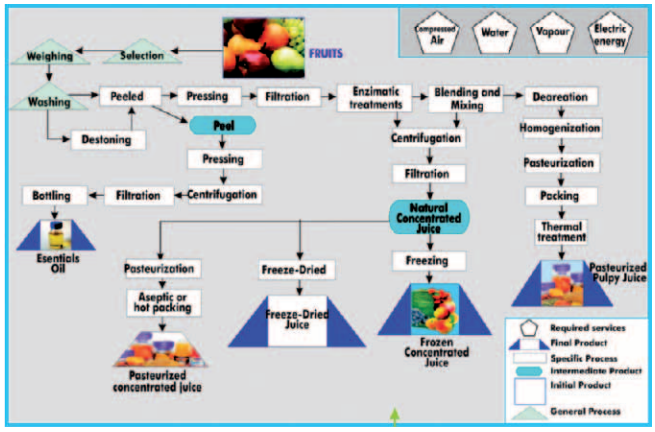
for **Meat** (CA00)



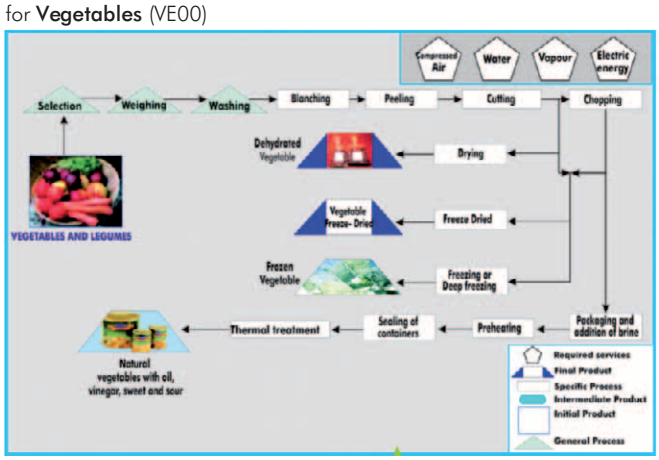
for **Citrus Fruits** (CI00)



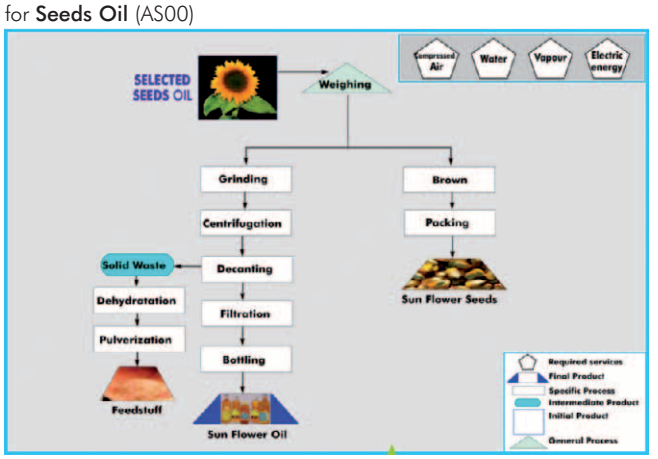
for **Fruits** (FR00)



for **Vegetables** (VE00)

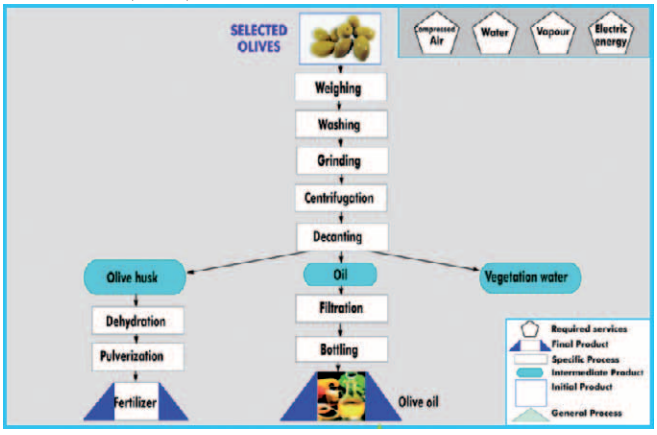


for **Seeds Oil** (AS00)

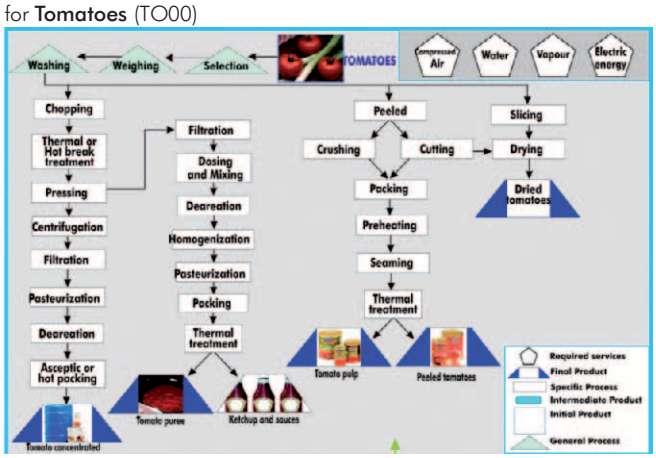


www.edibon.com/products/systems.php?lang=en

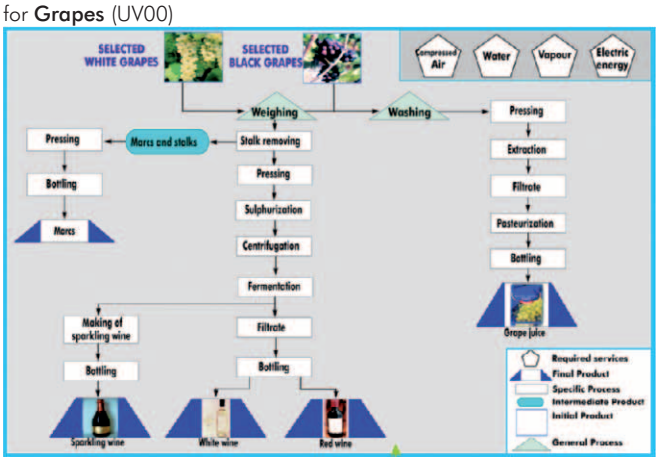
for **Olive Oil** (AC00)



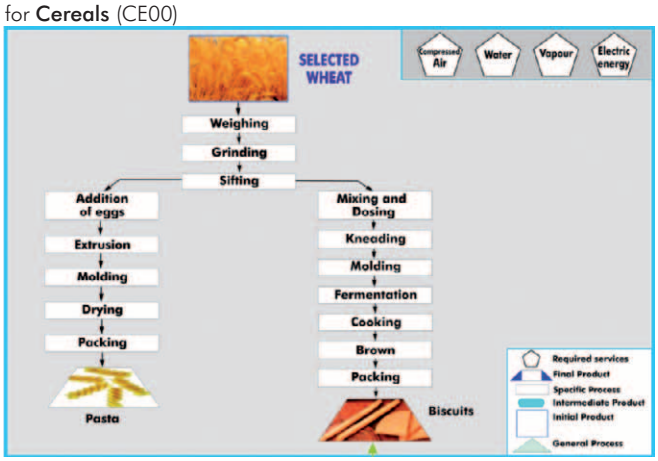
for **Tomatoes** (TO00)



for **Grapes** (UV00)



for **Cereals** (CE00)



➤Environment

13AD. **Advanced Environment Laboratory**

13DES. **Desalination Laboratory**

13CW. **Drinking and Handling Water Laboratory**

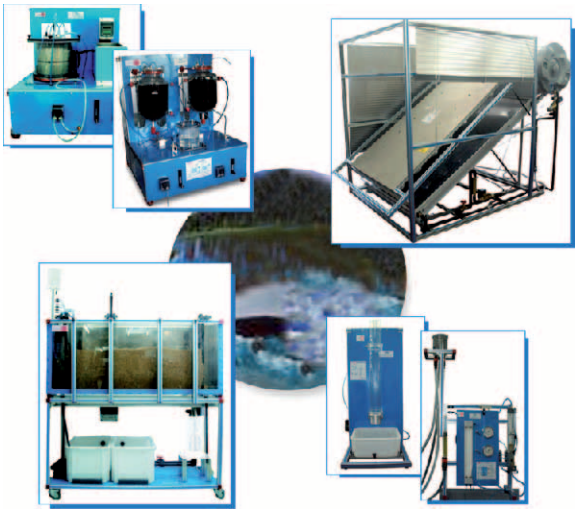
13DW. **Dirty Water Treatment Laboratory**

www.edibon.com/products/systems.php?lang=en

➤Special Laboratories

20SKILL. **New Technologies Technical Skills Center**

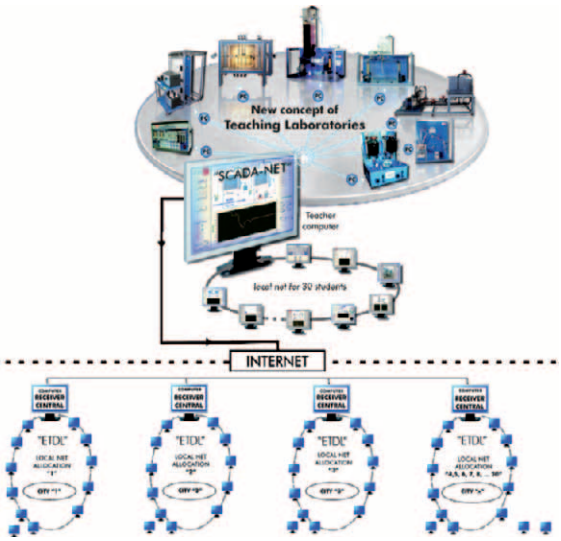
20GREEN. **Green Laboratory**



20AIRP. **Airport Laboratory**

20TTC. **Teachers Technical Training and Applied Research Center**

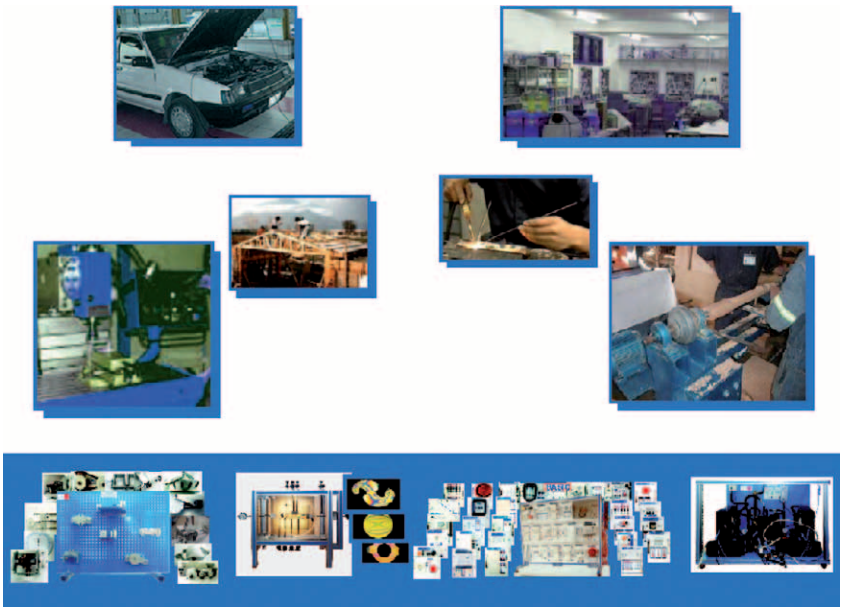
20TDL. **Technical Professional Distance Learning**



20MOBIL. **Mobile Units**

➤Technical Education Turn-Key Projects

Technical and Vocational Education Training Center (TVETC)



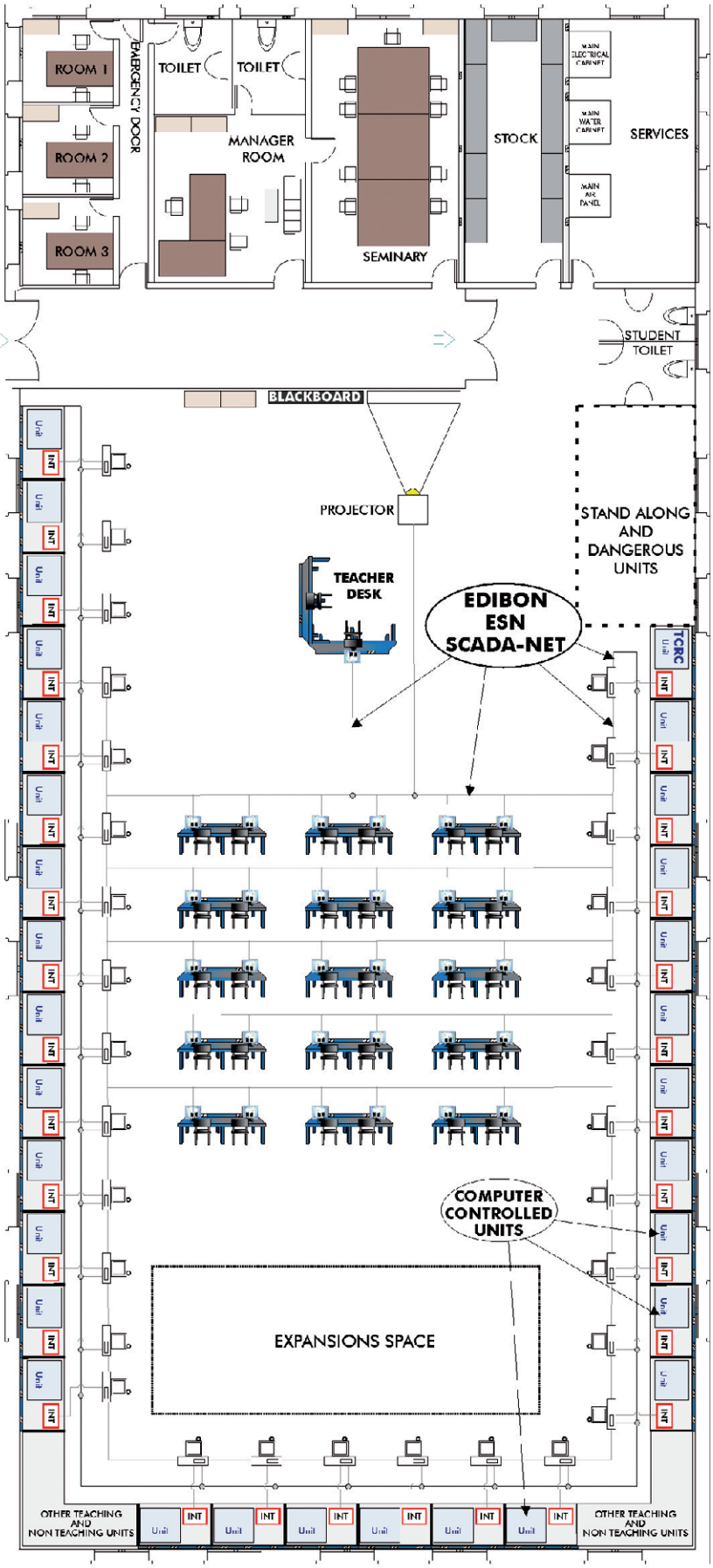
List of main Technical Specialities:

- 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 & AIR CONDITIONING.
- ETC.

Higher Technical Education Training Center (HTETC)

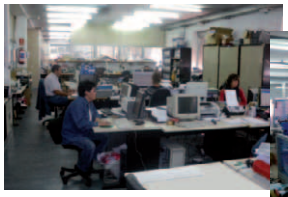
List of main technical Degrees \Departments \Careers:

- AERONAUTICS ENG.
- AGRICULTURAL ENG.
- AGRICULTURAL INDUSTRIES ENG.
- ARCHITECTURE.
- AUTOMATIC ENG.
- CHEMICAL ENG.
- CHEMISTRY.
- CIVIL ENG.
- COMPUTER SCIENCE & 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.
- TELECOMMUNICATION ENG.
- TEXTILE ENG.
- TOPOGRAPHYCAL ENG.
- ETC.


ROOM 1
ROOM 2
ROOM 3
EMERGENCY DOOR
TOILET
TOILET
MANAGER ROOM
SEMINARY
STOCK
SERVICES
STUDENT TOILET
BLACKBOARD
PROJECTOR
TEACHER DESK
EDIBON ESN SCADA-NET
STAND ALONG AND DANGEROUS UNITS
COMPUTER CONTROLLED UNITS
EXPANSIONS SPACE
OTHER TEACHING AND NON TEACHING UNITS
OTHER TEACHING AND NON TEACHING UNITS
Web-cam
Computer for each Teaching Unit
Teacher and Student Desk with computers
Table for Teaching Unit
Teaching Unit
Electronic Interface
Cupboard
EDIBON ESN SCADA-NET
Table office
Shelves
Table

Our main factory

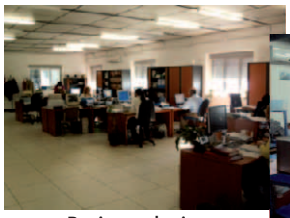
Global Factory View



R&D
Research & Development

Quality Control

Training and Show Room



Projects design

One of the Manufacturing Plants

Other Facilities that EDIBON offers

Laboratories and Special Units design:

- Complete design from one or various laboratories and workshops in any Technical Training Center, at Higher, Technical, Vocational and Secondary Education level.

  Our start-up point goes from the Center name, location, educational level and the different degrees offering at the moment or in the future by the Training Center.

  We recommend consult to EDIBON in every case, for designing technically the project.

- Custom made units, for teaching or research purpose, using PID control from Computer and/or PID control from PLC.

Complete Training Center Design:

- Complete design of a Technical School or University from the ground up. We offer:
  - Feasibility study and/or building and urbanization design, and/or construction management, etc., in cooperation with specialized partner companies.
  - Building construction, urbanism, etc., with local construction companies.
  - Workshops and Laboratories design with complete supply, installation, starting-up, training, technology transfer, etc.
  - In collaboration with experts in education we can also establish the curricula, structure and organization for the future Center.
  - Different types of financing available.
- Interconnection between different Campuses or Centers located in different cities.

  The ETDL System (EDIBON Technical Distance Learning), allows having the laboratories in one city and the students can working with the units in the same city, or from any other city in the country. Being able to operate and manage the equipment remotely.

Financing for Private and Public Institutions:

EDIBON can offer the proper financing facilities for each particular case, by using:

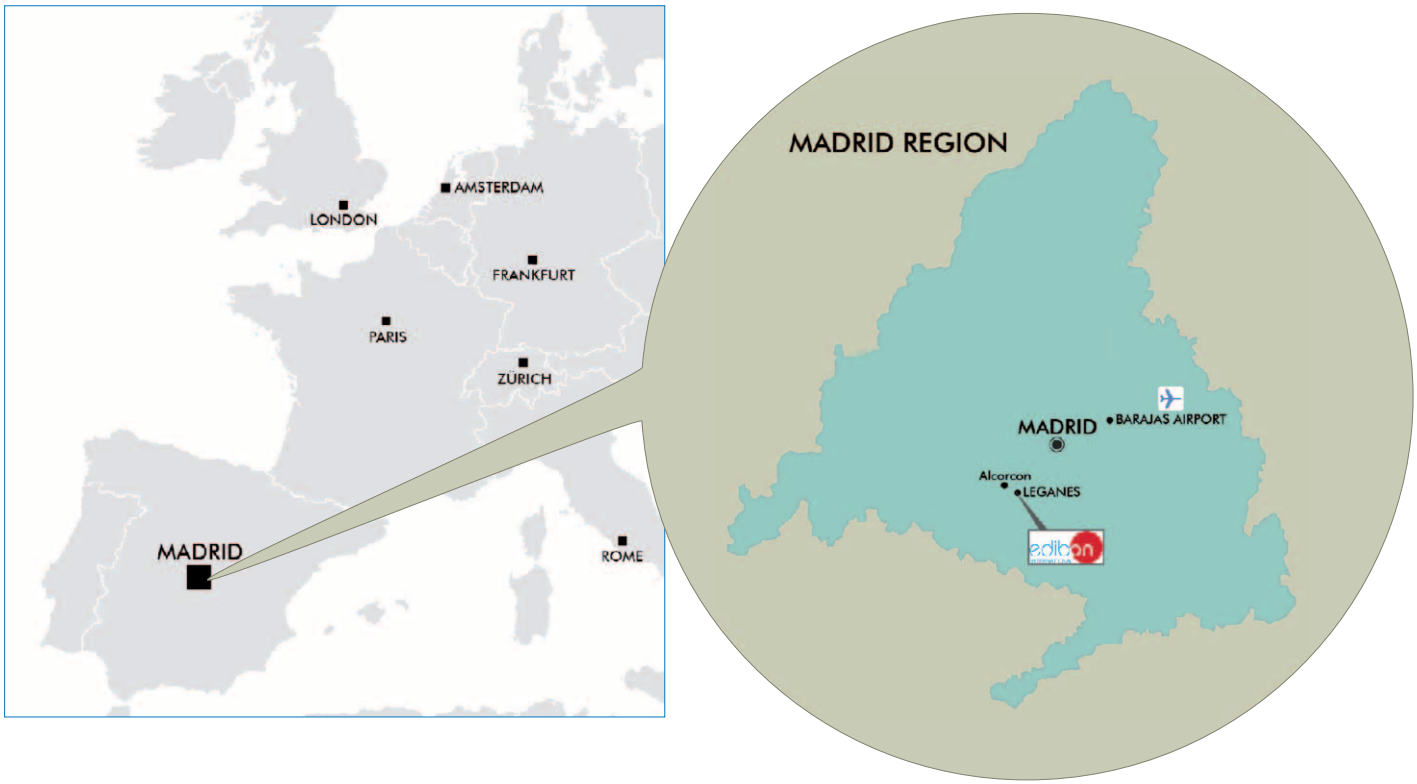
- Grants. - Soft loans. - Commercial loans. - Barter. - etc.

Training Courses for companies:

EDIBON not only offers the training and the installation of all the units supplied, but also offers specialized training courses using real units with "PID control in real time" and industrial PID control systems using PLC for:

- Oil companies.
- Energy companies.

... or any type of company that would require them.


AMSTERDAM
LONDON
FRANKFURT
PARIS
ZÜRICH
MADRID
ROME
MADRID REGION
MADRID
BARAJAS AIRPORT
Alcorcon
LEGANES
edibon


ALCOBENDAS
BARAJAS
ARAVACA
POZUELO DE ALARCÓN
MADRID
COSLADA
ALCORCÓN
LEGANÉS
GETAFE
edibon


Lines
Nuevos Ministerios/Aeropuerto
Hospital del Norte/Puerta del Sur
Symbols
Interchange station
Location of Airport
METRO
AEROPUERTO T4
Barajas
Aeropuerto T1 T2 T3
Campo de las Naciones
Mar de Cristal
Pinar del Rey
Colombia
Nuevos Ministerios
Gregorio Marañón
Tribunal
Alonso Martinez
Plaza de España
Príncipe Pío
Lago
Batán
Casa de Campo
Colonia Jardín
Aviación Española
Cuatro Vientos
JOAQUÍN VILUMBRALES
SOL
METRO
Joaquin Vilumbrales
Av de los Castillos
Calle del Petróleo
Fitnessdromo
edibon
Polígono Viña Grande
Calle de la Electricidad
Calle del Agua
Agencia Estatal de Administración Tributaria
Av del Pinar
Av de los Castillos

edibon
INTERNATIONAL

C/ Del Agua, 14.
Polígono Industrial San José de Valderas.
28918 Leganés (Madrid). SPAIN.
Phone +34 91 619 93 63
Fax +34 91 619 86 47
edibon@edibon.com
www.edibon.com

REPRESENTATIVE:

ISO 9000: Quality Management
(for Design, Manufacturing, Commercialization and After-sales service)

European Union Certificate
(total safety)

Certificates ISO 14000 and
ECO-Management and Audit Scheme
(environmental management)

Worlddidac Quality Charter Certificate
(Worlddidac Member)