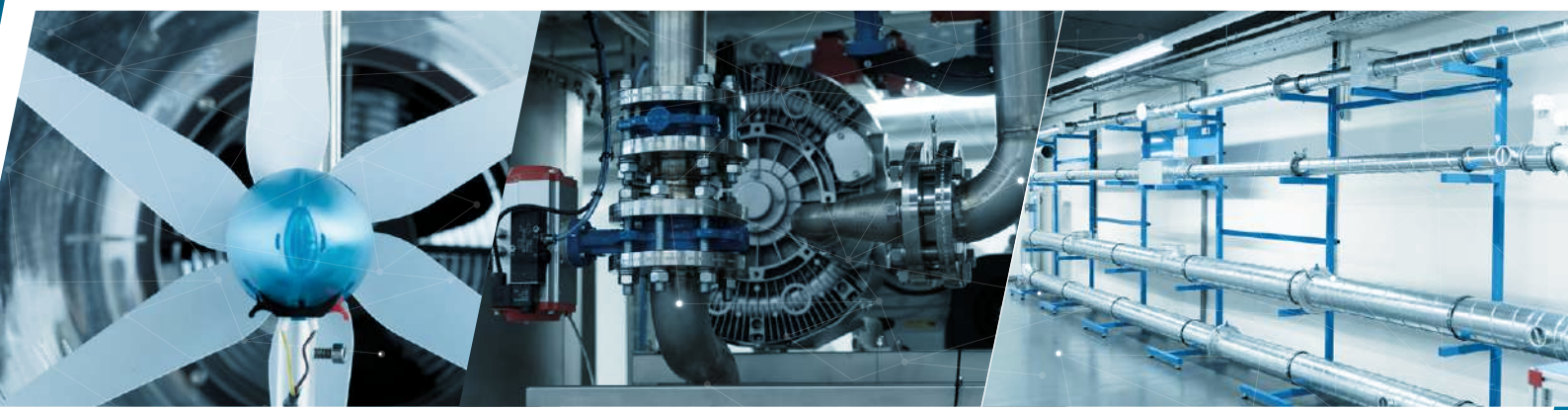
edibon

INNOVATING IN TECHNICAL TEACHING AND RESEARCH EQUIPMENT SINCE 1978

SCADA

FULL CUSTOMER SERVICES



100% OWN DESIGN AND MANUFACTURING

www.edibon.com

ABOUT US

WHO WE ARE

EDIBON is a worldwide benchmark company, with 45 years of experience in teaching and research equipment for engineering and technical education.

MISSION

Create the best product with the latest technology available in the market.

VISSION

Consolidate the company's leadership worldwide.

VALUES

Creation of a culture of responsibility, respect, equality, perseverance and environmental protection.

OUR HISTORY

1978
Family business founded in Madrid, (SPAIN) dedicated to work as distributors for other manufacturers.

1981
First export to Mexico.

1982
Start of our own range of products manufacture.

1984
Design of our first unit with SCADA.

1987
We moved our headquarters to San José Street, 13, Alcorcón.

1994
Development of our first EDIBON SCADA-NET (ESN).

2005
We opened the first branch in the United States, located in Atlanta (Georgia), EDIBON USA, LLC.

2007
Design of the first Industrial Teaching Unit.

2008
We moved to our current headquarters in Agua Street, 14, Leganés (Madrid).

2013
We opened a branch in India.

2014
We bought a plot of 15,000 m² in the Technology and Science Park of Móstoles, where our new facilities are built.

2016
We started to build our new 30,000 m² factory in the Technology and Science Park of Móstoles.

2019
Inauguration of our new LEED certified factory of 30,000 m².

NOW
We currently manufacture and export to 150 countries around the world.

EDIBON IN THE WORLD

Some countries that already use EDIBON Technology:

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

HIGHER EDUCATION

TECHNICAL AND VOCATIONAL TRAINING

ENGINEERING AND TECHNICAL TRAINING CENTERS

RESEARCH CENTERS

Ask us for further information: *www.edibon.com/en/content/contact-us*

OUR FACILITIES

New and advanced 30.000 m² factory to design, innovate, manufacture and perform quality control procedure.

R+D+i department

Manufacturing plant

Quality control

OUR EXPERIENCE

Some customers and partners:

HARVARD UNIVERSITY · CSIC · SIT SINGAPORE INSTITUTE OF TECHNOLOGY · EPFL ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE · CUNY The City University of New York · UNIVERSIDAD NACIONAL DE COLOMBIA · CHARLES DARWIN UNIVERSITY · THE UNIVERSITY OF HONG KONG · MIT Massachusetts Institute of Technology · Novosibirsk State University THE REAL SCIENCE · POLITÉCNICA

What do they say about us?

I would definitely recommend EDIBON INTERNATIONAL for the personalized treatment, the solutions provided for updating the laboratory with very versalite teaching units and with good documentation, the continuous advice on the design of the proposal, as well as the deadlines for the shipment and installation.

Joaquín Moreno Marchal
University of Cadiz.
[SPAIN]

On behalf of AINS SHAMS UNIVERSITY, I´d like to thank EDIBON INTERNATIONAL for their cooperation and understanding of the situation from the beginning of the project, as well as the negotiation about the equipment till the end and the fast shipping service they provided.

Dr. Walid Torky
Ains Shams University.
[EGYPT]

QUALITY & WARRANTIES

In the company there is a great interest in quality and good management:

LRQA CERTIFIED ISO 9001 · LRQA CERTIFIED ISO 14001 · LRQA CERTIFIED ISO 45001 · CE · ASEE · INNOVATIVE SME · Sercobe · worlddidac MEMBER

The purchase of an EDIBON unit implies a great responsibility and commitment for us:

WARRANTY 5-YEAR edibon

SPARE PARTS AVAILABILITY 15-YEAR edibon

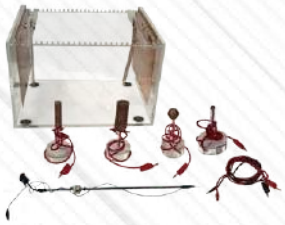
TECHNICAL TEACHING AND RESEARCH UNITS

1.1. 3D PHYSICS

EFAC. Computer Controlled Three Dimensions (3D) Physics

FUB. Base Frame and Robot for EFAC

★ ***REQUIRED ELEMENTS FOR FUB*** *(At least one is required):*



FCE. Electric Fields Study Set

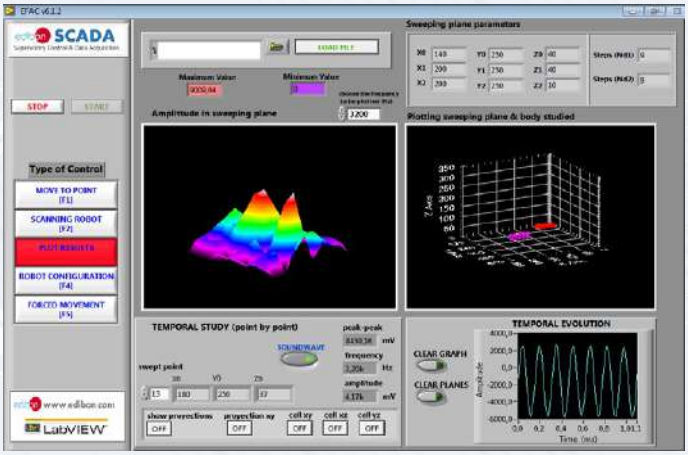
FCM. Magnetic Field Study Set

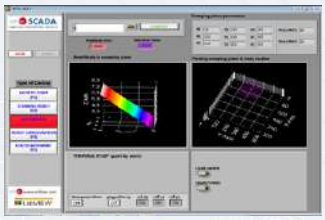
FM. Mechanics Study Set

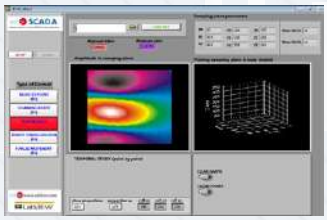
FAC. Acoustics Study Set

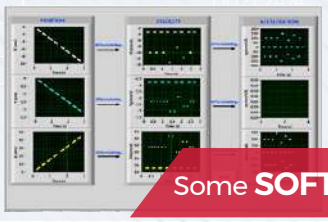
FOP. Optics Study Set

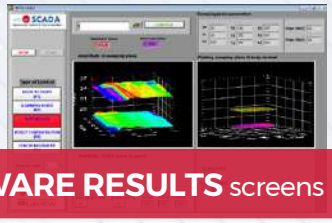
FTT. Thermodynamics Study Set











Some **SOFTWARE RESULTS** screens

2.1. POWER SUPPLIES, MEASUREMENT EQUIPMENT AND ACCESSORIES

LIEBA. Basic Electronics and Electricity Laboratory

Complete configuration example for LIEBA

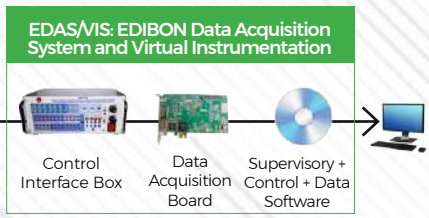
FACO. Power Supply

EBC100. Base Unit, with built-in power supply

Some **SOFTWARE RESULTS** screens

EDAS/VIS. EDIBON Data Acquisition System and Virtual Instrumentation

Example of Teaching Unit: Module "N-M1" of Basic Electronics



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

2.2. KITS FOR CIRCUITS ASSEMBLY

M-KITS. Basic Electronics and Electricity Assembly Kits:

Complete configuration example for M-KITS

★ *UNITS AVAILABLE*

N-M15.	Own Development Module.
M1/KIT.	Direct Current (DC) Circuits Kit.
M2/KIT.	Alternating Current (AC) Circuits Kit.
M3/KIT.	Semiconductors I Kit.
M4/KIT.	Semiconductors II Kit.
M5/KIT.	Power Supplies Kit.
M6/KIT.	Oscillators Kit.
M7/KIT.	Operational Amplifiers Kit.
M8/KIT.	Filters Kit.
M9/KIT.	Power Electronics Kit.
M10/KIT.	Digital Systems and Converters Kit.
M11/KIT.	Digital Electronic Fundamentals Kit.
M12/KIT.	Basic Combinational Circuits Kit.
M13/KIT.	Basic Sequential Circuits Kit.
M14/KIT.	Optoelectronics Kit.
M16/KIT.	Electric Networks Kit.
M18/KIT.	Three-phase Circuits Kit.

2.3. THEORETICAL - PRACTICAL FUNDAMENTALS

2.3.1. BASIC ELECTRICAL LAWS CONCEPTS

LIEBA. Basic Electronics and Electricity Laboratory

N-M1.	Direct Current (DC) Circuits Module.
N-M2.	Alternating Current (AC) Circuits Module.
N-M16.	Electric Networks Module.
N-M17.	Electromagnetism Module.
N-M18.	Three-phase Circuits Module.

N-M17. Electromagnetism Module.

M99-6. Electronics for Motors and Generators Unit

2.3.2. ANALOG ELECTRONICS

LIEBA. Basic Electronics and Electricity Laboratory

N-M6. Oscillators Module.

N-M7. Operational Amplifiers Module.

N-M8. Filters Module.

N-M6. Oscillators Module.

M99. Analog Circuits Unit

2.3.3. DIGITAL ELECTRONICS

LIEBA. Basic Electronics and Electricity Laboratory

N-M60. Analog/Digital Converters Module.

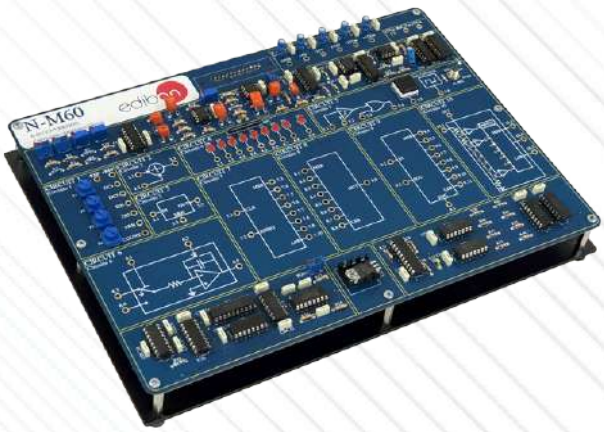
N-M61. Digital/Analog Converters Module.

N-M10. Digital Systems & Converters Module.

N-M11. Digital Electronics Fundamentals Module.

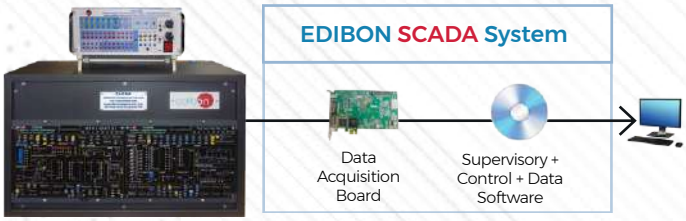
N-M12. Basic Combinational Circuits Module.

N-M13. Basic Sequential Circuits Module.

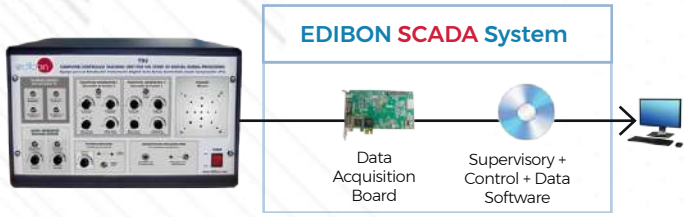


N-M60. Analog/Digital Converters Module.

CADDA. Computer Controlled A/D and D/A Converters Unit



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



2.3.4. SEMICONDUCTORS

LIEBA. Basic Electronics and Electricity Laboratory

- **N-M3**. Semiconductors I Module.
- **N-M4**. Semiconductors II Module.
- **N-M14**. Optoelectronics Module.

N-M14. Optoelectronics Module.

2.3.5. INSTRUMENTATION & CONTROL

LIEBA. Basic Electronics and Electricity Laboratory

- **M41**. Resistance Transducers.
- **M44**. Applications of Light.
- **M45**. Linear Position and Force.
- **M46**. Environmental Measurements.
- **M47**. Rotational Speed & Position Control.
- **M48**. Sound Measurements.
- **N-M49**. Applications of Temperature and Pressure Module.

M45. Linear Position and Force.

2.3.6. POWER ELECTRONICS (FUNDAMENTALS)

LIEBA. Basic Electronics and Electricity Laboratory

- **N-M9**. Power Electronics Module.
- **N-M5**. Power Supplies Module.

N-M9. Power Electronics Module.

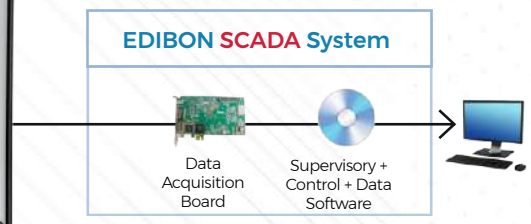
2.4. INDUSTRIAL ELECTRONICS

2.4.1. INSTRUMENTATION & CONTROL

SPC. Weighing System, with Computer Data Acquisition

SCSP. Pressure Sensors Calibration System

BS. Modular System for the Study of Sensors



BSPC. Computer Controlled Base Unit for BS

★ ***ADDITIONAL RECOMMENDED ELEMENTS FOR BSPC***

BS1. Vibrations and/or Deformations Test Module

BS2. Temperature Test Module

BS3. Pressure Test Module

BS4. Flow Test Module

BS5. Ovens Test Module

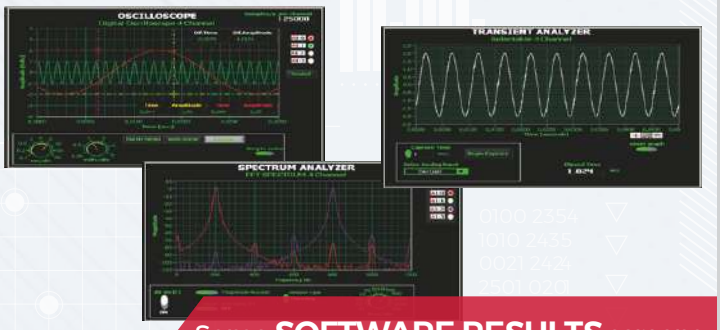
BS6. Liquid level Test Module

BS7. Tachometer Test Module

BS8. Proximity Test Module

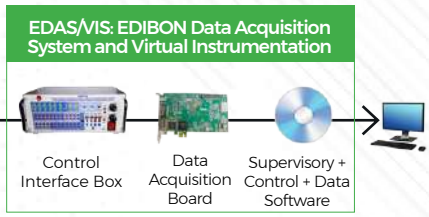
BS9. Pneumatic Test Module

BS10. Light Test Module



Some **SOFTWARE RESULTS** screens

SAIT. Transducers and Instrumentation Unit



RYC/B. Basic Teaching Unit for the Study of Regulation and Control

RYC/T. Computer Controlled Modular Control and Regulation Unit

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

★ *ADDITIONAL RECOMMENDED ELEMENTS FOR RYC*

RYC-BB. Ball and Beam Module

RYC-SM. DC Servo Motor Module

RYC-TAR. Air Flow Temperature Control Module

RYC-PI. Inverted Pendulum Control Module

RYC-CLM. Magnetic Levitation Control Module

RYC-TAG. Water Flow Temperature Control Module

RYC-TE. Temperature Control Module

RYC-P. Pressure Control Module

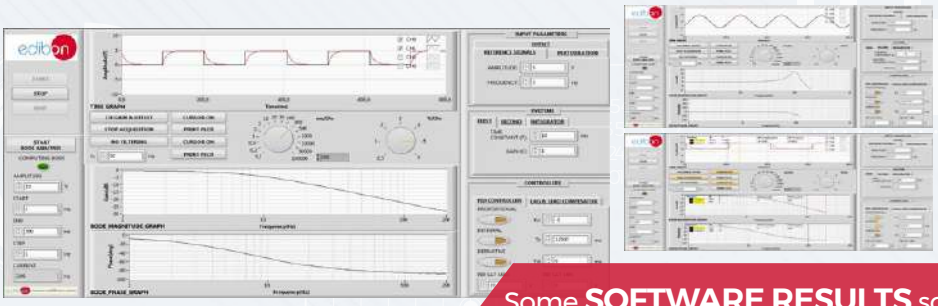
RYC-N. Level Control Module

RYC-C. Flow Rate Control Module

RYC-I. Luminosity Control Module

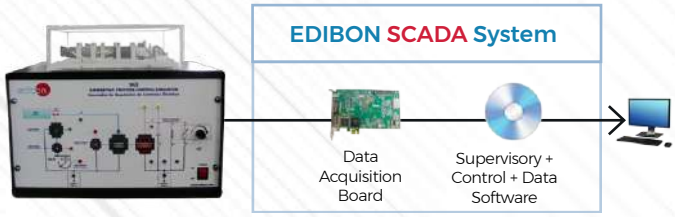
RYC-pH. pH Control Module

RYC-CP. Position Control Module



Some **SOFTWARE RESULTS** screens

SCE. Computer Controlled Generating Stations Control and Regulation Simulator



2.4.2. ELECTRICAL SERVOMOTORS

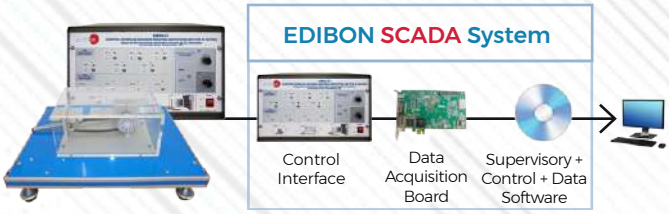
AE-SMI. Servomotor Industrial Application

SMI-UB. Servomotor Base Unit

AE-BMI. Brushless Motor Industrial Application

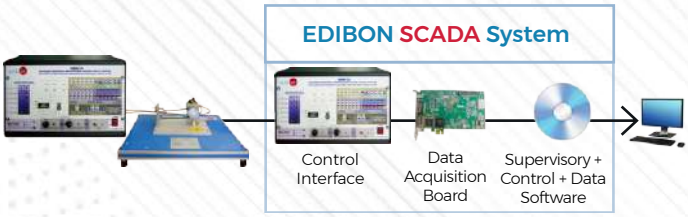
BMI-UB. Brushless Motor Base Unit

SERIN/CC. Computer Controlled Advanced Industrial Servosystem Unit (for DC Motors)



SERIN/CCB. Servosystems Basic Unit for DC Motors

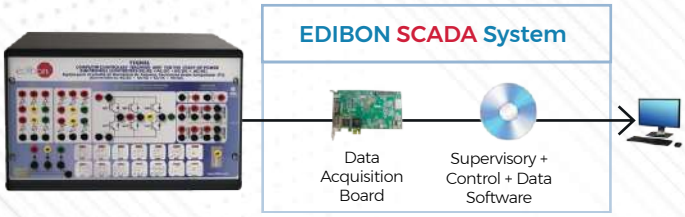
SERIN/CA. Computer Controlled Advanced Industrial Servosystems Unit (for AC Motors)



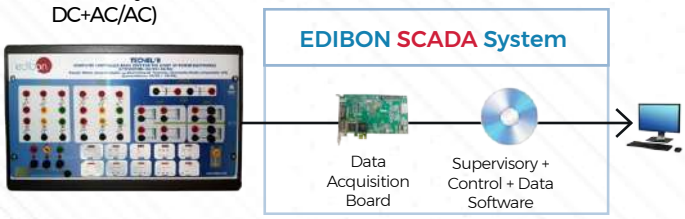
AEL-SERIN/CA-1KW. 1 kW AC Industrial Servomotor Application

2.4.3. POWER ELECTRONICS

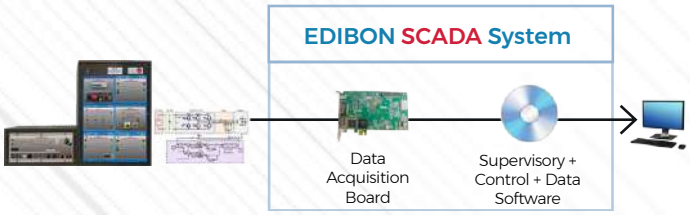
TECNEL. Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTS)



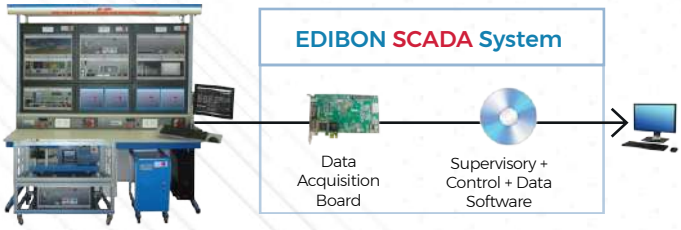
TECNEL/B. Computer Controlled Basic Teaching Unit for the Study of Power Electronics (no IGBTS). (Converters: AC/DC+AC/AC)



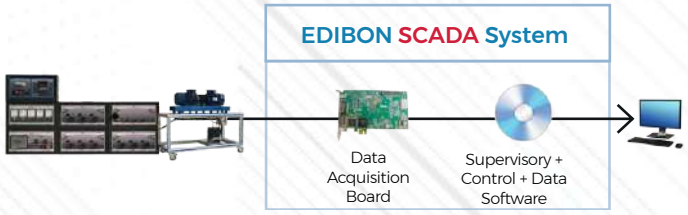
AEL-PEC. Computer Controlled Advanced Power Electronics Application



AEL-WPP. Computer Controlled Wind Power Plants with Double Feed Induction Generator Application

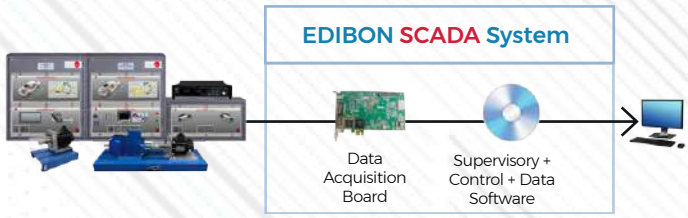


AEL-WPPIC. Computer Controlled Wind Power Plants Application with Induction Generator



2.5. AUTOMOTIVE ELECTRONICS

AEL-EHVC. Computer Controlled Hybrid and Electric Vehicles Application



AV-EC. Automotive Fundamental Electronic Circuits Unit

AV-ELC. Automotive Fundamental Electrical Circuits Unit

AV-A. Automotive Actuators Unit

AV-WW. Automotive Wiper Washer Unit

AV-ECC. Automotive Engine Cooling Circuit Unit

AV-AC. Automotive Auxiliary Components Unit

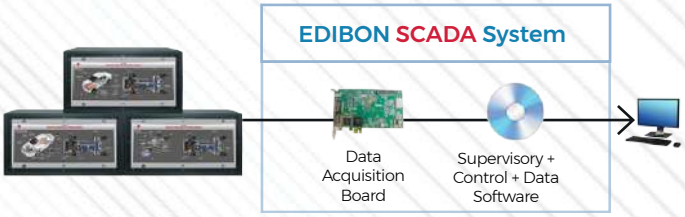
AV-ECD. Automotive Electronic Control Device Unit

AV-S. Automotive Sensors Unit

AV-SCS. Automotive Starting and Charging Systems unit

AV-GE. Automotive Electric Generation Unit

AV-HYB. Computer Controlled Automotive Hybrid Simulation Unit



3 COMMUNICATIONS

3.1. POWER SUPPLIES, MEASUREMENT EQUIPMENT AND ACCESSORIES

LICOMBA. Communications Laboratory

Complete configuration example for LICOMBA

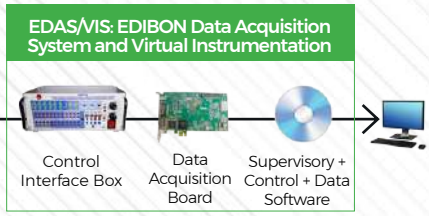
FACO. Power Supply

EBC100. Base Unit, with built-in power supply

Some **SOFTWARE RESULTS** screens

EDAS/VIS. EDIBON Data Acquisition System and Virtual Instrumentation

Example of Teaching Unit: Module "N-M1" of Basic Electronics



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

3.2. THEORETICAL - PRACTICAL FUNDAMENTALS

3.2.1. CODING, MODULATION AND SIGNAL PROCESSING THEORY

EMDA/A. Analog Modulations Unit

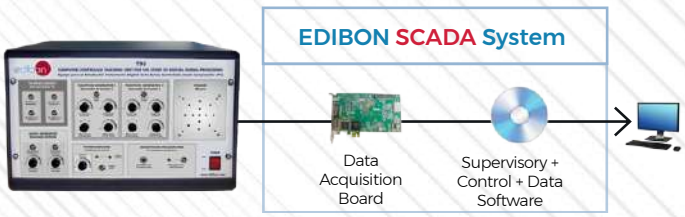
EMDA/D. Digital Modulations Unit

EMDA/P. Pulse Modulations Unit

ELT. Transmission Lines Unit

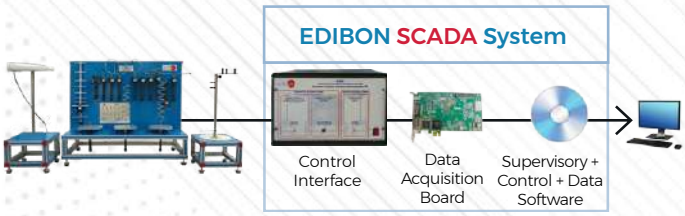
EDICOM6. Optical Fibre Transmission and Reception

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

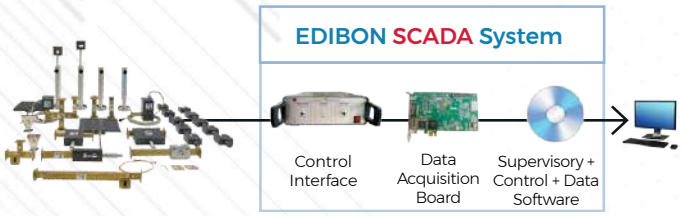


3.2.2. ANTENNA AND MICROWAVE THEORY

EANC. Computer Controlled Antenna Unit



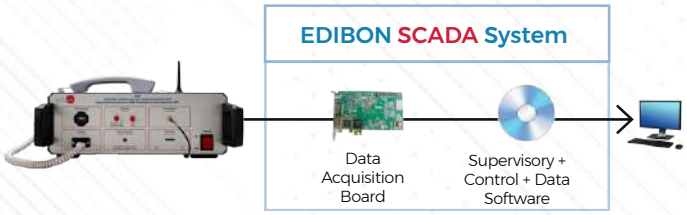
EMIC. Computer Controlled Microwave Unit



3.3. APPLIED COMMUNICATIONS

CODITEL. Telephony Systems Unit

ETM. Computer Controlled GSM Communications Unit

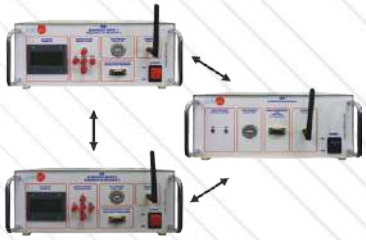


ESA. Satellite Unit

ERA. Radar Unit

EGPS. GPS Unit

EBL. Bluetooth Unit



ELAN. Lan Network Unit

4 ELECTRICITY

4.1. ELECTRICAL INSTALLATIONS

4.1.1. HOME ELECTRICAL INSTALLATIONS

AEL-1. Electrical Installations Laboratory

AEL-AD13.	Entry Phone Application.
AEL-AD14.	Audio and Video Entry Phone Application.
AEL-AD6A.	Luminosity Control Application.
AEL-AD6B.	Basic Luminosity Control Application.
AEL-AD24.	Position Switches Application.
AEL-AD5.	Lighting Application with Timer Switch.
AEL-AI13-E.	Electrotechnics Application (Lighting).
AEL-AE4.	Differential Automatic Switches Application.
AEL-AD9A.	Heating Control Application.
AEL-AD9B.	Basic Heating Control Application.

Configuration example of AEL-1 - Electrical Installations Laboratory

4.1.2. INDUSTRIAL ELECTRICAL INSTALLATIONS

4.1.2.1. MANEUVER CONTROL AND DRIVES

AEL-CM1.	Logical Control Operations Application.
AEL-CM2.	Application of Manual Starters and Velocity Commutators with Asynchronous Motors.
AEL-CM3.	Automatic Control Operations II Application.
AEL-CM4.	Automatic Control Operations with Contactors and Sensors IV Application.
AEL-MED.	Industrial Installations Monitoring Application.
AEL-AI13-A.	Electrotechnics Application (RLC Circuits).

4.1.2.2. ELECTRICAL RISKS AND PROTECTIONS

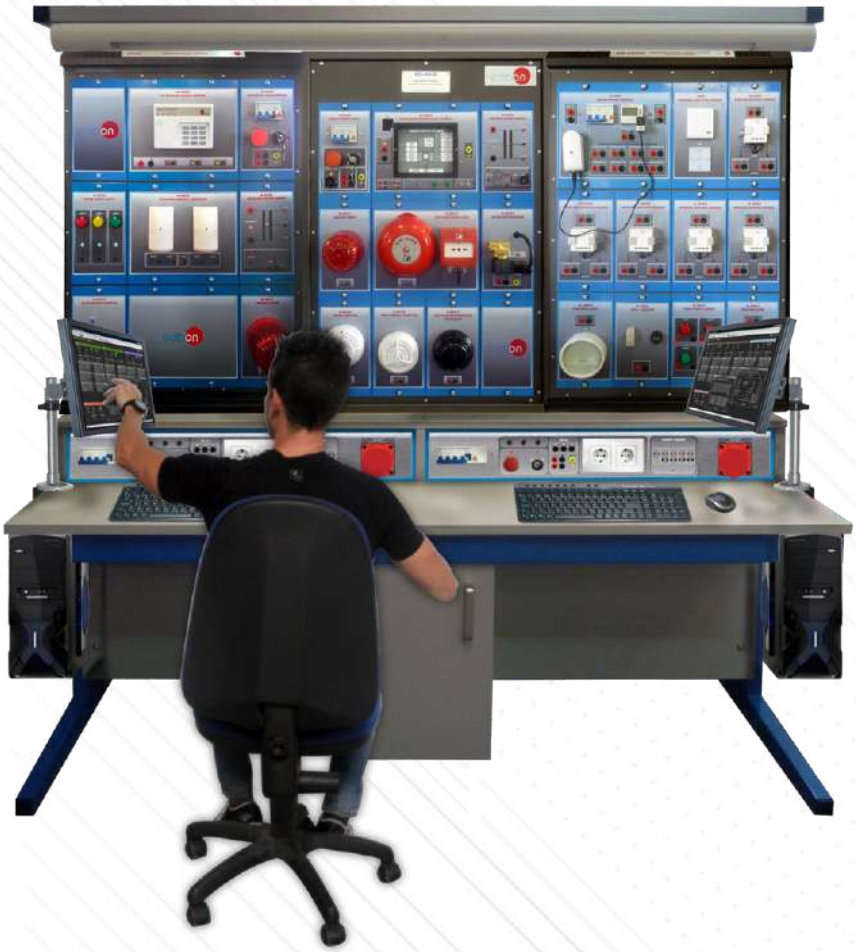
AEL-AD33.	Single-Phase Installations Faults Application.
AEL-AD33T.	Three-phase Installations Faults Application.
AEL-AE5.	Protection Relays Control Application.
AEL-PMEI.	Protection Measures in Electrical Installations Application.
AEL-AE9.	Power Flux Protection Application.

4.2. HOME AND BUILDING AUTOMATION

4.2.1. CONVENTIONAL APPLICATIONS

AEL-2. Home Automation Systems Laboratory

AEL-AD1A.	Robbery Alarm Advanced Application.
AEL-AD1B.	Robbery Alarm Application.
AEL-AD3A.	Fire Alarm Advanced Application.
AEL-AD3B.	Fire Alarm Application.
AEL-AD15A.	Position Control Advanced Application.
AEL-AD15B.	Position Control Application.
AEL-AD8.	Blinds Activation Application.
AEL-AD25A.	Control Application for Home Electric Service through the telephone.
AEL-AD22.	Flooding Control Application.
AEL-AD30.	Gas and Smoke Detection Application.
AEL-AD31.	Movement and Sound Detection Application.
AEL-AD40.	Remote Control Application Via Telephone.



Configuration example of AEL-2 - Home Automation Systems Laboratory

4.2.2. WIRELESS ZIGBEE AND Z-WAVE APPLICATIONS

AEL-AD28A.	Complete Home Automation Application with ZigBee Wireless Protocol.
AEL-AD28B.	Advanced Home Automation Application with ZigBee Wireless Protocol.
AEL-AD28C.	Home Automation Application with ZigBee Wireless Protocol.
AEL-AD23.	Wireless Intrusion Detection Application (RF).
AEL-ZWAVE.	Automation Systems Application with Z-WAVE Technology.
ZWAVE-AI.	Z-WAVE Anti Intrusion System.
ZWAVE-FFG.	Z-WAVE Flooding, Fire and Gas Security System.
ZWAVE-LC.	Z-WAVE Lighting Control.
ZWAVE-HC.	Z-WAVE Heating Control.
ZWAVE-VS.	Z-WAVE Video Surveillance.
ZWAVE-AC.	Z-WAVE Access Control.
ZWAVE-SC.	Z-WAVE Shutter Control.

4.2.3. DALI LIGHTING AUTOMATION

AEL-DALI.	DALI Installations Application.

4.2.4. KNX/EIB HOME/BUILDINGS AUTOMATION

AEL-KNX.	KNX Automation Installations in Buildings Application.
AEL-KNX-UB.	AEL-KNX Base Unit.
AEL-KNX-LIC.	KNX Lighting Control Training Application.
AEL-KNX-HVAC.	KNX for HVAC Control Training Application.
AEL-KNX-BC.	KNX Blind Control Training Application.
AEL-KNX-SFC.	KNX Security Control Training Application: Fire, Anti-intrusion, Floods, etc..
AEL-KNX-BMS.	Building Control Training Application via BMS.
AEL-BCS.	Building Automation and Control Networks BACnet Application.

4.2.5. BACNET BUILDINGS AUTOMATION

AEL-BCS.	Building Automation and Control Networks BACnet Application.

4.3. ELECTRICAL MACHINES

4.3.1. TRANSFORMERS APPLICATIONS

AEL-3. Electrical Machines Laboratory

AEL-SPTT.	Single-Phase Transformer Application.
AEL-TPTT.	Three-Phase Transformer Application.
AEL-AI13-D.	Electrotechnics Application (Transformers).
AEL-ESAT.	Fault Simulation Application in Three Phase Transformers.
TPTC.	Three-Phase Transformer Construction Unit.
LIMEL.	Integrated Laboratory for Electrical Machines:.

Configuration example of AEL-3 - Electrical Machines Laboratory

4.3.2. GENERATORS AND MOTORS APPLICATIONS

4.3.2.1. AC ELECTRICAL MOTORS AND GENERATORS

AEL-EEEM.	Energy Efficiency in Electrical Motors Application.
AEL-EHVC.	Computer Controlled Hybrid and Electric Vehicles Application.
AEL-EMSS.	Electrical Machines Soft Starters Application.
AEL-EMCF.	Electrical Machines Control through Frequency Controller Application.
AEL-AI13.	Electrotechnics Application (RLC Circuits, Electrostatics, Motors, Transformers, Lighting).
AEL-AI13-C.	Electrotechnics Application (Motors).
AEL-EMRP.	Electrical Machines Relays Protection Application.
AEL-MMRT.	Motor Management Relays Application.
AEL-ACEMT.	Advanced AC Electrical Motors Application.
EM-SCADA.	Control and Data Acquisition System Software for Electrical Machines.
AEL-ACINA.	Application of AC Three-Phase Induction Motor of Squirrel Cage.
AEL-ACDHA.	Application of AC Dahlander Three-Phase Induction Motor.
AEL-ACWRA.	Application of AC Three-Phase Induction Motor of Wound Rotor.
AEL-ACLA.	Application of AC Linear Motor Operations.
AEL-ACRL.	AC Three-Phase Reluctance Motors Application.
AEL-ACSPA.	Application of Asynchronous Single-Phase Motor with Split Phase.
AEL-AI12.	Alternating Current Motors Application.
AEL-SCIMS.	Squirrel Cage Induction Motors Starter Application.
AEL-EEA.	Alternators Study Application.
AEL-HPSG.	High Power Synchronous Generators Application.
AEL-LPSG.	Low Power Synchronous Generators Application.
AEL-ACEM.	AC Three-Phase Induction Motors Application.
AEL-EGMG24.	Motor-Generator Group.
AEL-ESAM.	Faults Simulation Application in Electrical Motors.
MUAD.	Electric Power Data Acquisition System.
AEL-FTM.	Transparent and Functional Motors Application.
LIMEL.	Integrated Laboratory for Electrical Machines:.

4.3.2.2. DC ELECTRICAL MOTORS AND GENERATORS

AEL-DCEMT.	DC Electrical Motors Applications.
AEL-DCSHT.	DC Shunt Excitation Motor Application.
AEL-DCSE.	DC Series Excitation Motors Application.
AEL-DCSH.	DC Shunt Excitation Motors Application.
AEL-DCCO.	DC Compound Excitation Motors Application.
AEL-DCIE.	DC Independent Excitation Motors Application.
AEL-DCGEA.	DC Generators Application.
AEL-DCPMA.	DC Permanent Magnet Motors Application.
AEL-DCBRA.	DC Brushless Motor Application.
AEL-DCEMA.	DC Electrical Motors Application.
AEL-UMA.	Universal Motor Application.
AEL-STMA.	Stepper Motor Application.
EM-SCADA.	Control and Data Acquisition System Software for Electrical Machines.
AEL-EHVC.	Computer Controlled Hybrid and Electric Vehicles Application.
MUAD.	Electric Power Data Acquisition System.
LIMEL.	Integrated Laboratory for Electrical Machines:.

4.3.3. PHYSICAL PRINCIPLES AND DESIGN OF ELECTRICAL MACHINES

AEL-EMT-KIT.	Advanced Dissectible and Configurable Electrical Machines.

4.4. INSTALLATIONS AND MAINTENANCE

4.4.1. CUTAWAY MODELS

Configuration example of AEL-4 - Electromechanical Constructions Laboratory

AEL-4. Electromechanical Constructions Laboratory

EMT1-S.	Cutaway DC Independent Excitation Motor-Generator.
EMT2-S.	Cutaway DC Series Excitation Motor-Generator.
EMT3-S.	Cutaway DC Shunt Excitation Motor-Generator.
EMT4-S.	Cutaway DC Compound Excitation Motor-Generator.
EMT5-S.	Cutaway DC Shunt/Series/Compound Excitation Motor-Generator.
EMT15-S.	Cutaway DC Permanent Magnet Motor.
EMT12-S.	Cutaway Universal Motor.
EMT18-S.	Cutaway DC Brushless Motor.
EMT6-S.	Cutaway Independent Excitation 3PH Synchronous Motor-Generator.
EMT6C-S.	Cutaway Permanent Magnets 3PH Synchronous Motor-Generator, 8 Poles, 24 VAC.
EMT7-S.	Cutaway 3PH Squirrel-Cage Motor.
EMT7B-S.	Cutaway 3PH Squirrel-Cage Motor, 4 Poles.
EMT7C-S.	Cutaway 3PH Squirrel-Cage Motor, 8 Poles.
EMT8-S.	Cutaway 3PH Wound Motor.
EMT9-S.	Cutaway Dahlander Motor, 2 Speeds.
EMT10-S.	Cutaway 3PH Squirrel-Cage Motor, 2 speeds.
EMT11-S.	Cutaway 1PH Squirrel-Cage Motor with Starting Capacitor.
EMT14-S.	Cutaway Single Phase Repulsion Motor with Brushes.
EMT16-S.	Cutaway 1PH Squirrel-Cage Motor with Starting and Running Capacitor.
EMT17-S.	Cutaway 3PH Squirrel-Cage Motor with "Y" Connection.
EMT19-S.	Cutaway Stepper Motor.
EMT20-S.	Cutaway 1PH Squirrel-Cage Motor with Split Phase.
EMT21-S.	Cutaway 3PH Reluctance Motor.
EMT22-S.	Cutaway 1PH shaded Pole Motor.

4.4.2. DETACHABLE MODELS

AEL-MGTC.	Motors, Generators and Transformers Construction Application.
AEL-DMG-KIT.	Dissectible Motors-Generators Application.
AEL-DIM-KIT.	4 Dissectible Induction Motors Application.

4.4.3. INSTALLATIONS AND MAINTENANCE TRAINING

WIT-MDRV.	Wiring Installation Training for AC and DC Motor Drives.
WIT-IEM.	Wiring Installation Training for AC and DC Industrial Electrical Motors.
WIT-WPS.	Wiring Installation Training for Wind Power Systems.
WIT-IEP.	Wiring Installation Training for Industrial Electrical Protections.
WIT-ILI.	Wiring Installation Training for Industrial Lighting Installations.
WIT-ISG.	Wiring Installation Training for Industrial Signalling Elements.
WIT-PFC.	Wiring Installation Training for Power Factor Correction Devices.
WIT-ISE.	Wiring Installation Training for Industrial Switching Elements.
WIT-EIB.	Wiring Installation Training for Electrical Installations in Buildings.
WIT-EPH.	Wiring Installation Training for Entryphones.
WIT-MCB.	Wiring Installation Training for Mains Connection and Meters in Buildings.
WIT-KNX.	Wiring Installation Training for Control via KNX.
WIT-KNX-UB.	WIT-KNX Base Unit.
WIT-KNX-LIC.	Wiring Installation Training for Lighting with KNX.
WIT-KNX-HVAC.	Wiring Installation Training for HVAC with KNX.
WIT-KNX-BC.	Wiring Installation Training for Blinds with KNX.
WIT-KNX-SFC.	Wiring Installation Training for Security with KNX: Fire, Intrusion Prevention, Floods, etc..
WIT-KNX-BMS.	Wiring Installation Training for Building Control via BMS.
WIT-SDCAC.	Wiring Installation Training for Start-up of DC and AC Motor Drives.
WIT-PHS.	Wiring Installation Training for Photovoltaic Systems.
WIT-PGH.	Wiring Installation Training for Power Generation Hybrid Systems.
WIT-NETS.	Wiring Installation Training for Network Systems.

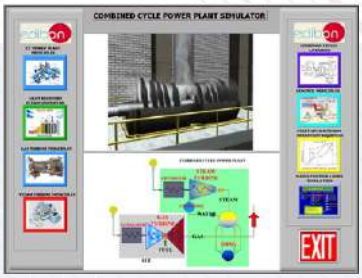
4. ELECTRICITY

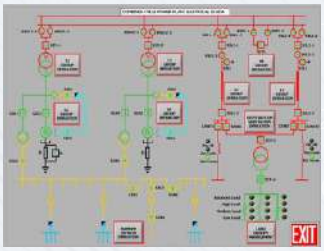
5 ENERGY

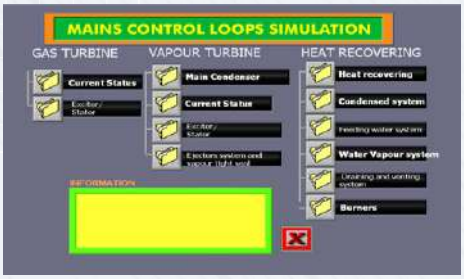
5.1. SMART GRIDS AND POWER SYSTEMS

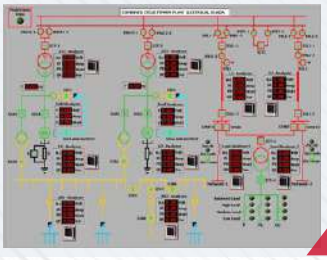
5.1.1. SMART GRIDS AND POWER SYSTEMS (UTILITIES)

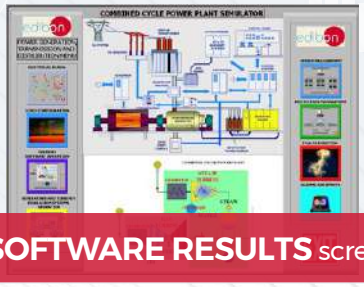
APS12. Advanced Mechanical, Electrical and Smart Grid Power Systems (Utilities)





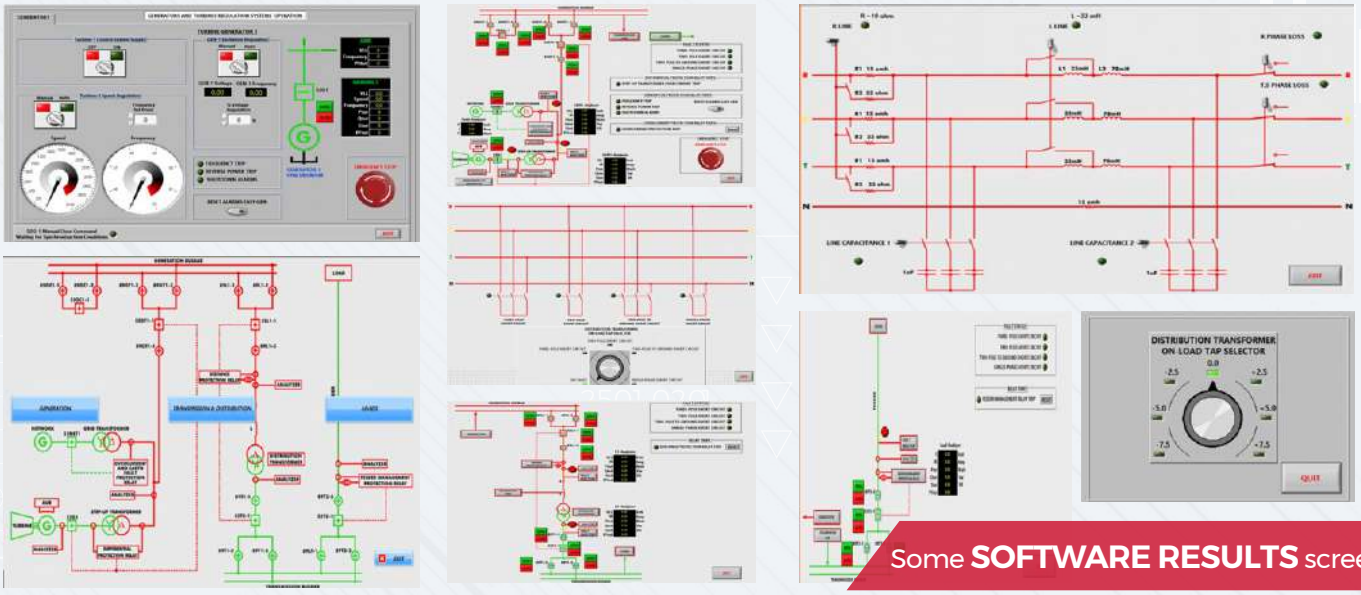






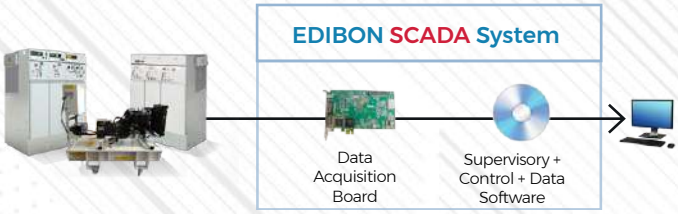
Some **SOFTWARE RESULTS** screens

AEL-MPSS. Modular Smart Grid Power Systems Series

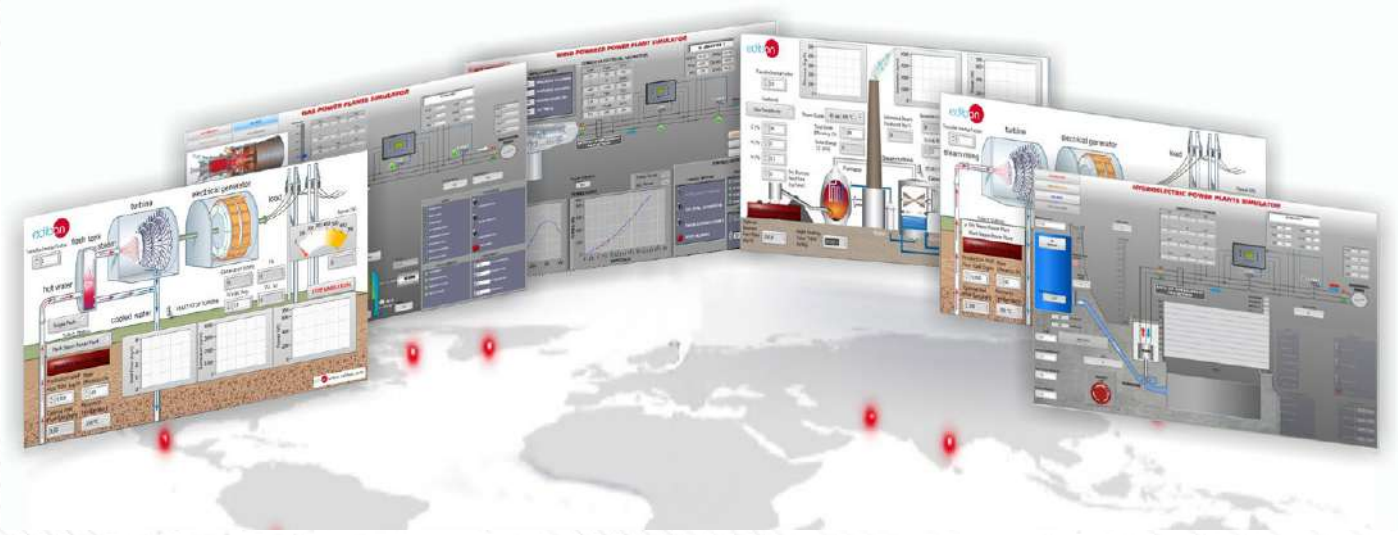


Some **SOFTWARE RESULTS** screens

MPGDC. Computer Controlled Marine Power Generation and Distribution System



PSV-PPSS. Power Plants Simulation Software

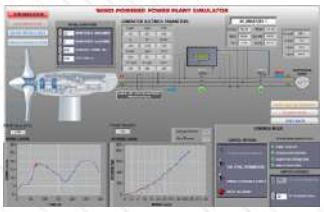


Complete configuration example for PSV-PPSS

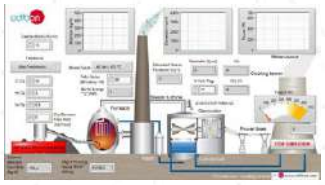
★ AVAILABLE VERSIONS

PSV-HPPS-SOF. Hydroelectric Power Plants Simulator

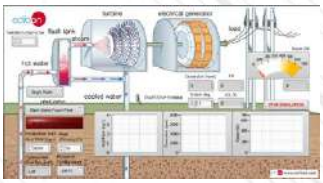
PSV-GSPP-SOF. Gas Power Plants Simulator



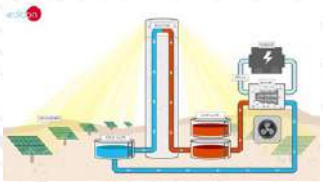
PSV-WPPP-SOF. Wind Powered Power Plant Simulator



PSV-BPP-SOF. Biomass Power Plant Simulator



PSV-GPP-SOF. Geothermal Power Plants Simulator



PSV-HSPP-SOF. Heliothermic Solar Power Plants Simulator

This power plant simulation software would also be available in
5.1.3. Power System Applications > 5.1.3.1. Power Generation

5.1.2. SMART GRIDS AND POWER SYSTEMS (END USER)

AEL-FUSG. Final User Smart Grid System

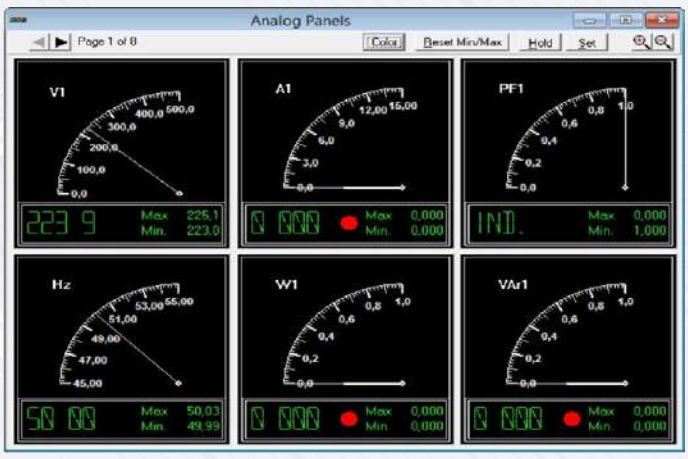
Complete configuration example for AEL-FUSG

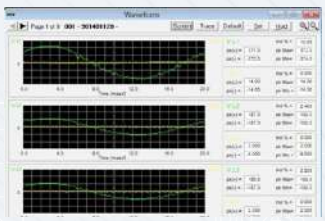
★ *AVAILABLE VERSIONS*

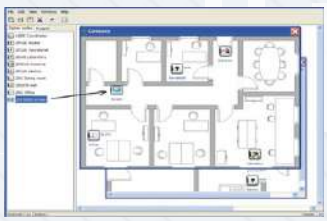
AEL-FUSG-M. Final User Smart Grid - Smart Meter Application

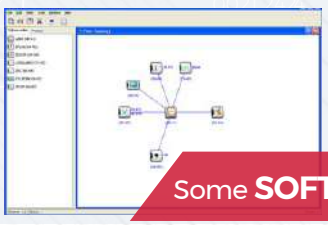
AEL-FUSG-E. Final User Smart Grid - Smart Energy Application

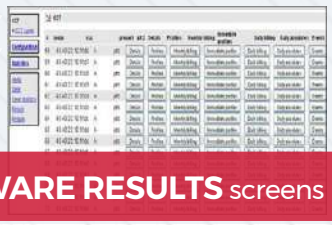
AEL-FUSG-N. Final User Smart Grid - Net Metering Application











Some **SOFTWARE RESULTS** screens

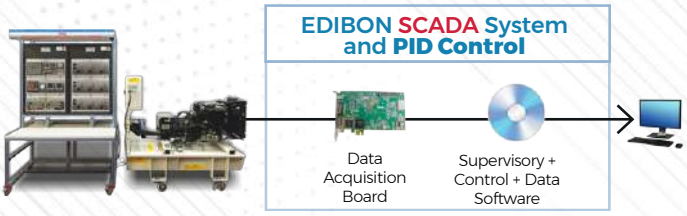
5.1.3. POWER SYSTEM APPLICATIONS

5.1.3.1. POWER GENERATION

AEL-EPP. Energy Power Plants Application

AEL-GAD-01S. Pumping Storage Power Plant Application, with SCADA

TDEGC. Computer Controlled Diesel Engine Electrical Generator Application

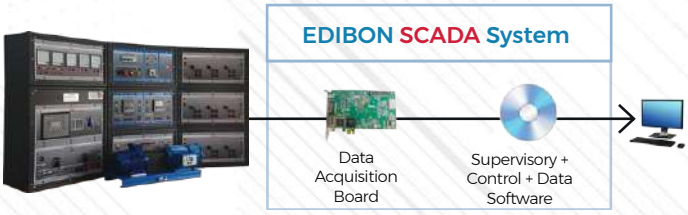


AEL-CPSS-01S. Smart Grid Power System with Power Generation, Transmission, Distribution and Loads, with SCADA

AEL-MGP. Microgrid Power Systems

AEL-CPSS-03S. Parallel Power Generation System with two Generators, two Distribution Lines and Loads, with SCADA

AEL-BSGC. Computer Controlled Smart Grids Application

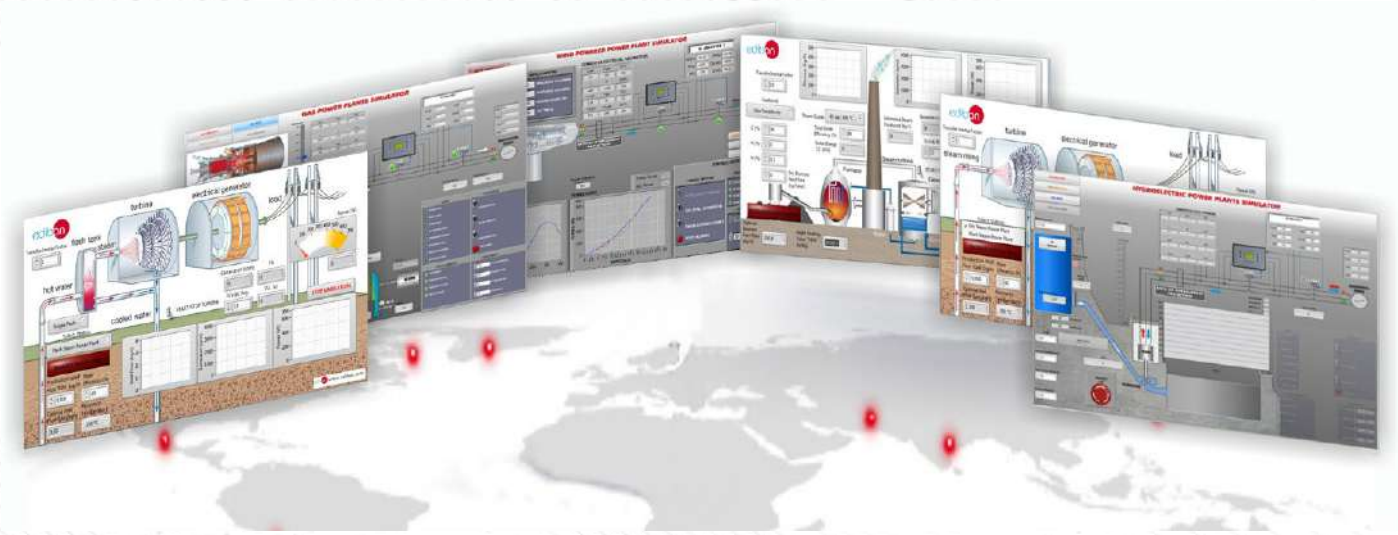


AEL-HPSG. High Power Synchronous Generators Application

AEL-LPSG. Low Power Synchronous Generators Application

AEL-TI-07. Power Transmission Application with Synchronous Generator

PSV-PPSS. Power Plants Simulation Software

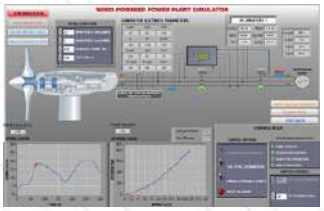


Complete configuration example for PSV-PPSS

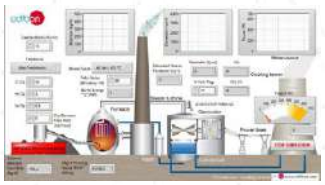
★ AVAILABLE VERSIONS

PSV-HPPS-SOF. Hydroelectric Power Plants Simulator

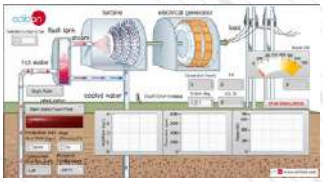
PSV-GSPP-SOF. Gas Power Plants Simulator



PSV-WPPP-SOF. Wind Powered Power Plant Simulator



PSV-BPP-SOF. Biomass Power Plant Simulator



PSV-GPP-SOF. Geothermal Power Plants Simulator

PSV-HSPP-SOF. Heliothermic Solar Power Plants Simulator

This power plant simulation software would also be available in
5.1. Smart Grids and Power Systems >
5.1.1. Smart Grids and Power Systems (utilities)

5.1.3.2. POWER TRANSMISSION

AEL-TI-01. Analysis of Three-phase Power Lines Application

AEL-TI-02. Distribution Transformer with Motor Regulation Application

AEL-TI-03. Arc Suppression Coil Application

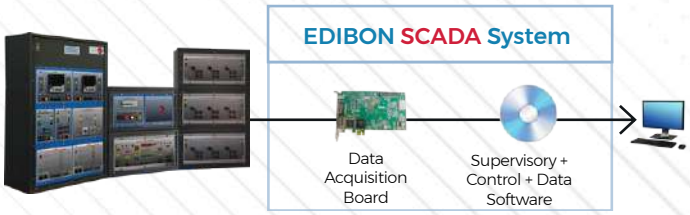
AEL-TI-04. Underground Transmission Lines Application

AEL-TI-05. Parallel and Series Transmission Lines Application

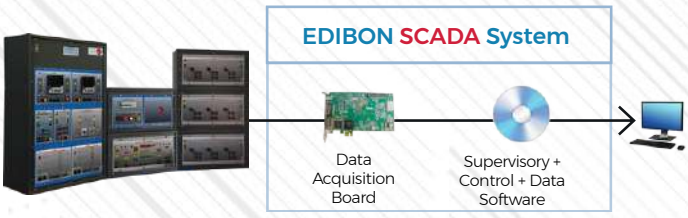
AEL-TI-06. Analysis of Power Flows in Transmission Lines Application

AEL-AE1A. Aerial Line Model Application

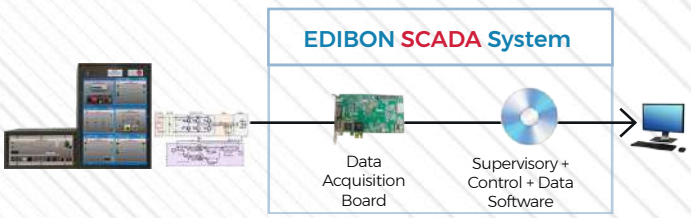
AEL-PTSG. Computer Controlled Power Transmission Smart Grid Application, with SCADA



AEL-SVC. Computer Controlled Voltage Control with SVCs in Transmission Systems Application



AEL-PEC. Computer Controlled Advanced Power Electronics Application



5.1.3.3. POWER DISTRIBUTION AND LOADS

AEL-SST-01. Switching in Transmission and Distribution Substations Application

AEL-MRPC. Manual Reactive Power Compensation Application

AEL-RPC. Reactive Power Compensation Application

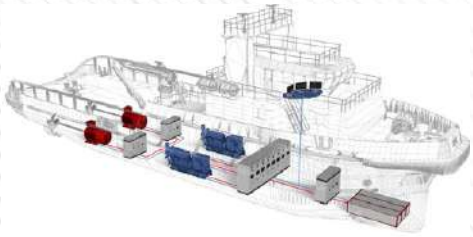
AEL-EECFP. Advanced Power Factor Compensation Application

AEL-APFC. Single-phase Automatic Power Factor Compensation Application

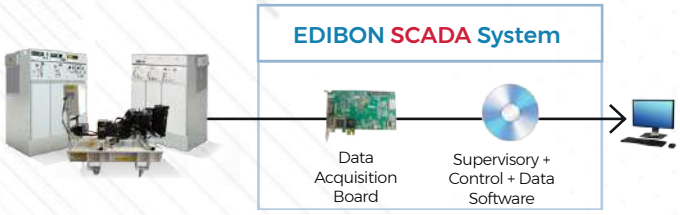
AEL-DLT. Dynamic Loads Application

5.2. MICROGRIDS

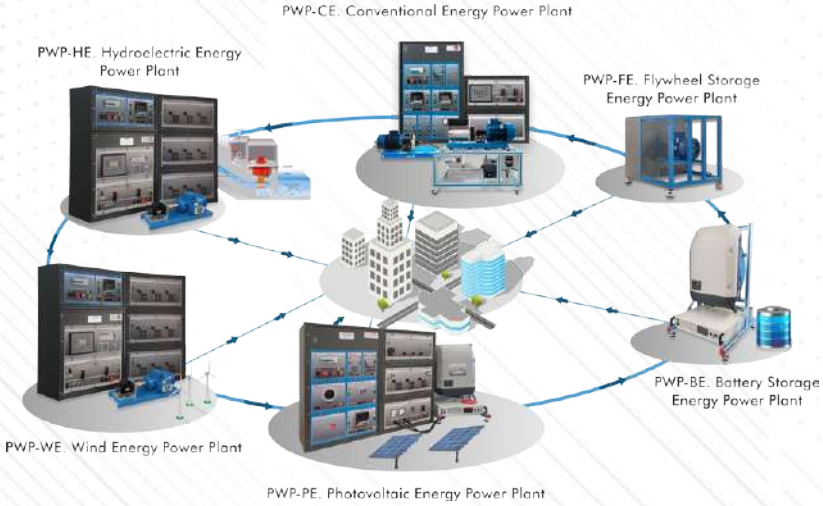
AEL-MEPD-01. Modular Marine Electrical Power Distribution Application, with SCADA



MPGDC. Computer Controlled Marine Power Generation and Distribution System



AEL-MGP. Microgrid Power Systems



Complete configuration example for AEL-MGP

PWP-CE. Conventional Energy Power Plant

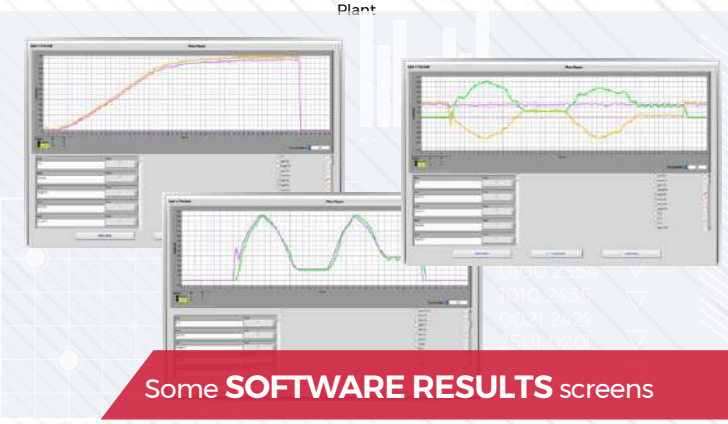
PWP-HE. Hydroelectric Energy Power Plant

PWP-WE. Wind Energy Power Plant

PWP-PE. Photovoltaic Energy Power Plant

PWP-BE. Battery Energy Storage Power Plant

PWP-FE. Flywheel Energy Storage Power Plant

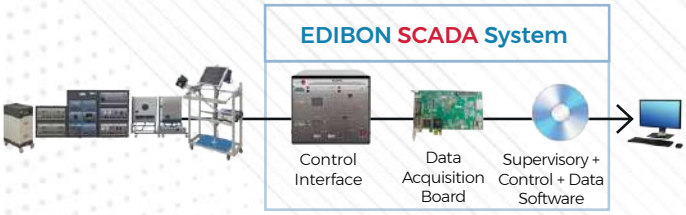


Some **SOFTWARE RESULTS** screens

5.3. RENEWABLE ENERGIES

5.3.1. PHOTOVOLTAIC SOLAR ENERGY

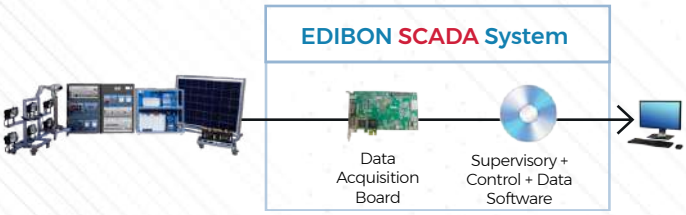
AEL-PHVGC. Computer Controlled Photovoltaic Power Plants Application



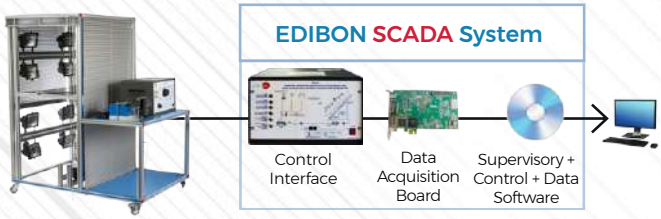
AEL-PHIP. Photovotaic Systems Application in Isolated and Parallel Grids

AEL-SAPV. Stand-Alone Photovoltaic Application

SWPC. Computer Controlled Stand-alone Water Pumping Application



EESFC. Computer Controlled Photovoltaic Solar Energy Unit



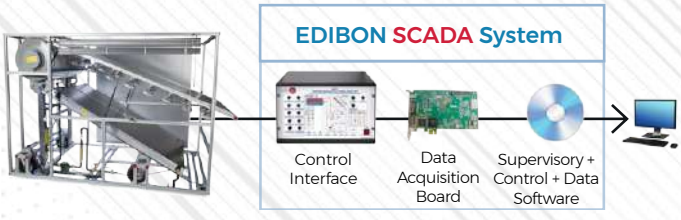
MINI-EESF. Photovoltaic Solar Energy Modular Unit (Complete Version)

MINI-EESF/M. Photovoltaic Solar Energy Modular Unit (Intermediate Version)

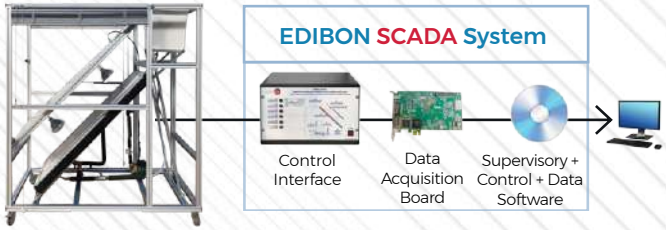
MINI-EESF/B. Photovoltaic Solar Energy Modular Unit (Basic Version)

5.3.2. SOLAR THERMAL ENERGY

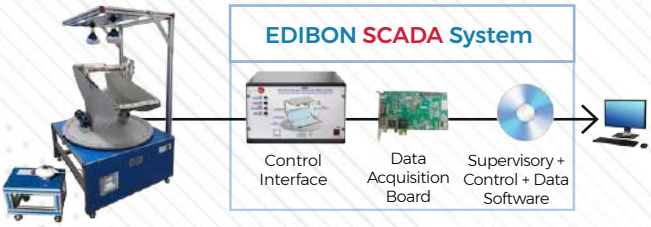
EESTC. Computer Controlled Thermal Solar Energy Unit



MINI-EESTC. Computer Controlled Thermal Solar Energy Basic Unit

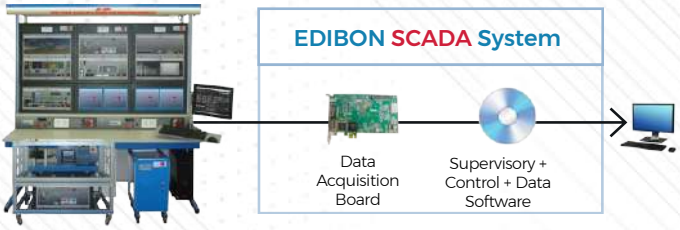


ECESC. Computer Controlled Focusing Solar Energy Collector



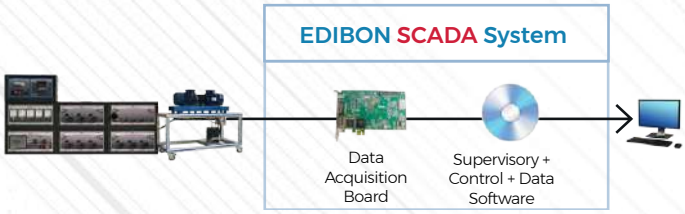
5.3.3. WIND ENERGY

AEL-WPP. Computer Controlled Wind Power Plants with Double Feed Induction Generator Application



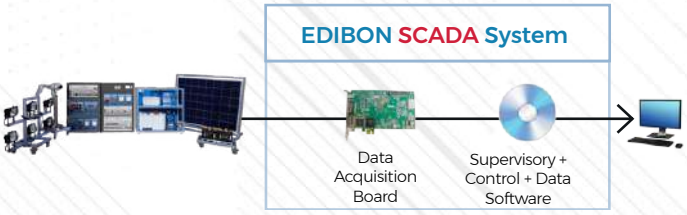
AEL-WPTC. Wind Power Application with Permanent Magnets Synchronous Generator, with SCADA

AEL-WPPIC. Computer Controlled Wind Power Plants Application with Induction Generator

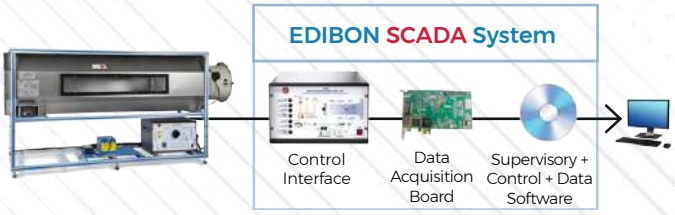


AEL-SWT. Stand-Alone Wind Turbine Application

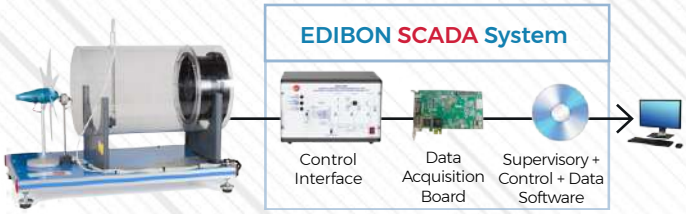
SWPC. Computer Controlled Stand-alone Water Pumping Application



EEEC. Computer Controlled Wind Energy Unit

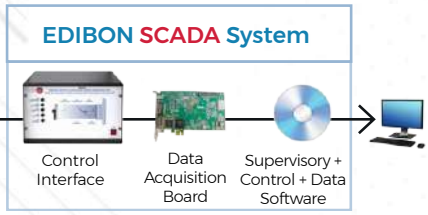


MINI-EEEC. Computer Controlled Wind Energy Basic Unit



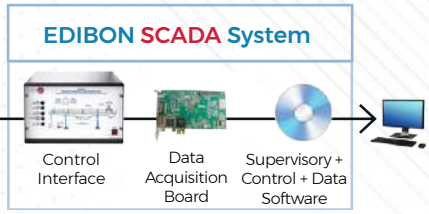
WEDTA. Wind Energy Drive Train Analysis Unit

WETFC. Computer Controlled Wind Energy Turbine Fundamentals Unit

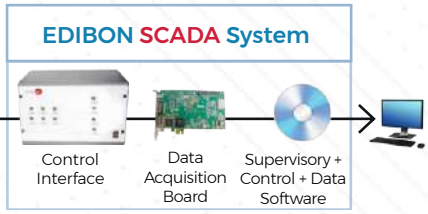


5.3.4. MARINE ENERGY

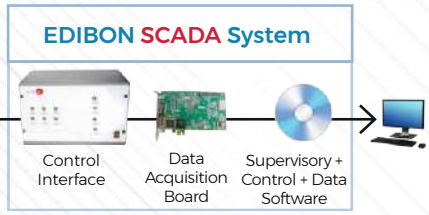
EOMC. Computer Controlled Waves Energy Unit



EMMC. Computer Controlled Tidal Energy Unit

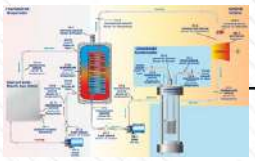


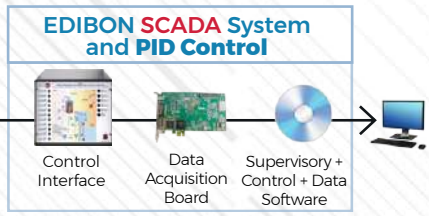
ECMC. Computer Controlled Submarine Currents Energy Unit



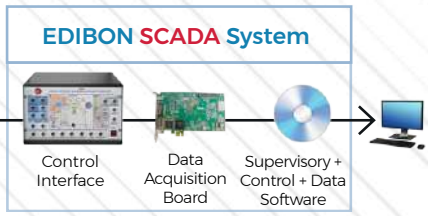
5.3.5. GEOTHERMAL ENERGY

EG6C. Computer Controlled Geothermal (high enthalpy) Energy Unit

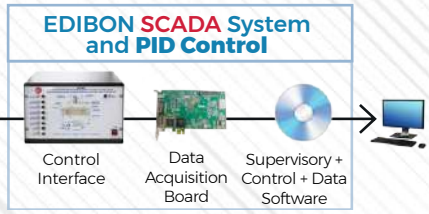




EG5C. Computer Controlled Geothermal (low enthalpy) Energy Unit

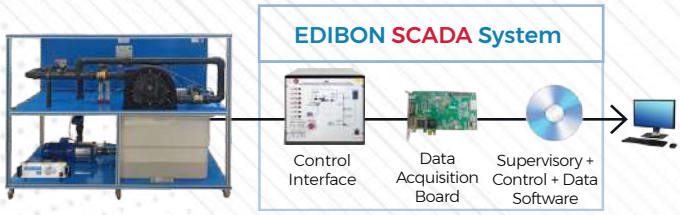


EGTWC. Computer Controlled Geothermal Energy Unit with Two-Well System

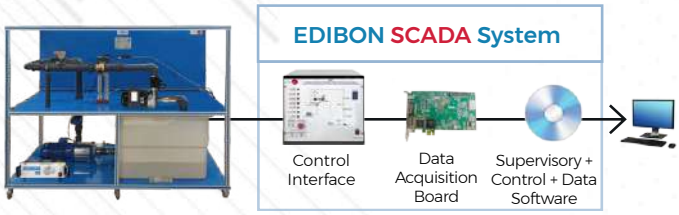


5.3.6. HYDRAULIC ENERGY

HPPP. Computer Controlled Hydroelectric Power Plant with Pelton Turbine

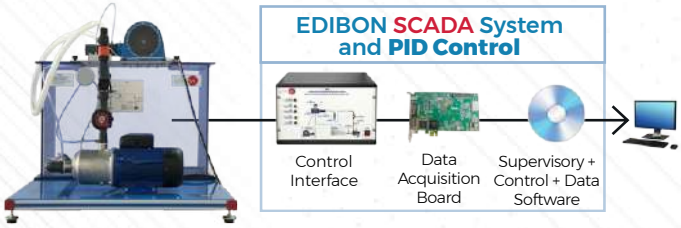


HPPF. Computer Controlled Hydroelectric Power Plant with Francis Turbine

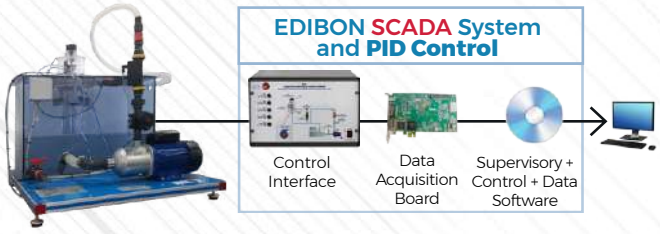


AEL-GAD-01S. Pumping Storage Power Plant Application, with SCADA

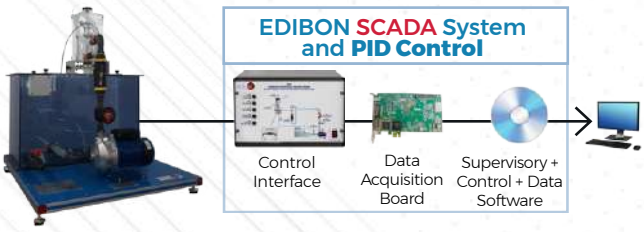
TPC. Computer Controlled Pelton Turbine



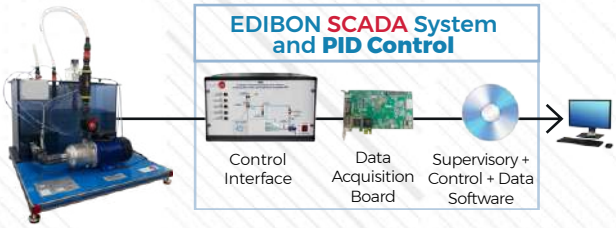
TFC. Computer Controlled Francis Turbine



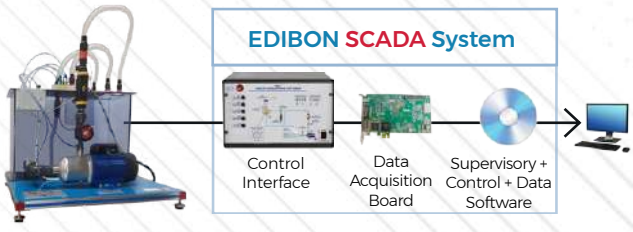
TKC. Computer Controlled Kaplan Turbine



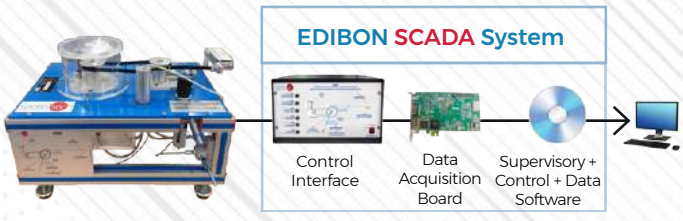
TFRC. Computer Controlled Radial Flow Turbine



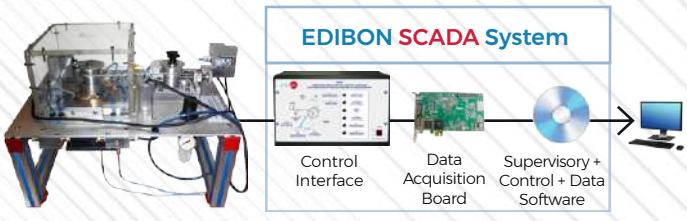
TFAC. Computer Controlled Axial Flow Turbine



HTRC. Computer Controlled Experimental Reaction Turbine

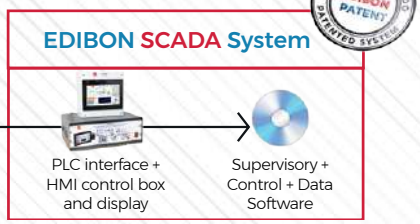


HTIC. Computer Controlled Experimental Impulse Turbine

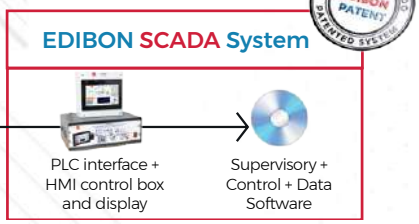


5.3.7. BIOFUELS

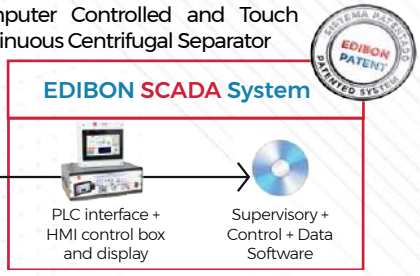
ACCR/20/CTS. Computer Controlled and Touch Screen 20 l Anti-Corrosive Circulation Reactor



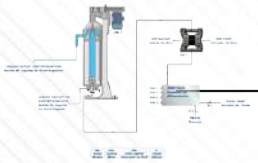
ACCR/250/CTS. Computer Controlled and Touch Screen 250 l Anti-Corrosive Circulation Reactor

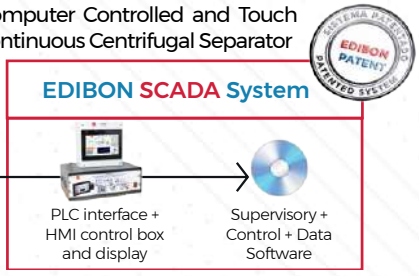


SCS/60/CTS. Computer Controlled and Touch Screen 60 l Semicontinuous Centrifugal Separator

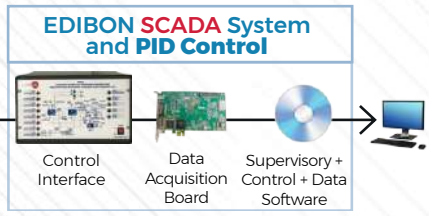


SCS/1000/CTS. Computer Controlled and Touch Screen 1000 l Semicontinuous Centrifugal Separator

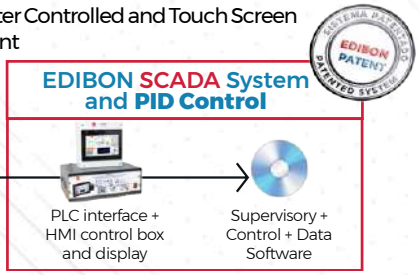




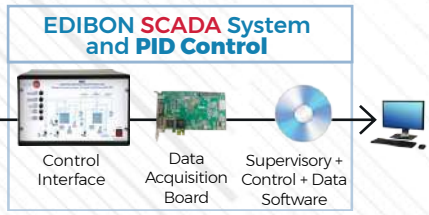
EBEC. Computer Controlled Bioethanol Process Unit



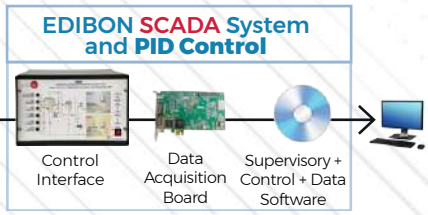
PBGC/CTS. Computer Controlled and Touch Screen Biogas Processing Plant



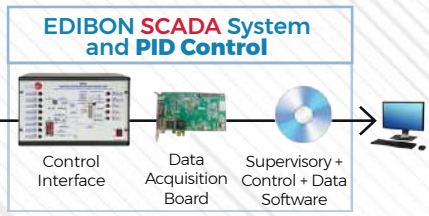
EBGC. Computer Controlled Biogas Process Unit



EBDC. Computer Controlled Biodiesel Process Unit

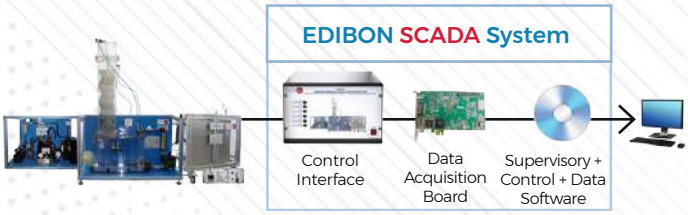


EBMC. Computer Controlled Biomass Process Unit



5.3.8. STORAGE SYSTEMS

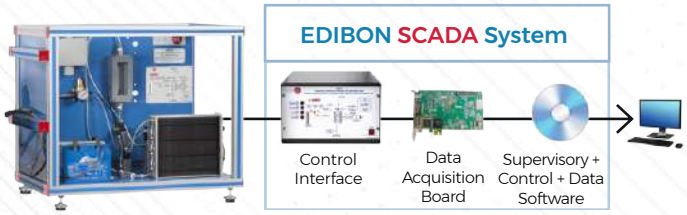
TCPISC. Computer Controlled Cooling Plant with Ice Store



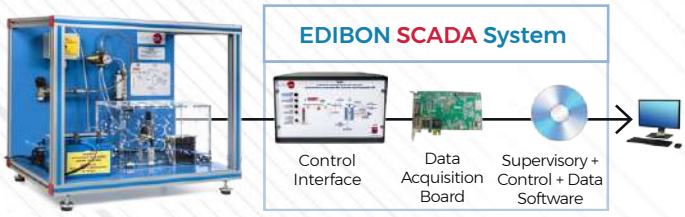
5.3.9. HYDROGEN FUEL CELLS

AEL-FCLL. Fuel Cell Energy Application

EC6C. Computer Controlled PEM Fuel Cell Advanced Unit



EC5C. Computer Controlled PEM Fuel Cell Unit

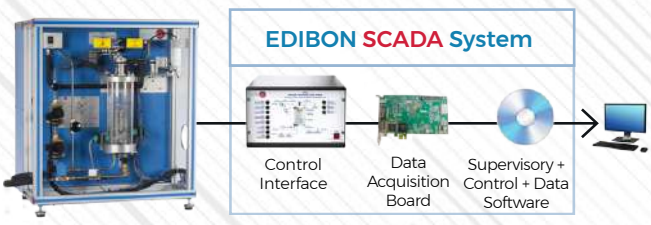


EDILAB-ELEC1. Electrolyzer (3 Nl/h)

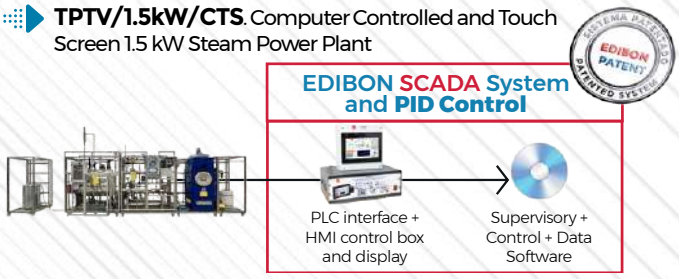
EDILAB-ELEC2. Electrolyzer (60 Nl/h)

5.3.10. STEAM TURBINES AND ORGANIC RANKINE CYCLES

TTVC. Computer Controlled Steam Turbine



TPTV/1.5kW/CTS. Computer Controlled and Touch Screen 1.5 kW Steam Power Plant



TPTV/20kW/CTS. Computer Controlled and Touch Screen 20 kW Steam Power Plant

EDIBON SCADA System and PID Control

PLC interface + HMI control box and display

Supervisory + Control + Data Software

HTVC. Computer Controlled Solar/Heat Source Vapour Turbine

EDIBON SCADA System and PID Control

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

TORC. Computer Controlled Organic Rankine Cycle Unit

EDIBON SCADA System and PID Control

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

5.3.11. OTHER NON-CONVENTIONAL SYSTEMS

TMSC. Computer Controlled Stirling Motor

EDIBON SCADA System

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

TBTC. Computer Controlled Thermo-Electric Heat Pump

EDIBON SCADA System and PID Control

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

5.4. CONVENTIONAL ENERGIES

TDEGC. Computer Controlled Diesel Engine Electrical Generator Application

EDIBON SCADA System and PID Control

Data Acquisition Board

Supervisory + Control + Data Software

TGDEC. Computer Controlled Two -Shaft Gas Turbine

EDIBON SCADA System

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

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

EDIBON SCADA System

Control Interface

Data Acquisition Board

Supervisory + Control + Data Software

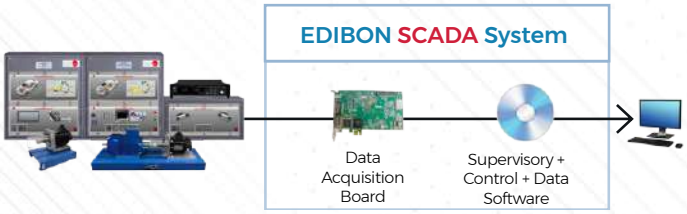
5.5. ENERGY STORAGE

AEL-FES. Flywheel Energy Storage Application

AEL-SGSB. Smart Grids Battery Storage Application

AEL-GAD-01S. Pumping Storage Power Plant Application, with SCADA

AEL-EHVC. Computer Controlled Hybrid and Electric Vehicles Application



AEL-BESTA. Battery Energy Storage Test Application

5.6. HIGH VOLTAGE AND ELECTRICAL PROTECTION SYSTEMS

5.6.2. PROTECTION SYSTEMS

ERP. Protection Relays Application

ERP-CBM. Cybersecurity Application

AEL-CTFP. Current Transformer Fundaments Application for Protections Devices

AEL-VTFP. Voltage Transformer Fundaments Application for Protection Devices

AEL-GPRE. Generator Protection Relay Application

5.7. INSTALLATIONS AND MAINTENANCE

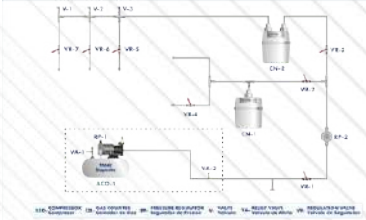
5.7.3. INSTALLATIONS AND MAINTENANCE TRAINING

MRST. Measurement and Regulation Station Unit

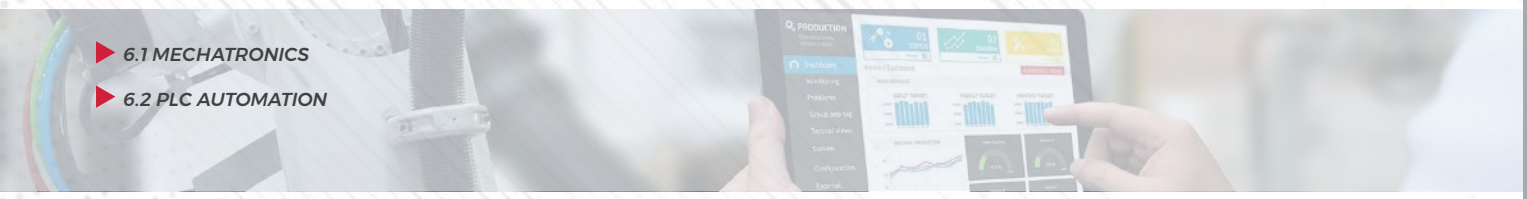
IGHT. Instantaneous Gas Heater Experimentation Unit

GBT. Forced Draft Gas Burner Unit

GHST. Domestic Gas Supply Experimentation Unit



6 MECHATRONICS & AUTOMATION



6.1. MECHATRONICS

6.1.1. CONTROL

6.1.1.1. THEORETICAL-PRACTICAL FUNDAMENTALS

RYC/T. Computer Controlled Modular Control and Regulation Unit

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

★ *ADDITIONAL RECOMMENDED ELEMENTS FOR RYC*

RYC-BB. Ball and Beam Module

RYC-SM. DC Servo Motor Module

RYC-TAR. Air Flow Temperature Control Module

RYC-PI. Inverted Pendulum Control Module

RYC-CLM. Magnetic Levitation Control Module

RYC-TAG. Water Flow Temperature Control Module

RYC-TE. Temperature Control Module

RYC-P. Pressure Control Module

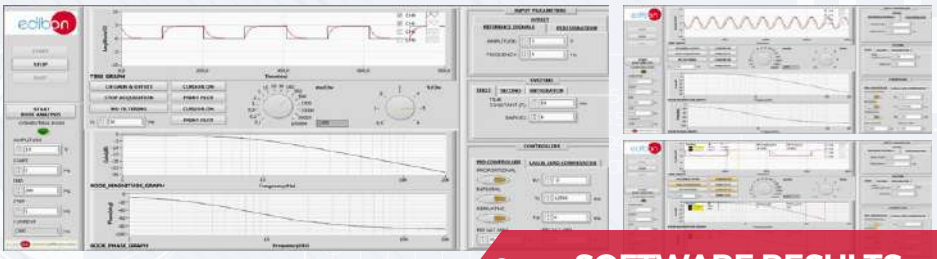
RYC-N. Level Control Module

RYC-C. Flow Rate Control Module

RYC-I. Luminosity Control Module

RYC-pH. pH Control Module

RYC-CP. Position Control Module

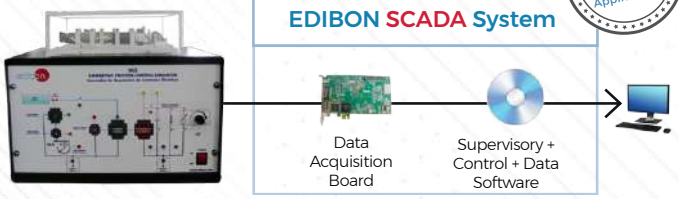


Some **SOFTWARE RESULTS** screens

RYC/B. Basic Teaching Unit for the Study of Regulation and Control

SCE. Computer Controlled Generating Stations Control and Regulation Simulator

Also available for 6.1.1.3.Industrial System Applications

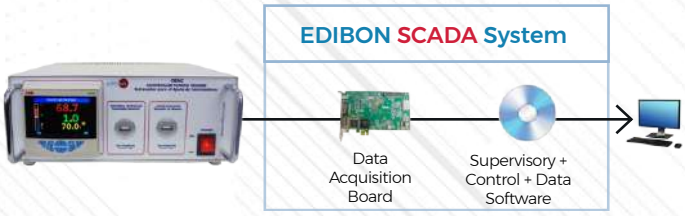


6.1.1.2. INDUSTRIAL CONTROLLERS

CECI. Industrial Controllers Unit

CRCI. Industrial Controllers Networking

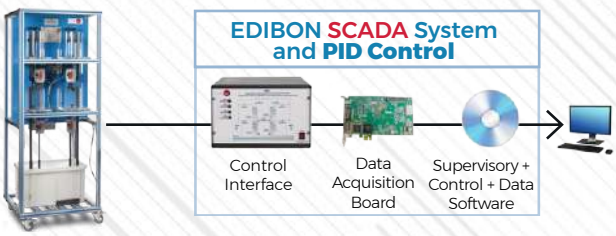
CEAC. Computer Controlled Controller Tuning Unit



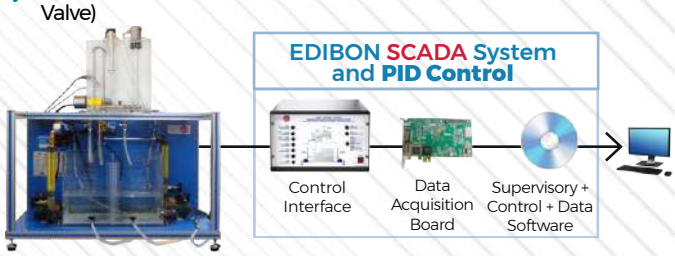
CEAB. Field Bus Applications Unit

6.1.1.3. INDUSTRIAL SYSTEM APPLICATIONS

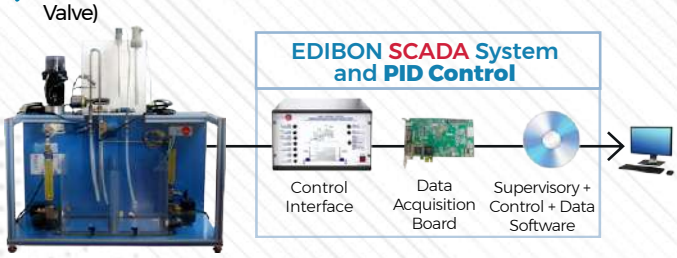
CTAC. Computer Controlled Coupled Tanks System



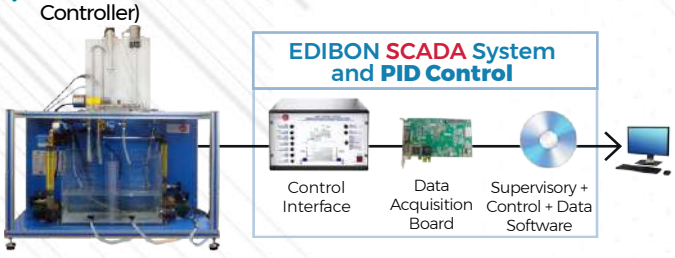
UCP. Computer Controlled Process Control (Electronic Valve)



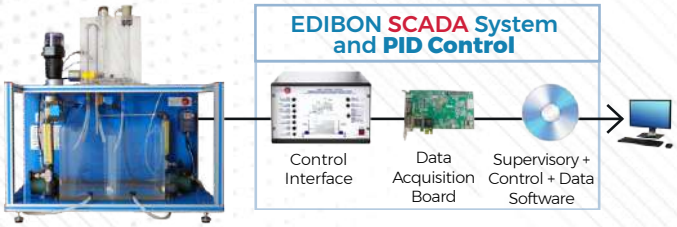
UCPCN. Computer Controlled Process Control (Pneumatic Valve)



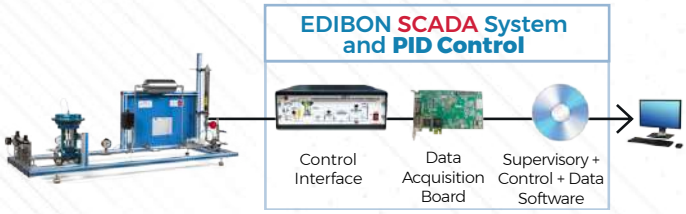
UCPCV. Computer Controlled Process Control (Speed Controller)



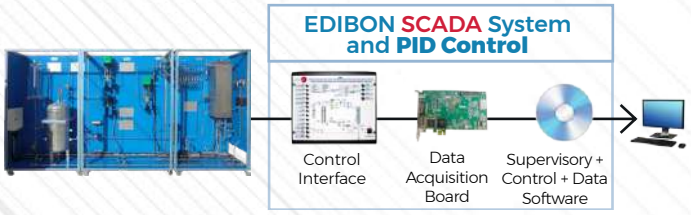
UCPCNCV. Computer Controlled Process Control Unit (Electronic + Pneumatic Valve and Speed Controller)



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



CPIC. Computer Controlled Industrial Process Control Plant

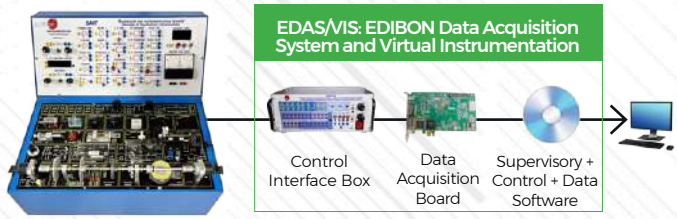


CPIC-C.	Computer Controlled Industrial Process Control Plant (only Flow).
CPIC-T.	Computer Controlled Industrial Process Control Plant (only Temperature).
CPIC-N.	Computer Controlled Industrial Process Control Plant (only Level).
CPIC-P.	Computer Controlled Industrial Process Control Plant (only Pressure).

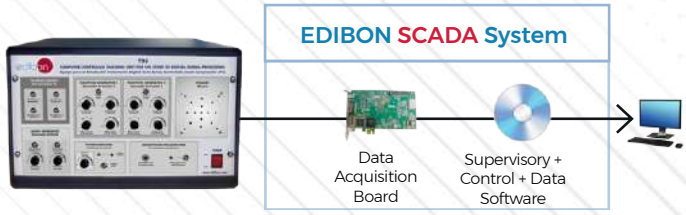
6.1.2. ELECTRONICS

6.1.2.1. SENSORS AND ELECTRONIC INSTRUMENTATION

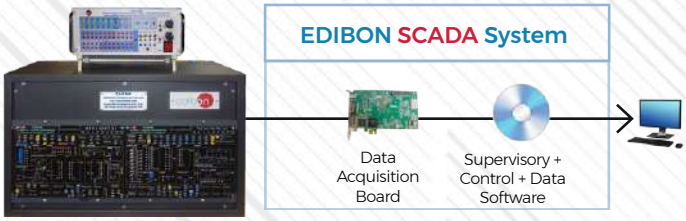
SAIT. Transducers and Instrumentation Unit



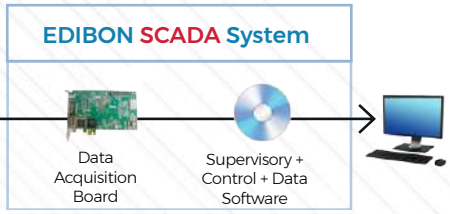
TDS. Computer Controlled Teaching Unit for the Study of Digital Signal Processing



CADDA. Computer Controlled A/D and D/A Converters Unit



BS. Modular System for the Study of Sensors



BSPC. Computer Controlled Base Unit for BS

★ ADDITIONAL RECOMMENDED ELEMENTS FOR BSPC

BS1. Vibrations and/or Deformations Test Module

BS2. Temperature Test Module

BS3. Pressure Test Module

BS4. Flow Test Module

BS5. Ovens Test Module

BS6. Liquid level Test Module

BS7. Tachometer Test Module

BS8. Proximity Test Module

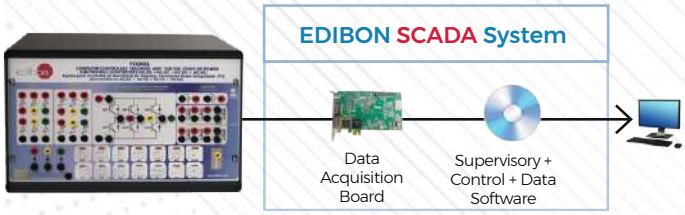
BS9. Pneumatic Test Module

BS10. Light Test Module

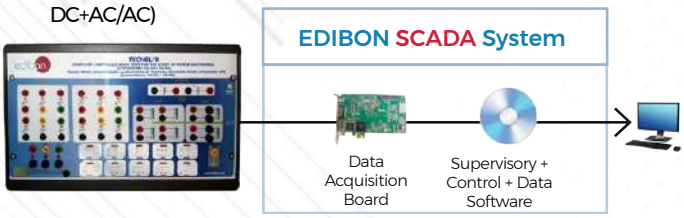
Some **SOFTWARE RESULTS** screens

6.1.2.2. POWER ELECTRONICS AND INDUSTRIAL ELECTRONICS

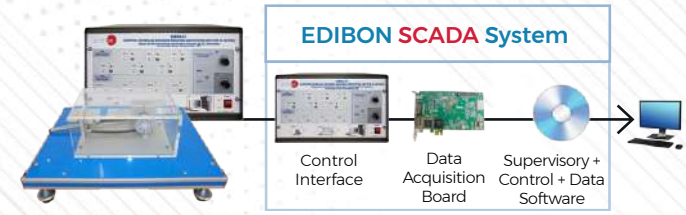
TECNEL. Computer Controlled Teaching Unit for the Study of Power Electronics (with IGBTS)



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

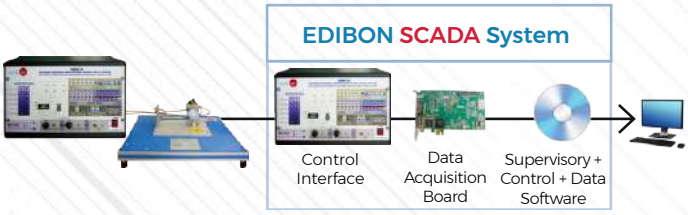


SERIN/CC. Computer Controlled Advanced Industrial Servosystem Unit (for DC Motors)

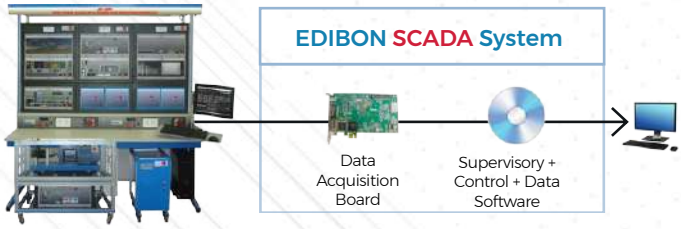


SERIN/CCB. Servosystems Basic Unit for DC Motors

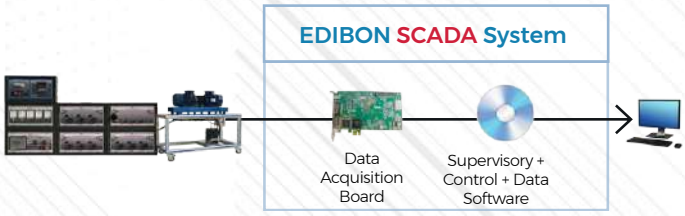
SERIN/CA. Computer Controlled Advanced Industrial Servosystems Unit (for AC Motors)



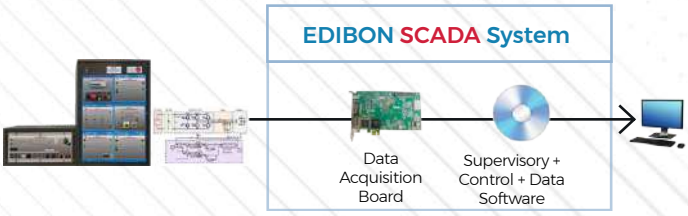
AEL-WPP. Computer Controlled Wind Power Plants with Double Feed Induction Generator Application



AEL-WPPIC. Computer Controlled Wind Power Plants Application with Induction Generator



AEL-PEC. Computer Controlled Advanced Power Electronics Application



AEL-SERIN/CA-1KW. 1 kW AC Industrial Servomotor Application

6.1.3. HYDRAULICS AND PNEUMATICS

6.1.3.1. HYDRAULICS

AE-HD. Hydraulic and Electro-Hydraulic Application

HPU. Hydraulic Power Unit

6.1.3.2. PNEUMATICS

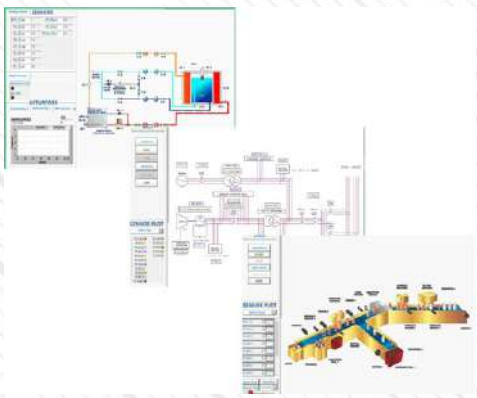
AE-NS. Pneumatic and Electro-Pneumatic Application

SAC. Silent Air Compressor Unit

AE-V. Vacuum Technology Unit

6.1.4. MECHATRONIC SOFTWARE

AE-AS. Automation System Simulation Software



6.2. PLC AUTOMATION

6.2.1. PLC OPTIONS

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

6.2.2. HARDWARE EMULATORS

6.2.2.1. MANUFACTURING SYSTEMS

N-EM-MA.	Embossing Machine.
N-EM-ST.	Drilling System.
N-EM-SDT.	Pipe Bending System.
N-EM-PAE.	Automatic Stamping Press.
N-EM-RAC.	Compressed Air Network.
N-EM-TC.	Coal Treatment.
N-EM-PELE.	Packing Line and Bottling Plant.
N-EM-CMM.	Molding Machine Control.
N-EM-CACV.	Vehicle Feeding & Loading Control.
N-EM-CR.	Reactor Control.
N-EM-CL.	Rolling Mill Control.
N-EM-CTRA.	Workcell Application.
N-EM-CB.	Pump Control.

6.2.2.2. FLOW AND LEVEL CONTROL

N-EM-SBAR.	Dirty-Water Pump System.
N-EM-SBP.	Pump System (Pressure).
N-EM-SCA.	Canalization System.
N-EM-PLLT.	Filling Process of Tanks.
N-EM-CCO.	Sluice Gate Control.
N-EM-CNC.	Level and Flow Control.
N-EM-CNTA.	Water Tower Level Control.
N-EM-CS.	Silo Control.
N-EM-CML.	Liquids Mixing Control.
N-EM-CME.	Mixer Control.
N-EM-AC.	Buffer Storage.
N-EM-RT.	Temperature Regulation.
N-EM-SALL.	Automatic Filling System.

6.2.2.3. TRANSPORT AND SORTING

N-EM-SL.	Cleaning System.
N-EM-SBT.	Conveyor Belts System.
N-EM-SCCT.	Conveyor Charging System.
N-EM-SCC.	Collecting Belt Conveyor.
N-EM-MCC.	Mails Allocation Machine.
N-EM-CPOS.	Position Control.
N-EM-CCP.	Count and Position Control.

6.2.2.4. ELECTRICAL MACHINES CONTROL

N-EM-ACC.	Feeding and Loading Control.
N-EM-M.	Motor Control.
N-EM-MPP.	Stepper Motor Control.
N-EM-MET.	Star-Delta Connection.
N-EM-MCETI.	Reversing Star-Delta Connection.
N-EM-MD.	Dahlander Motor Circuit.
N-EM-M2BS.	Motor with 2 separate Windings.
N-EM-MAC.	Starting a Wound - Rotor Motor.
N-EM-CPR.	Reactive Current Compensation.
N-EM-MCI.	Reversing Contactor.

6.2.2.5. TRAFFIC & PARKING CONTROL

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

6.2.2.6. HOME AND OFFICE

N-EM-CA.	Elevator Control.
N-EM-CLA.	Automatic Washing Machine Control.
N-EM-MB.	Drinks Machine.
N-EM-MBC.	Hot Drinks Machine.
N-EM-CA2P.	Two-Doors Access Control.
N-EM-CI.	Fire Control.
N-EM-CP.	Proximity Control (security).
N-EM-CF.	Photo Control.
N-EM-CSC.	Heating System Control.
N-EM-AN.	Annunciator.
N-EM-SLU.	Running Lights.
N-EM-CTI.	Tower Lighting Control Module.

6.2.3. INSTRUMENTATION AND CONTROL WITH PLC

BS-PLC. Modular System for the Study of Sensors with PLC Control

Complete configuration example for BS-PLC

★ AVAILABLE VERSIONS

BS2-PLC.	Temperature Test Module for PLC.
BS3-PLC.	Pressure Test Module for PLC.
BS4-PLC.	Flow Test Module for PLC.
BS5-PLC.	Ovens Test Module for PLC.
BS6-PLC.	Liquid Level Test Module for PLC.
BS7-PLC.	Tachometers Test Module for PLC.
BS9-PLC.	Pneumatic Test Module for PLC.
BS10-PLC.	Light Test Module for PLC.

6.2.4. INDUSTRIAL APPLICATIONS WITH PLC

AE-PLC-CPI.	Industrial Processes Control Workstation.	**AE-PLC-EF**.	Photovoltaic Energy Application.
AE-PLC-PH.	pH control Workstation.	**AE-PLC-EE**.	Wind Energy Application.
AE-PLC-ME.	Electrical Machines Application.	**AE-PLC-EST**.	Solar Thermal Energy Application.
AE-PLC-SM.	Smart Grid System Application.	**AE-PLC-SH**.	Hybrid Energy Application.
AE-PLC-CS.	Traffic Light Control Application.	**AE-PLC-MEE**.	Wind Turbine Application.
AE-PLC-INV.	Greenhouse Application.	**AE-PLC-SP**.	Power System Application.
AE-PLC-SE.	Elevator Control Application.	**AE-PLC-AC**.	Air pressure and flow control Workstation.
AE-PLC-SPA.	Automatic Sectional Door Application.	**AE-PLC-CN**.	Flow and level control Workstation.
AE-PLC-SA.	Industrial Kneader Application.	**AE-PLC-RT**.	Temperature Regulation Application.

AE-PLC-SE. Elevator Control Application.

6.2.5. WORKSTATION APPLICATIONS WITH PLC

6.2.5.1. PIECES FEEDING WORKSTATIONS APPLICATIONS

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

AE-PLC-APS. Pieces Feeder Workstation.

6.2.5.2. PROCESSING WORKSTATIONS APPLICATIONS

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

6.2.5.3. ROTARY TABLE WORKSTATIONS

AE-PLC-MR1. Rotary Table Station: Feeding, Quality Control and Assembly (dimensional study).

AE-PLC-MR2. Rotary Table Station: Feeding, Quality Control, and Assembly (material and color study).

AE-PLC-MR3. Rotary Table Station: Automated Processing Control (drilling and polishing study).

AE-PLC-MR4. Rotary Table Station: Filling, Bottling and Capping.

6.2.5.4. PIECES MANIPULATOR WORKSTATIONS APPLICATIONS

AE-PLC-MPS. Pieces Manipulator Workstation.

AE-PLC-T. Linear Transport Workstation.

AE-PLC-SPO. Positioning Workstation.

AE-PLC-MAE. Electrical Handling Workstation.

AE-PLC-MAN. Pneumatic Handling Workstation.

AE-PLC-CTCA. AC Conveyor Belt Workstation.

AE-PLC-CTCC. DC Conveyor Belt Workstation.

AE-PLC-MACT. Pneumatic Handling and Conveyor Belt.

6.2.5.5. ROBOTIC WORKSTATIONS APPLICATIONS

AE-BR. Robotic Arm Workstation.

AE-SCA. SCARA Arm Workstation.

6.2.5.6. PIECES IDENTIFICATION WORKSTATIONS APPLICATIONS

AE-PLC-SIP. Pieces Identification Workstation.

AE-PLC-VS. Quality Control Workstation.

AE-PLC-CF. Sorting Workstation.

AE-PLC-SLB. Ball Selection Workstation.

AE-PLC-RFID. RFID identification Workstation.

AE-PLC-CPD. Defective Pieces Sorter Workstation Application.

AE-PLC-MACT. Pneumatic Handling and Conveyor Belt.

6.2.5.8. STORING WORKSTATIONS APPLICATIONS

AE-PLC-AL. Storage Workstation.

AE-PLC-ALT. Buffer Workstation.

AE-PLC-ALB. Bottling Storage Workstation.

AE-PLC-ALV. Vertical Storage Workstation.

AE-PLC-SPO. Positioning Workstation. **AE-PLC-CTCC.** DC Conveyor Belt Workstation. **AE-PLC-ALV.** Vertical Storage Workstation.

6.2.6. FLEXIBLE MANUFACTURING SYSTEMS WITH PLC

AE-PLC-FMS1. Flexible Manufacturing System 1.

AE-PLC-FMS2. Flexible Manufacturing System 2.

AE-PLC-FMS3. Flexible Manufacturing System 3.

AE-PLC-FMS4. Flexible Manufacturing System 4.

AE-PLC-FMS5. Flexible Manufacturing System 5.

AE-PLC-FMS6. Flexible Manufacturing System 6.

AE-PLC-FMS7. Flexible Manufacturing System 7.

AE-PLC-FMS8. Flexible Manufacturing System 8.

AE-PLC-FMS9. Flexible Manufacturing System 9.

AE-PLC-FMS10. Flexible Manufacturing System 10.

AE-PLC-FMS11. Flexible Manufacturing System 11.

AE-PLC-FMS12. Flexible Manufacturing System 12.

AE-PLC-FMS13. Flexible Manufacturing System 13.

AE-PLC-FMS14. Flexible Manufacturing System 14.

AE-PLC-FMS15. Flexible Manufacturing System 15.

7 MECHANICS

7.1. MECHANICAL ENGINEERING

7.1.1. MECHANICS FUNDAMENTALS KITS

LIMEBA. Basic Mechanics Integrated Laboratory

MECA/EC. Panel and Common Elements Case for LIMEBA

★ ***REQUIRED ELEMENTS FOR MECA/EC*** *(At least one is required):*

MECA1. Statics Experiments

MECA2. Load Elevation Mechanisms Experiments

MECA3. Transmissions Experiments

MECA4. Dynamics Experiments

MECA5. Friction Experiments

MECA6. Special Mechanisms Experiments

7.1.2. SIMPLE MACHINES

7.1.2.1. MECHANISMS

MBD. Slider Crank Mechanism

MYE. Scotch Yoke Mechanism

MBM1. Slotted Link Mechanism

MBM2. Whitworth Quick Return Mechanism

MCA. Four-Bar Mechanism

MME. Geneva Stop Mechanism

MAC. Coupling Mechanism

MUN. Hooke's Joint Mechanism

MEX. Cam and Follower Mechanism

MBI. Crank Mechanism

MDA. Ackermann Steering Mechanism

MMEL. Winch Mechanism

MBLU. Bar Linkages Unit

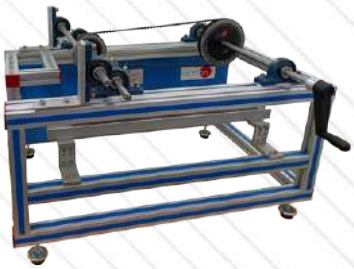
7.1.2.2. GEARS

MTSF. Worm and Wheel Unit

MAE. Acceleration of Geared System Unit

MSDA. Simple Drives Assembly Unit

MCDA. Combined Drives Assembly Unit

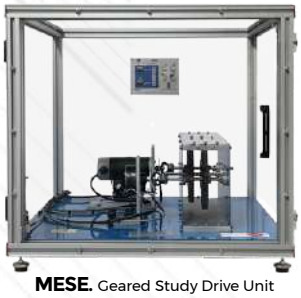


MGTA. Gear Train Assembly Unit

MGE. Gear Generation Unit

MEE. Geared Lifting Unit

MESE-T. Geared Study

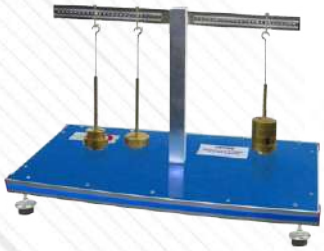


MESE. Geared Study Drive Unit

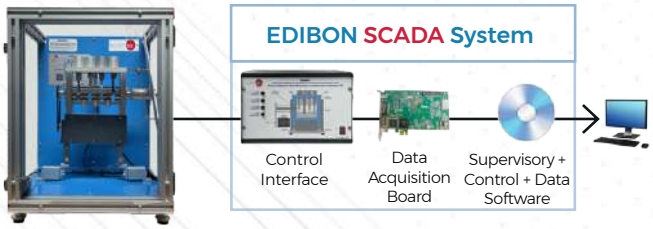
KSGT. Unit for the Kinematic Study of Gear Trains

7.1.3. STATICS AND DYNAMICS

MEMB2. Unit for studying Equilibrium of Moments on a Two Arm Lever

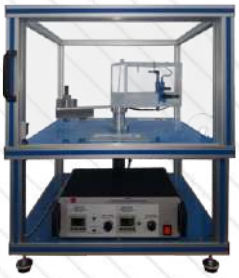


MBMRC. Computer Controlled Balance of Reciprocating Masses Unit



MEAL. Cam Analysis Unit

MDFC. Coriolis Force Demonstration Unit



MFCE. Centrifugal Force Unit

MGI. Gyroscope

CGU. Centrifugal Governor Unit

MED. Static and Dynamic Balancing Unit

MES. Simple Balancing Unit

MIF. Inertia Flywheel Unit

MRYE1. Wheel and Axle Unit

MRYE2. Wheel and Differential Axle Unit

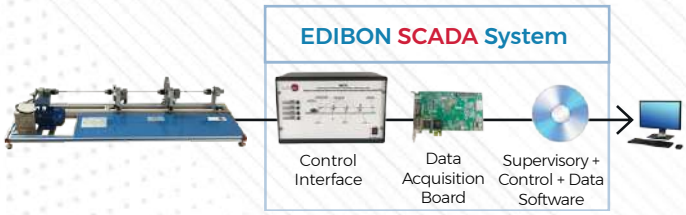
MELH. Unit for studying Hooke´s Law

MSHU. Simple Harmonic Motion Unit

SRI. Unit to Study Rotational Inertia

7.1.4. VIBRATIONS AND OSCILLATIONS

MEVTC. Computer Controlled Torsional Vibration Unit



MVRE. Vibration of Coil Spring Unit

MVL. Free Vibration Unit

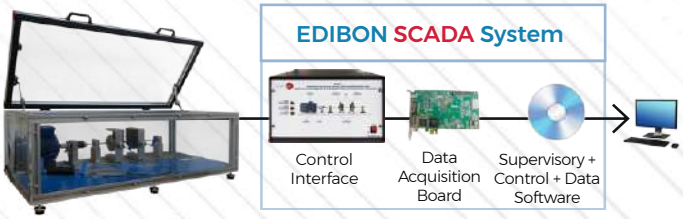
MVLF. Free & Forced Vibration Unit

MEVLB. Unit for Studying Free Vibration of a Bar

MSHU. Simple Harmonic Motion Unit

MOT. Torsional Oscillations Unit

MVCC. Computer Controlled Critical Speed Investigation Unit



MEER. Whirling of Shafts Unit

7.1.5. TRIBOLOGY (FRICTION, WEAR, LUBRICATION)

MCF. Belt Friction Unit

MEF. Friction Study Unit

MPCO. Journal Bearing Unit

MEMT. Tribology Modular Unit

Complete configuration example for MEMT

MEMT-UB. Drive Unit for Tribological Tests

MEMT-1. Radial Pressure Distribution in a Journal Bearing

MEMT-2. Dynamic Friction of a Cylinder on a Roller

MEMT-3. Dynamic Friction of a Pin on a Disc

MEMT-4. Rolling Friction in Wheels

MEMT-5. Elastohydrodynamic Lubrication

MEMT-6. Friction Vibration

MCD. Thin Cylinder Unit

MBF. Unit for Studying Bearing Friction

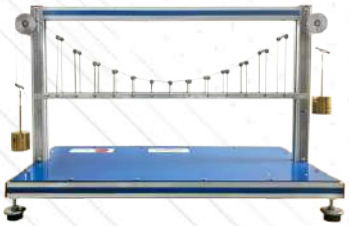
MCF/A. Belt Friction Unit with Dynamometers

MCPG. Thick Walled Cylinder Unit

7.1.6. STRUCTURAL MECHANICS

MFPG. Unit for studying Forces in a Jib Crane

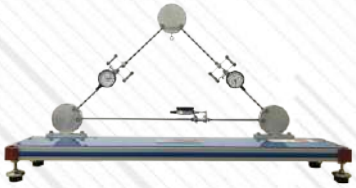
MVS. Suspension Bridge Unit



MARP. Parabolic Arch Unit

MART. Three-Hinged Arch Unit

MFBS. Unit for Studying Forces in a Simple Bar Structure



MFCS1. Unit for studying Forces in Different Single Plane Trusses

MFCS2. Unit for studying Forces in an Overdeterminate Truss

MFCS3. Unit for studying Deformation of Trusses

MCPG. Thick Walled Cylinder Unit

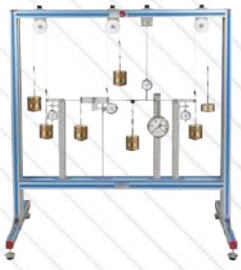
MFL. Two Hinged Arch Unit

MPO. Portal Frame Unit

STH. Stress Hypotheses Unit

MEPE. Simple Stability Problems Study Unit

MDLE. Unit for studying Methods to Determine the Elastic Line



MCD. Thin Cylinder Unit

SSM. Unit to Study Stress on a Membrane

MVV. Unsymmetrical Cantilever Unit

MDB. Deflection of Curved Bars Unit

MFV. Beam Deflection Unit

MFLT. Strut Buckling Unit

MEBM. Euler Buckling Modes Unit

MUP. Universal Buckling Unit

MMF. Shear Force and Bending Momentum Unit

7.2. AUTOMOTIVE MECHANICAL ENGINEERING

7.2.1. BRAKES AND CLUTCHES

MFT. Drum Brake Unit

MFD. Disc Brake Unit

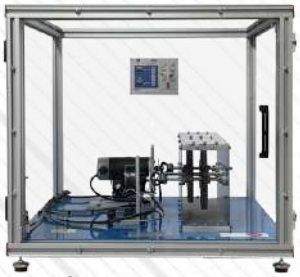
MFF. Braking and Accelerating Forces Unit

MEM. Plate Clutch

MSH. Simple Hydraulic Unit

7.2.2. GEARS, DIFFERENTIALS AND TRANSMISSIONS

MESE-T. Geared Study



MESE. Geared Study Drive Unit

MCC. Gearbox

MTE1. Epicyclic Gear Unit (1 element)

MTE2. Epicyclic Gear Unit (2 elements)

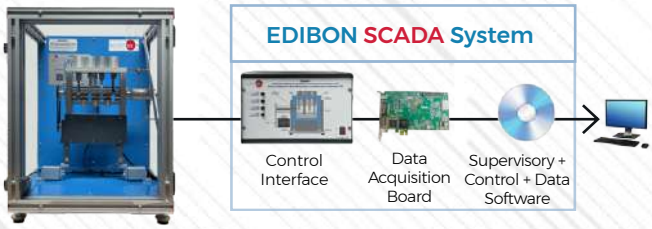
MTE3. Epicyclic Gear Unit (3 elements)

MBW. Borg-Warner Automatic Transmission

MDC. Differential-Crownwheel and Pinion

MEC. Overdrive Unit

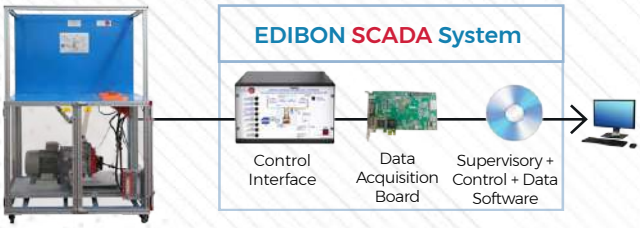
MBMRC. Computer Controlled Balance of Reciprocating Masses Unit



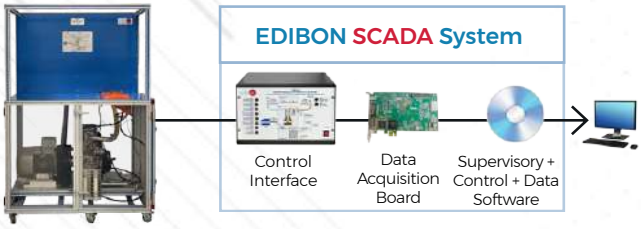
MED. Static and Dynamic Balancing Unit

7.2.3. ENGINES

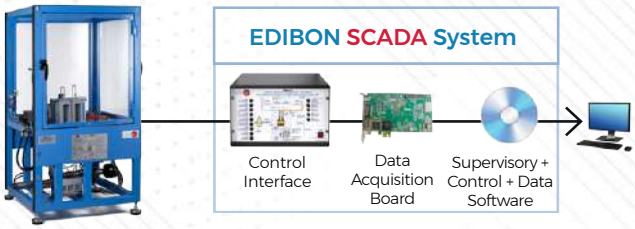
TBMC3. Computer Controlled Test Bench for 2.2 kW Engines



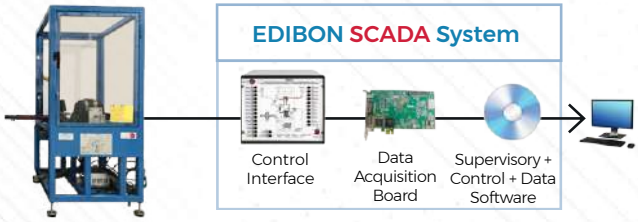
TBMC8. Computer Controlled Test Bench for 7.5 kW Engines



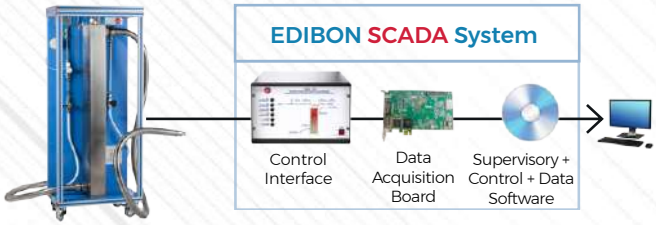
TBMC12. Computer Controlled Test Bench for 11 kW Engines



TBMC75. Computer Controlled Test Bench for 75 kW Engines



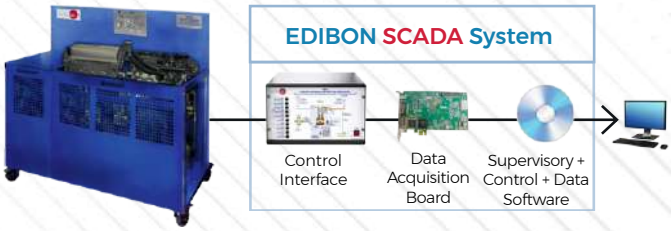
TBMC-CG. Computer Controlled Exhaust Gas Calorimeter



TBMC-AGE. Exhaust Gas Analyzer

TBMC-AGE/NOx. Exhaust Gas Analyzer (NOx)

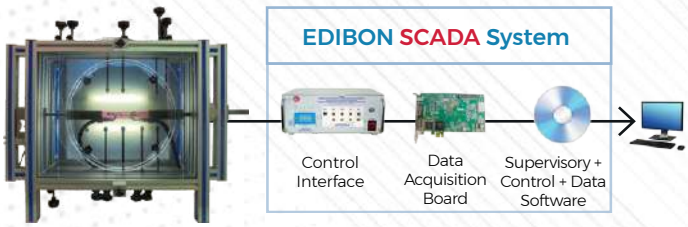
TMHC. Computer Controlled Test Bench for Hybrid Engine



7.3. MATERIALS ENGINEERING

7.3.1. PHOTOELASTICITY AND STRAIN MEASUREMENT

EFOC. Computer Controlled Photoelasticity Unit



MEGE. Strain Gauge Training Unit

MFGE. Unit for Determining the Gauge Factor of Strain Gauges

PSD. Photoelastic Stress Demonstration Unit

7.3.2. MATERIALS TESTING

7.3.2.1. MECHANICAL TEST

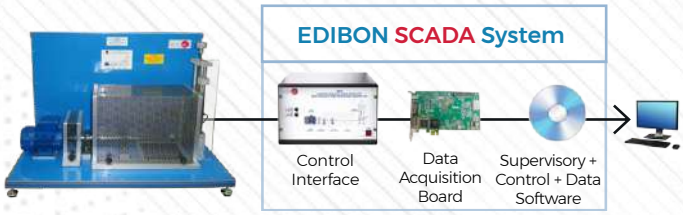
EEU/20KN. Universal Material Testing Unit

EEDB. Brinell Hardness Testing Unit

EBVR. Brinell, Vickers & Rockwell Hardness Testing Unit

EEFCR. Creep Testing Unit

EEFC. Computer Controlled Fatigue Testing Unit



EEICI. Charpy and Izod Impact Testing Unit

MUP. Universal Buckling Unit

MFLT. Strut Buckling Unit

MEBM. Euler Buckling Modes Unit

MTP. Torsion and Bend Unit

MTB. Torsion Unit

MTT. Torsion Test Unit (30Nm)

MTTU. Tensile Tester Unit

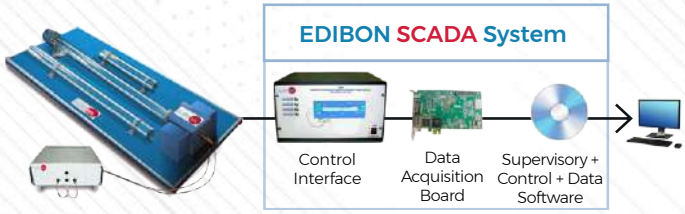
MDB. Deflection of Curved Bars Unit

MFV. Beam Deflection Unit

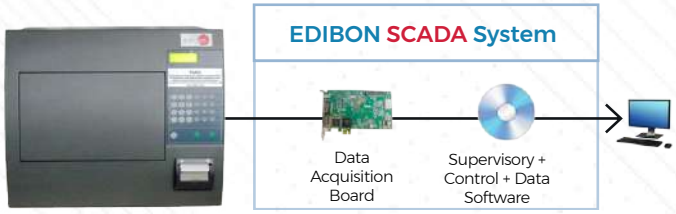
MMF. Shear Force and Bending Momentum Unit

7.3.2.2. THERMAL AND ACOUSTIC TESTS

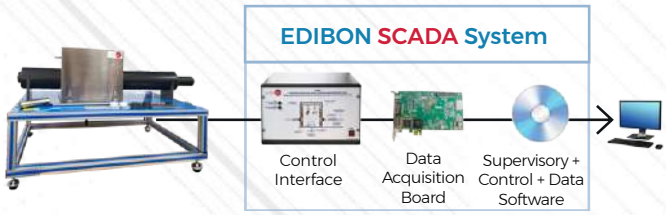
TIAC. Computer Controlled Acoustic Impedance Tube/ Acoustic Insulation Test Unit

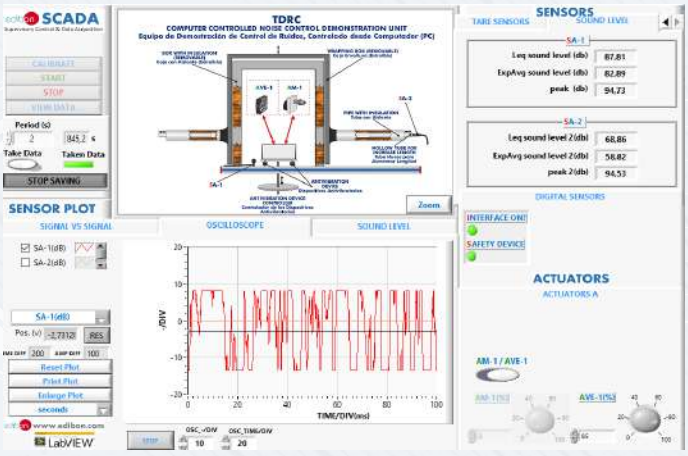


TCMC. Computer Controlled Thermal Conductivity of Building and Insulating Materials Unit



TDRC. Computer Controlled Noise Control Demonstration Unit





Some **SOFTWARE RESULTS** screens

7.3.3. MANUFACTURING AND TREATMENT TECHNIQUES

7.3.3.1. CASTING

MCAM. Practical Casting Kit: Modeling and Sand Casting of Solid Parts

MCLA. Practical Casting Kit: Modeling and Sand Casting of Hollow Parts

MCEN. Practical Casting Kit: Centrifugal Casting

7.4. INSTALLATIONS AND MAINTENANCE

7.4.1. CUTAWAY MODELS

CMTM. Cutaway Models of Transmission of Motion Units

★ ***AVAILABLE VERSIONS***

WGCM. Unit to Study a Worm Gear Cutaway Model

MGCM. Unit to Study a Mitre Gear Cutaway Model

SGCM. Unit to Study a Spur Gear Cutaway Model

SGCM/2. Unit to Study a Two-Stage Spur Gear Cutaway Model

PGCM. Unit to Study a Planetary Gear Cutaway Model

BDCM. Unit to Study a Variable Speed Trapezoidal Belt Drive Cutaway Model

CGCM. Unit to Study a Control Gear Cutaway Model

DCCM. Unit to Study a Multiple-Disc Clutch Cutaway Model

BCM. Unit to Study a Bearing Cutaway Model

7.4.2. DETACHABLE MODELS

SJBA. Unit to Study a Shaft with Journal Bearings Assembly

HJBA. Unit to Study a Hydrodynamic Journal Bearing Assembly

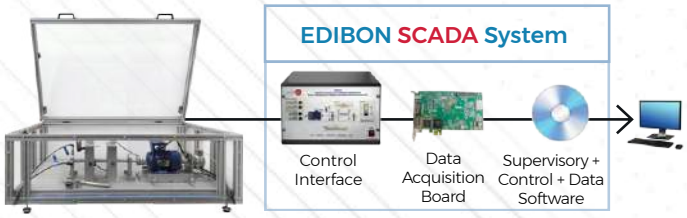
SGA. Spur Gear Assembly Unit

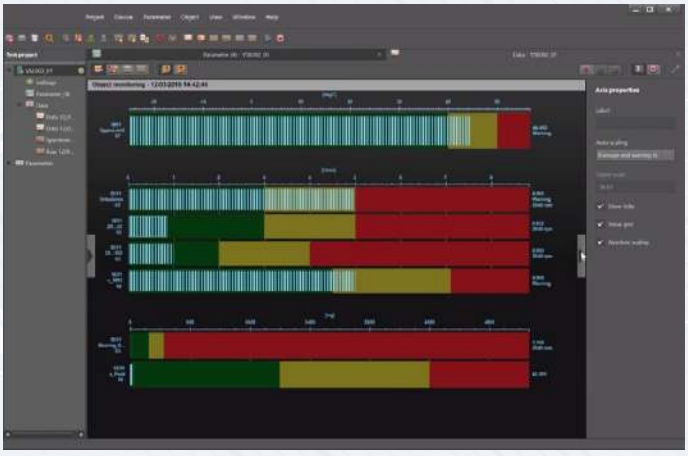
CGA. Combined Gear Assembly Unit

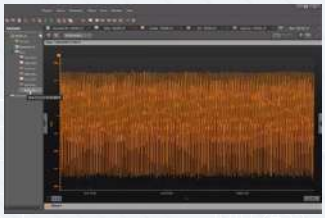
7.4.3. INSTALLATIONS AND MAINTENANCE TRAINING

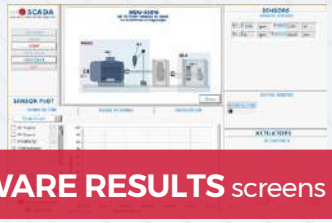
ADSG. Drive, Shaft, and Gear Alignment Unit

MDUC. Computer Controlled Machine Diagnosis Unit









Some **SOFTWARE RESULTS** screens

7.4.3. INSTALLATIONS AND MAINTENANCE TRAINING

MDU. Machine Diagnosis

MDU-UB. MDU Base Unit

★ *REQUIRED ELEMENTS FOR MDU-UB (Required: "MDU-SSC". Of the rest of the elements, additionally, only one is required):*

MDU-MLB. Mobile Structure for MDU

MDU-SM. Top Table Structure for MDU

MDU-SSC. Software, Sensors and Control for MDU Unit

MDU-BLU. Break and Load Unit

MDU-SES. Set of Elastic Shaft

MDU-SRS. Set of Rotating Shaft with Crank

MDU-SRBF. Set of Roller Bearings with Faults

MDU-SCO. Set of Couplings

MDU-SBD. Set of Belt Drive

MDU-SSDG. Set to Study Damage in Gears

MDU-SCM. Set of Crank Mechanism

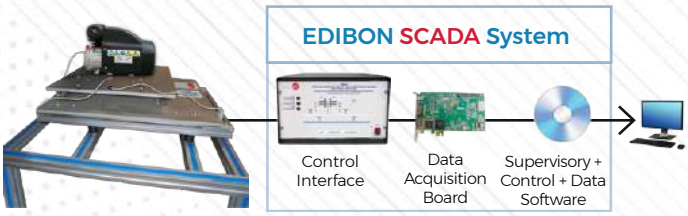
MDU-SSCP. Set to Study Cavitation in Pumps

MDU-SSVF. Blower Vibration Set for MDU

MDU-SEV. Set of Electromechanical Vibrations

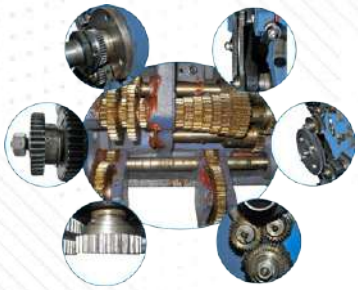
MDU-SD. Displacement Sensors for MDU Unit

VMSC. Computer Controlled Unit to Study Vibrations in Machine Supporting Structures



MSCT. Screw Joint Testing Unit

MSLG. Unit to Study Lathe Gears



MDSU. Basic Unit of Mechanical Drive Systems

RGT. Rigging Training Unit

8 FLUID MECHANICS

8.1. FLUID MECHANICS MODULAR LABORATORY

8.1.1. BASE UNITS

LIFLUBA. Basic Fluids Mechanics Integrated Laboratory

Complete configuration example for LIFLUBA

★ ***UNITS AVAILABLE***

FME00. Hydraulics Bench

FME00/B. Basic Hydraulic Feed System

8.1.2. MEASUREMENT

FME02. Flow over Weirs

FME10. Dead Weight Calibrator

FME37. Flowmeter Calibrator

FME18. Flow Meter Demonstration

FME26. Depression Measurement System (vacuum gauge)

FME30. Transparent Vortex Flow Meter

FME30/I. Vortex Flow Meter

FME32. Static Pitot Tube

FME34. Fluid Statics and Manometry

FME36. Rotameter

BDAS. Data Acquisition System and Sensors

8.1.3. HYDROSTATICS

FME08. Hydrostatic Pressure

FME11. Metacentric Height Demostration

FME11-A. Metacentric Height Demostration of a "V" Shaped Floating Body

FME11-B. Metacentric Height Demostration of a "U" Shaped Floating Body

FME33. Pascal's Principle Demonstration

FME35. Fluid Properties

BDAS. Data Acquisition System and Sensors

8.1.4. HYDRODYNAMICS

FME01. Jet Impact on Surfaces

FME03. Bernoulli's Theorem Demonstration

FME04. Orifice Discharge

FME14. Free and Forced Vortex

FME17. Orifice and Free Jet Flow

FME19. Cavitation Phenomenon Demonstration

FME22. Venturi, Bernoulli and Cavitation Unit

BDAS. Data Acquisition System and Sensors

8.1.5. FLOW VISUALIZATION

FME06. Osborne Reynolds' Demonstration

FME09. Flow Visualization in Channels

FME20. Laminar Flow Demonstration

FME25. Flow channel, lenght: 1 m

FME31. Horizontal Osborne Reynolds Demonstration

BDAS. Data Acquisition System and Sensors

8.1.6. HYDRAULIC MACHINES: PUMPS

FME12. Series/Parallel Pumps

FME13. Centrifugal Pump Characteristics

FME38. Hydraulic Ram Pump

BDAS. Data Acquisition System and Sensors

8.1.7. HYDRAULIC MACHINES: TURBINES

FME16. Pelton Turbine

FME21. Radial Flow Turbine

FME27. Axial Flow Turbine

FME28. Francis Turbine

FME29. Kaplan Turbine

BDAS. Data Acquisition System and Sensors

8.1.8. HYDRAULIC PIPING SYSTEM

FME05. Energy Losses in Bends

FME07. Energy Losses in Pipes

FME15. Water Hammer

FME23. Basic Pipe Network Unit

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

BDAS. Data Acquisition System and Sensors

8.2. MEASUREMENT

FMDU. Flow Meters Demonstration Unit

HEMP. Pressure Measurement Unit

HVB. Drop Ball Viscometer and Resistance Coefficient Determination Unit

HCMP. Precision Pressure Gauge Calibrator

TMCP. Pressure Measurement and Calibration Unit

SCSP. Pressure Sensors Calibration System

HMM. Manometers & Multimanometers (several types):

Complete configuration example for HMM

★ AVAILABLE VERSIONS

HMM-W500.	U-Shape Double Manometer.
HMM-U1000.	U-Shape Manometer.
HMM-I1000.	Inclined Multimanometer with 20 manometric tubes of 250 mm length.
HMM-V500.	Multimanometer with 8 manometric tubes of 500 mm length, vertical position.
HMM-V500-12.	Multimanometer with 12 manometric tubes of 500 mm lenght, vertical position.
HMM-4B.	4 Bourdon type Manometers Unit.

8.3. HYDROSTATICS

BHI. Hydrostatics Bench & Fluid Properties

USSB. Unit for Ship Stability Studies

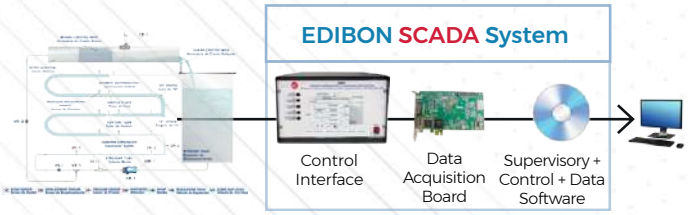
8.4. FLOW VISUALIZATION

UVF. Hydrogen Bubble Flow Visualization Unit

LFA. Laminar Flow Visualization and Analysis Unit

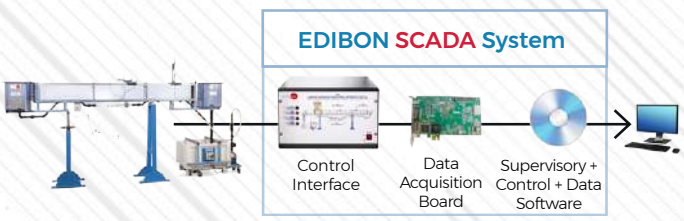
TAVF180/100. Flow Visualization Aerodynamic Tunnel

WFPC. Computer Controlled Unit to Study Water Flow Principles

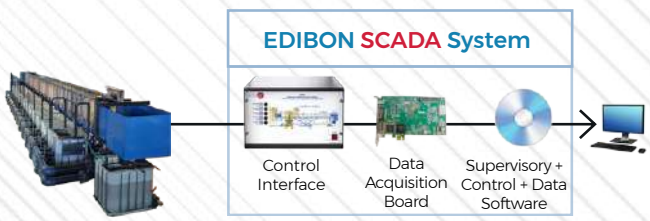


8.5. HYDRAULIC CHANNELS

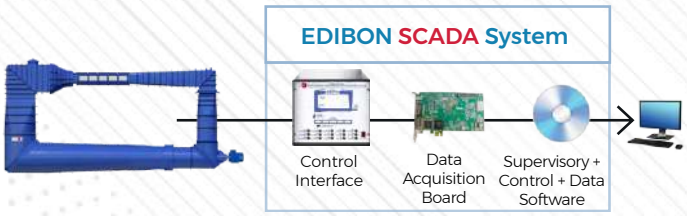
CFC. Computer Controlled Flow Channels (section: 80X300 mm)



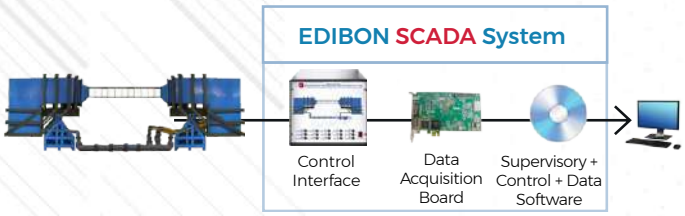
CFGC. Computer Controlled Flow Channels



HTHS150/150C. Computer Controlled Closed Hydrodynamic Tunnel for Hight Speed, 150X150 mm



HTLS150/150C. Computer Controlled Closed Hydrodynamic Tunnel for Low Speed, 150X150 mm

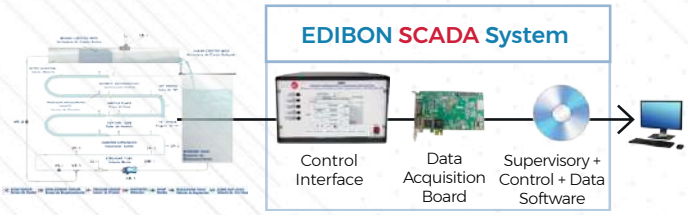


CAS. Sediment Transport Demonstration Channel

HVFLM-2. Mobile Bed and Flow Visualization Unit (working section: 2000X610 mm)

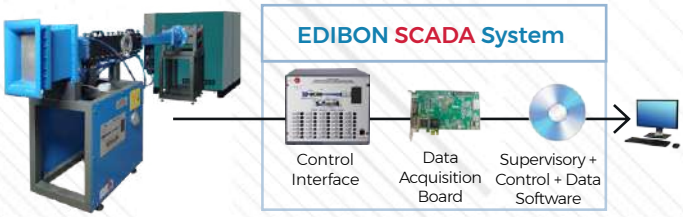
HVFLM-4. Mobile Bed and Flow Visualization Unit (working section: 4000x610 mm)

WFPC. Computer Controlled Unit to Study Water Flow Principles

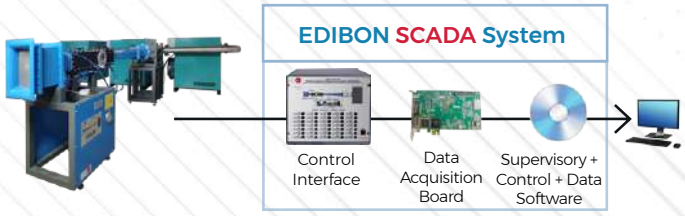


8.6. AERODYNAMICS

TAS25/100C. Computer Controlled Supersonic Wind Tunnel

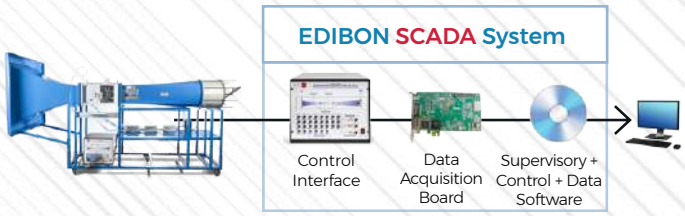


TAS25/100C-3B. Computer Controlled Supersonic Wind Tunnel (Three Blowers)

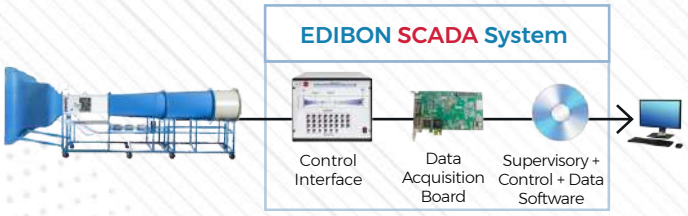


TA50/250C. Computer Controlled Aerodynamic Tunnel, 50X250 mm

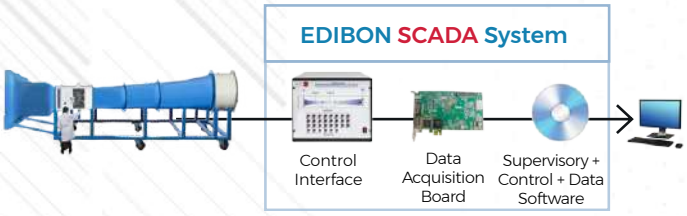
TA300/300C. Computer Controlled Aerodynamic Tunnel, 300X300 mm



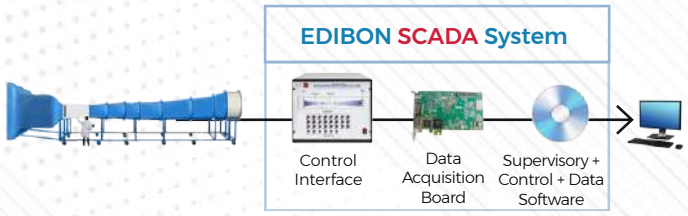
TA610/915C. Computer Controlled Aerodynamic Tunnel, 610X915 mm



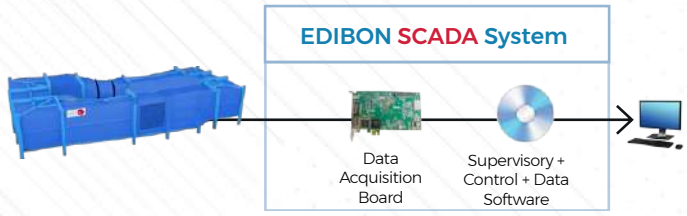
TA1000/1000C. Computer Controlled Aerodynamic Tunnel, 1000X1000 mm



TA1200/1200C. Computer Controlled Aerodynamic Tunnel, 1200X1200 mm



TACL2000/2000C. Computer Controlled Closed Aerodynamic Tunnel, 2000X2000 mm



TAVF180/100. Flow Visualization Aerodynamic Tunnel

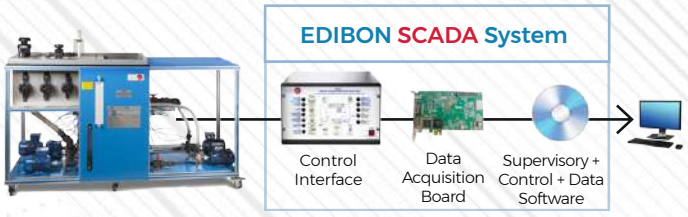
TADV225/450. Wind Tunnel Flight Demonstration Unit

ATBB. Aerodynamic Testing Bench

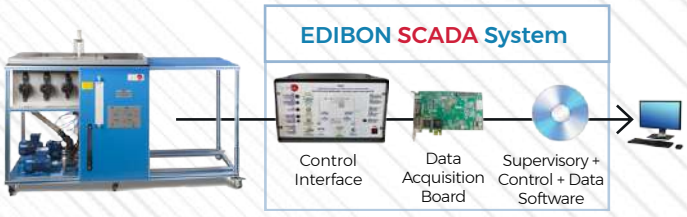
8.7. FLUID MACHINES

8.7.1. PUMPS

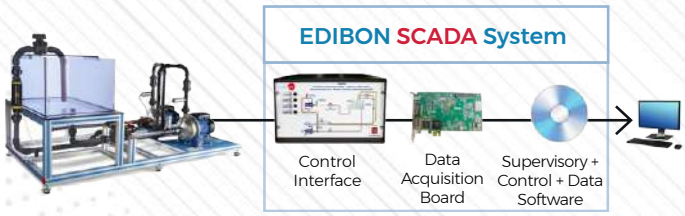
PBOC. Computer Controlled Multipump Testing Bench (4 types of pumps)



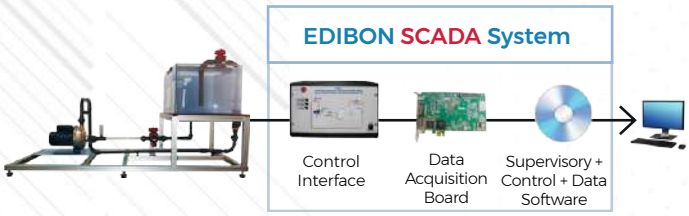
PB2C. Computer Controlled Multipump Testing Bench (2 types of pumps)



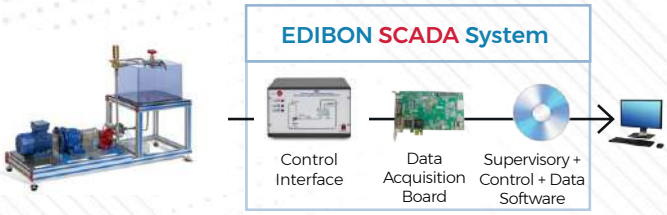
PBSPC. Computer Controlled Series/Parallel Pumps Bench



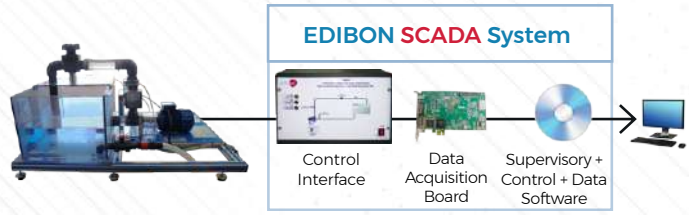
PBCC. Computer Controlled Centrifugal Pump Bench



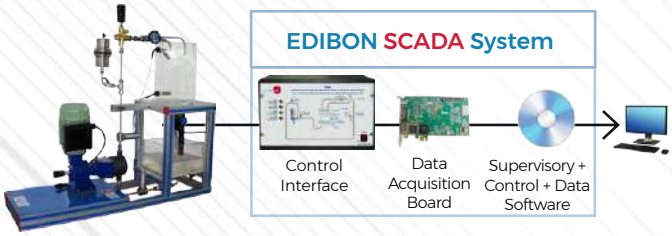
PBEC. Computer Controlled Gear Pump Bench



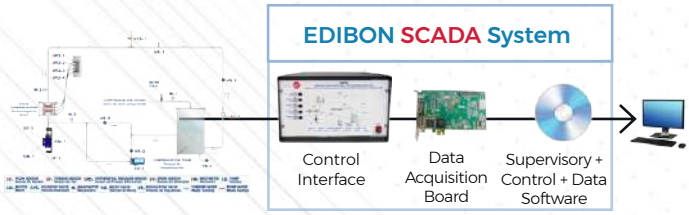
PBAC. Computer Controlled Axial Pump Bench



PBRC. Computer Controlled Piston Pump Bench



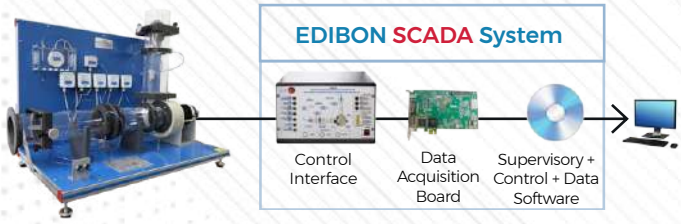
HMFAC. Computer Controlled Axial Flow Turbomachines Unit



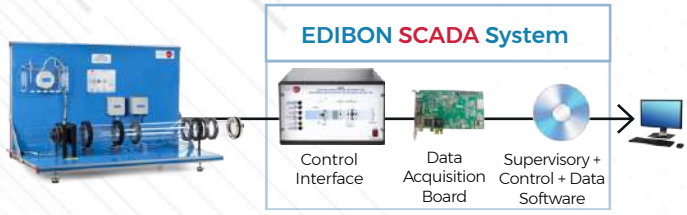
PBEAB. Pumps Alignment and Study Bench

8.7.2. FANS

HVCC. Computer Controlled Centrifugal Fan Teaching Unit

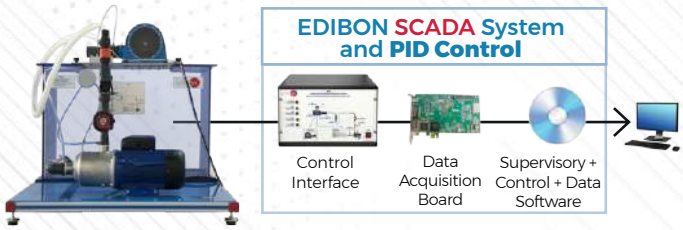


HVAC. Computer Controlled Axial Fan Teaching Unit

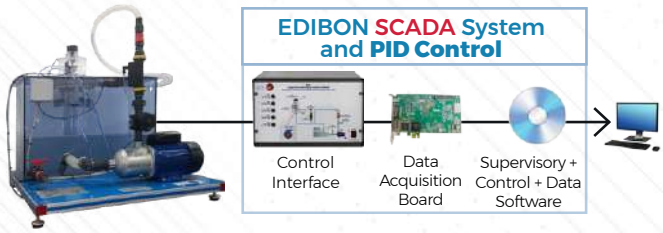


8.7.3. TURBINES

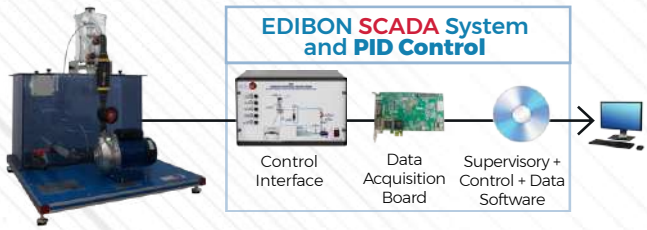
TPC. Computer Controlled Pelton Turbine



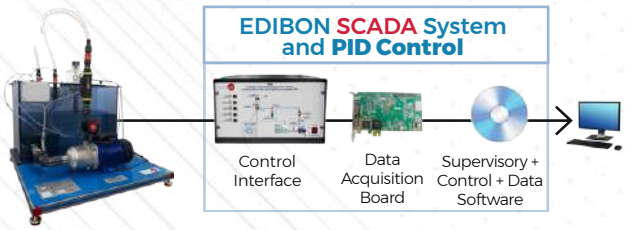
TFC. Computer Controlled Francis Turbine



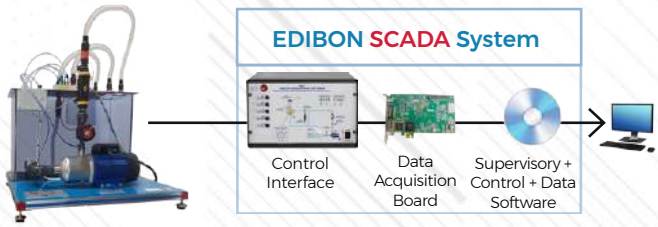
TKC. Computer Controlled Kaplan Turbine



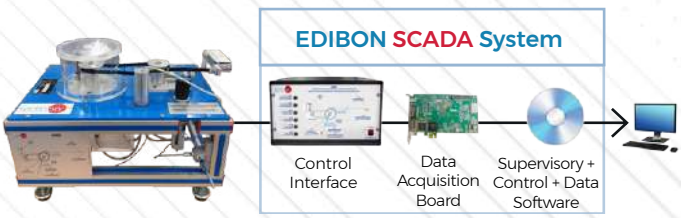
TFRC. Computer Controlled Radial Flow Turbine



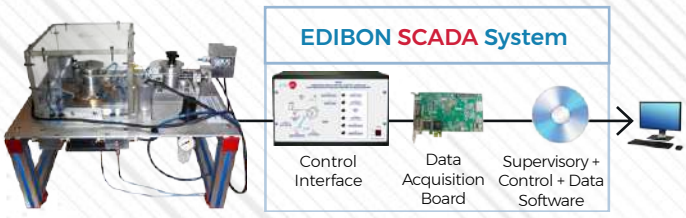
TFAC. Computer Controlled Axial Flow Turbine



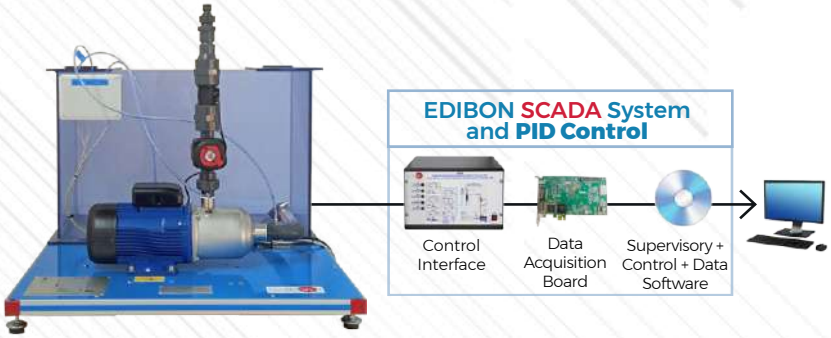
HTRC. Computer Controlled Experimental Reaction Turbine



HTIC. Computer Controlled Experimental Impulse Turbine



HTMC. Computer Controlled Hydraulic Turbines Modular Unit

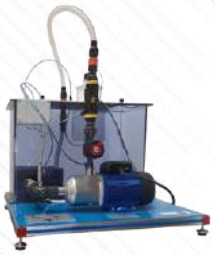


HT-UB. Hydraulic Turbines Base Unit

★ ***REQUIRED ELEMENTS FOR HT-UB*** *(Requires at least one turbine (HT-P, HT-F, HT-FA, HT-FR, HT-K) and at least one of the brakes (FEM, PB)):*

HT-F. Francis Turbine Model

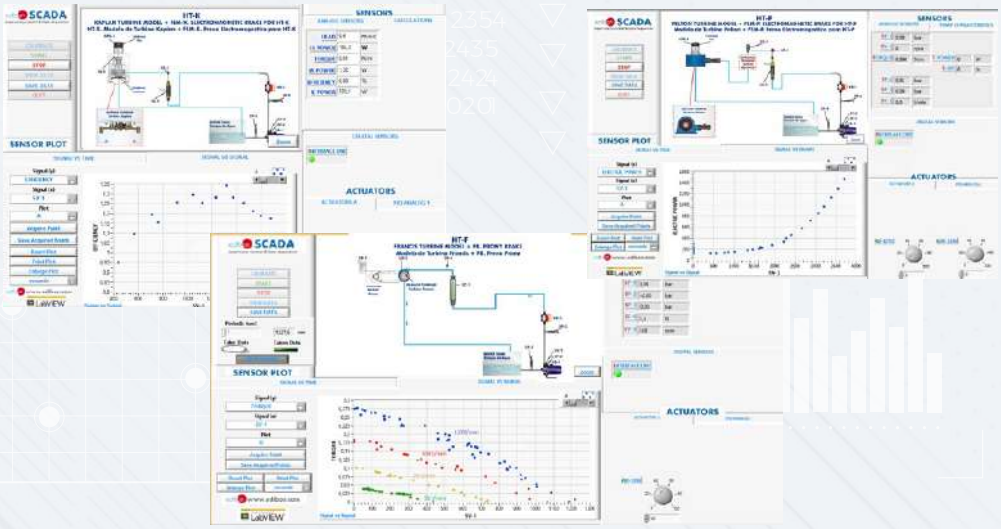
HT-FA. Axial Flow Turbine Model



HT-FR. Radial Flow Turbine Model

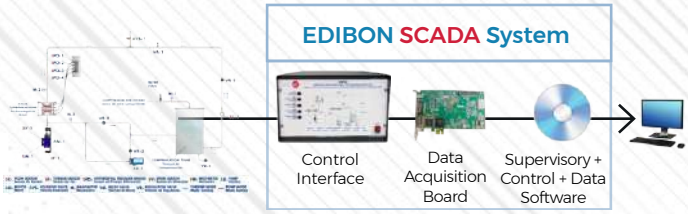
HT-P. Pelton Turbine Model

HT-K. Kaplan Turbine Model



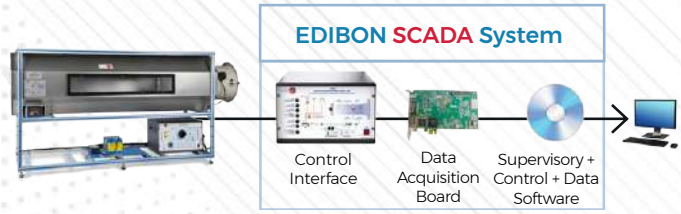
Some **SOFTWARE RESULTS** screens

HMFAC. Computer Controlled Axial Flow Turbomachines Unit

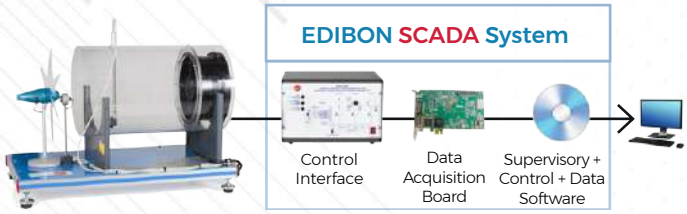


8.7.4. WIND TURBINES

EEEC. Computer Controlled Wind Energy Unit

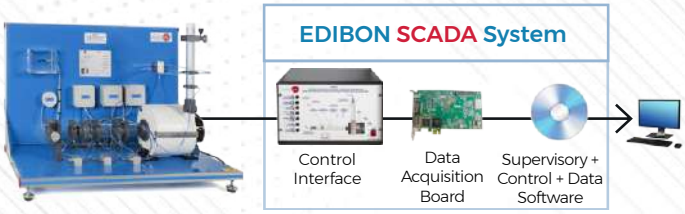


MINI-EEEC. Computer Controlled Wind Energy Basic Unit

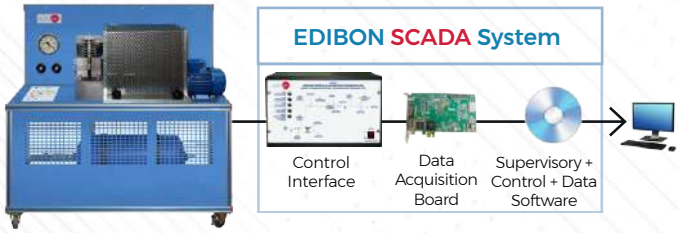


8.7.5. COMPRESSORS

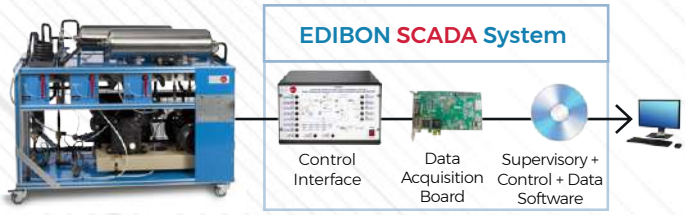
HCCC. Computer Controlled Centrifugal Compressor Demonstration Unit



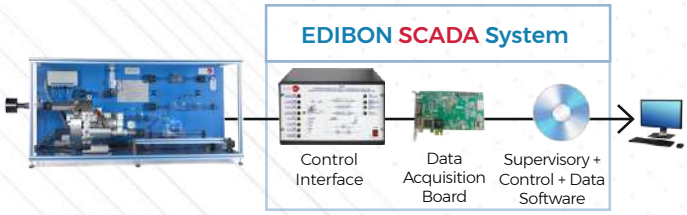
HCRC. Computer Controlled Reciprocating Compressor Unit



HCDEC. Computer Controlled Two-Stage Compressor Test Unit

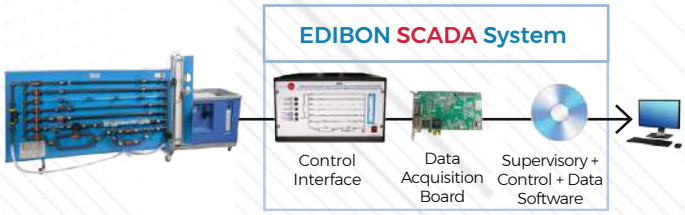


HFCC. Computer Controlled Flow of Compressible Fluids Unit



8.8. FLUID PIPING SYSTEM

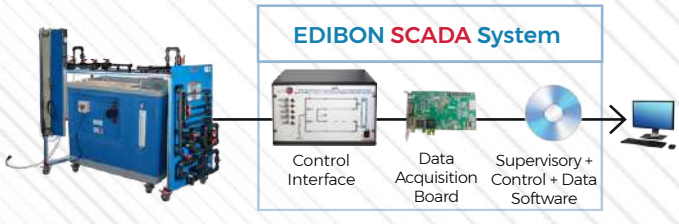
AFTC. Computer Controlled Fluid Friction in Pipes, with Hydraulics Bench (FME00)



AFT/B. Fluid Friction in Pipes Unit, with Basic Hydraulics Feed System (FME00/B)

AFT/P. Fluid Friction in Pipes Unit

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

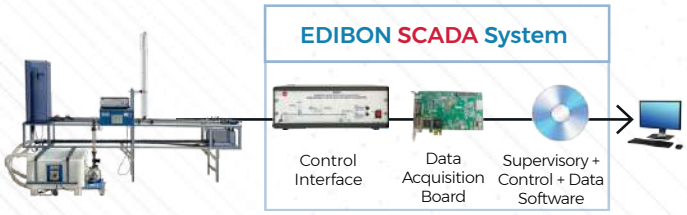


AMT/B. Pipe Network Unit, with Hydraulics Bench (FME00/B)

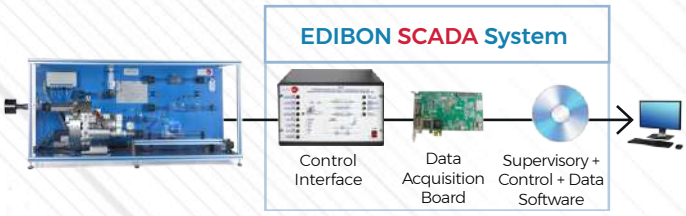
AMT/P. Mesh in Pipe Unit

PDCFP. Unit to Study the Pressure Drop of Compressible Fluids in Pipes

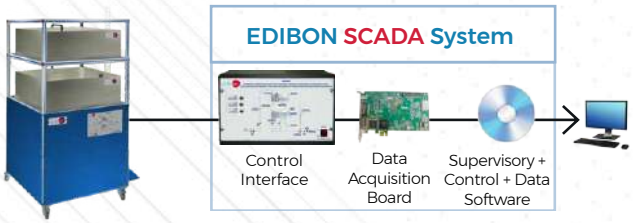
EGAC. Computer Controlled Water Hammer Unit



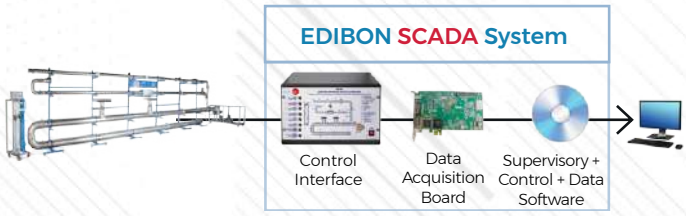
HFCC. Computer Controlled Flow of Compressible Fluids Unit



PDDRC. Computer Controlled Unit for Transient Drainage Processes in Storage Reservoirs

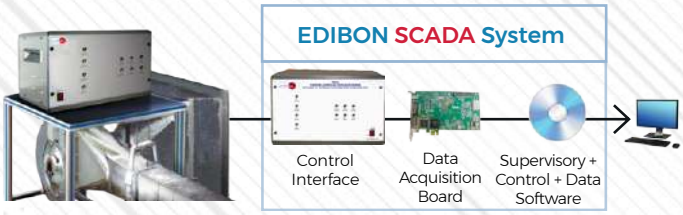


TSCAC. Computer Controlled Air Duct Systems Unit



HECA. Air Flow Studies Unit

TEVC. Computer Controlled Ventilation Unit



8.9. INSTALLATIONS AND MAINTENANCE

8.9.1. CUTAWAY MODELS

ANVCM. Unit to Study an Angular Needle Valve Cutaway Model

BVCM. Unit to Study a Ball Valve Cutaway Model

LNVCM. Unit to Study a Lift Non-return Valve Cutaway Model

NBVCM. Unit to Study a Non-return Butterfly Valve Cutaway Model

PMFCM. Unit to Study a Pipe Mesh Filter Cutaway Model

SNVCM. Unit to Study a Straight-way Needle Valve Cutaway Model

UHCM. Unit to Study an Underground Hydrant Cutaway Model

WMCM. Unit to Study a Water Meter Cutaway Model

CPCM. Centrifugal Pump Cutaway Model Unit

GPCM. Gear Pump Cutaway Model Unit

PPCM. Piston Pump Cutaway Model Unit

8.9.2. DETACHABLE MODELS

ASV. Assembly of a Shut-Off Valve Unit

AMCV. Assembly of a Motorized Control Valve Unit

ACPV. Assembly of a Control Pneumatic Valve Unit

AMP. Assembly and Maintenance of Pumps

AMCP. Assembly and Maintenance of a Centrifugal Pump Unit

AMMCP. Assembly and Maintenance of a Multistage Centrifugal Pump Unit

AMSP. Assembly and Maintenance of a Screw Pump Unit

AMDP. Assembly and Maintenance of a Diaphragm Pump Unit

AMPP. Assembly and Maintenance of a Piston Pump Unit

AMLCP. Assembly and Maintenance of an In-Line Centrifugal Pump Unit

AMGP. Assembly and Maintenance of a Gear Pump Unit

8.9.3. INSTALLATIONS AND MAINTENANCE

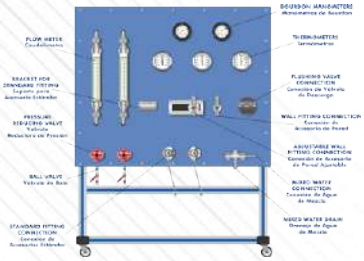
PVFA. Pipes, Valves and Fittings Assembly Unit

BFPT. Backflow Prevention Training Unit

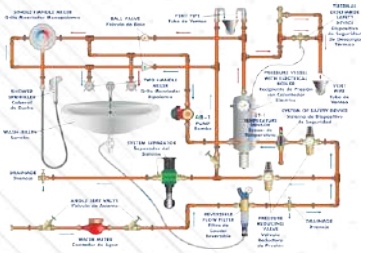
TEV3V. Three-Way Mixing Valve Training Unit

TEV4V. Four-Way Mixing Valve Training Unit

TEIS. Sanitary Fittings Training Unit



TIAP. Drinking Water Installation Unit

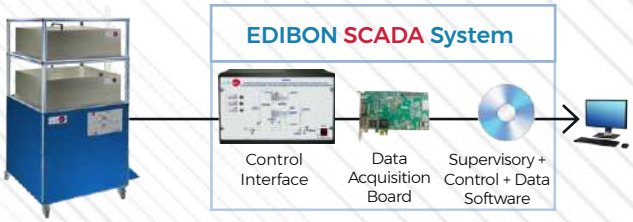


TPAP. Protection of Drinking Water Training Unit

TELT. Pipe Cleaning Training Unit

TSID. Sewerage Unit

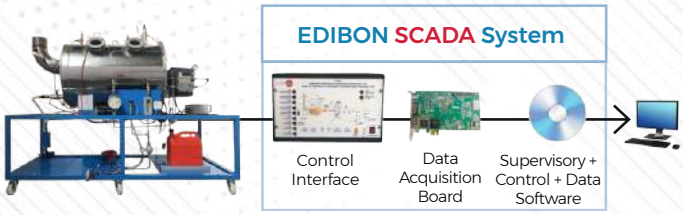
PDDRC. Computer Controlled Unit for Transient Drainage Processes in Storage Reservoirs



9 THERMODYNAMICS & THERMOTECHNICS

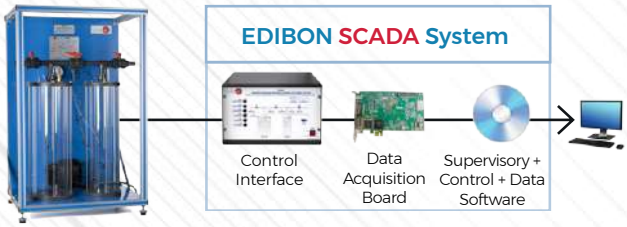
9.1. FUNDAMENTALS AND BASIC CONCEPTS OF THERMODYNAMICS

TVCC. Computer Controlled Combustion Laboratory Unit



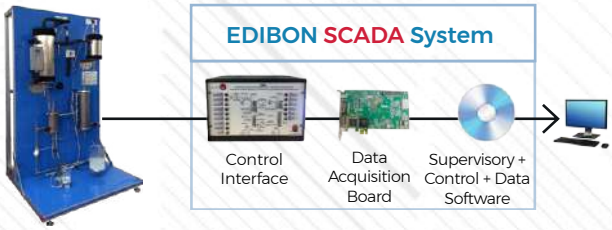
TEDT. Thermal Expansion Training Unit

TEPGC. Computer Controlled Expansion Processes of a Perfect Gas Unit

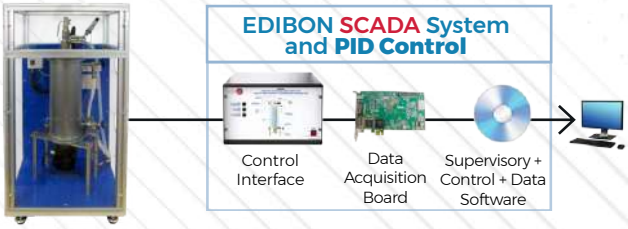


TBCF. Bomb Calorimeter

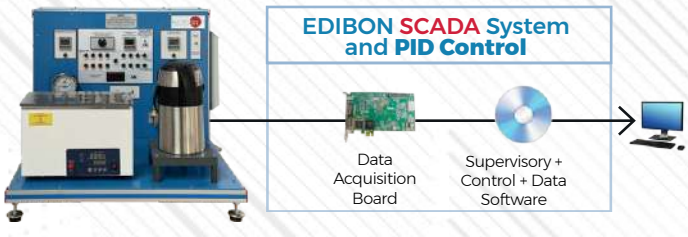
TCESC. Computer Controlled Separating and Throttling Calorimeter



TECMC. Computer Controlled Marcet Boiler Unit

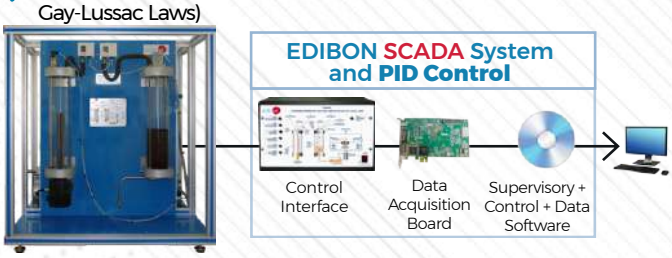


TMTC. Computer Controlled Temperature Measurement Unit

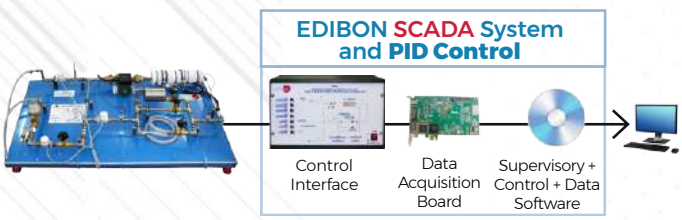


TEMT. Temperature Measurement Training Unit

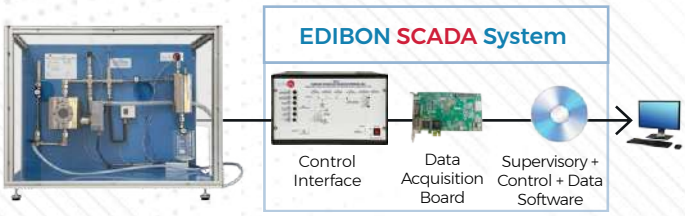
TLBGC. Computer Controlled Gas Laws Unit (Boyle and Gay-Lussac Laws)



TRLC. Computer Controlled Recycle Loops Unit

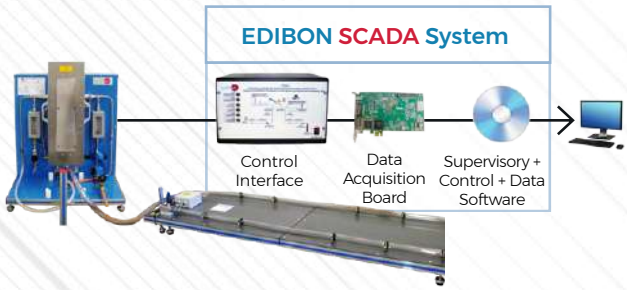


TSPC. Computer Controlled Saturation Pressure Unit

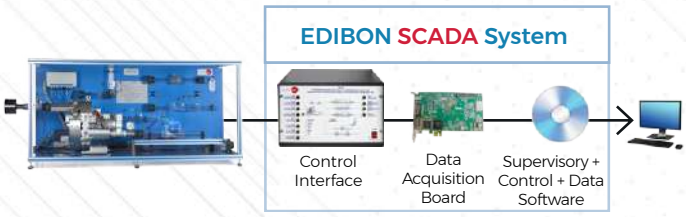


TMHA. Air Humidity Measurement Unit

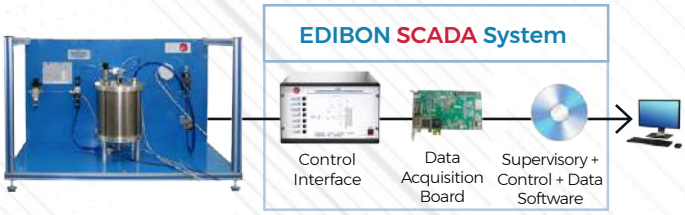
TVPLC. Computer Controlled Flame Propagation and Stability Unit



HFCC. Computer Controlled Flow of Compressible Fluids Unit



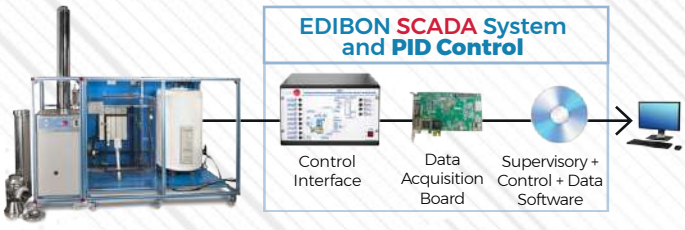
TFTC. Computer Controlled Nozzle Performance Test Unit



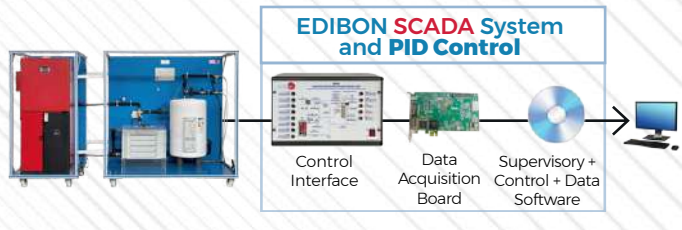
TPT. Nozzle Pressure Distribution Unit

9.2. HEATING, VENTILATION, AIR CONDITIONING AND HOT WATER

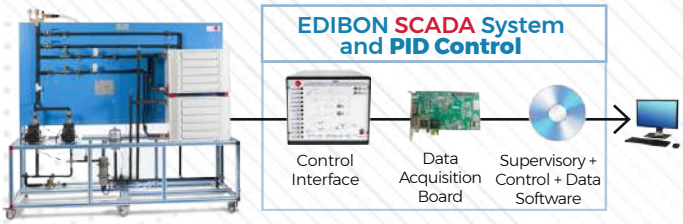
EACC. Computer Controlled Hot Water Production and Heating Teaching Unit



EBMC. Computer Controlled Biomass Process Unit



TEHSC. Computer Controlled Unit to Study the Efficiency of a Heating System



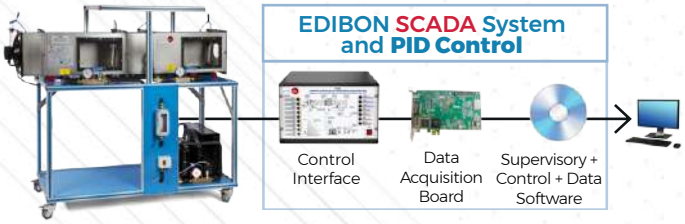
WHT. Water Heaters Training Unit

HPSE. Heat Pump for different Heat Sources and Heat Exchangers

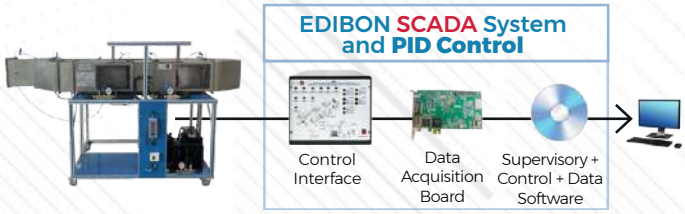
UHHS. Underfloor Heating and/or Heat Source for Heat Pump

FHAH. Fan Heater and/or Air Heat Exchanger

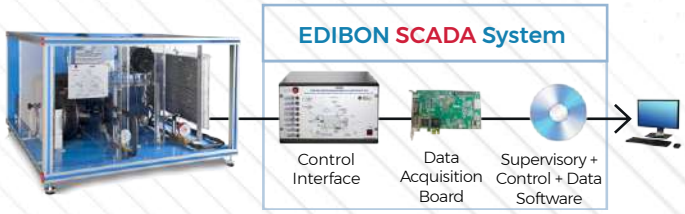
TAAC. Computer Controlled Air Conditioning Laboratory Unit



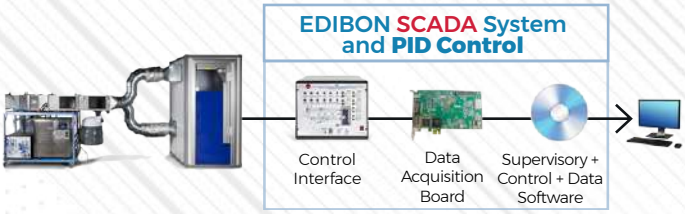
TARC. Computer Controlled Recirculating Air Conditioning Unit



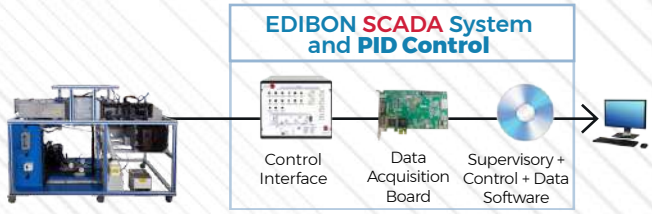
TAAUC. Computer Controlled Automobile Air Conditioning Unit



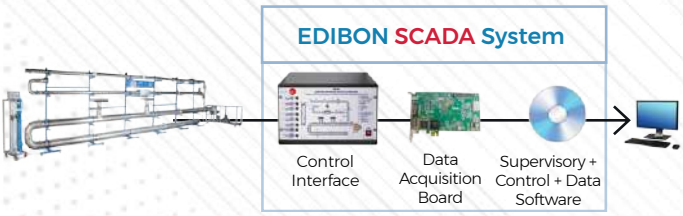
TACC. Computer Controlled Air Conditioning Unit with Climatic Chamber and Water Chiller



TSAC. Computer Controlled Air Conditioning Unit with Climatic Chamber



TSCAC. Computer Controlled Air Duct Systems Unit

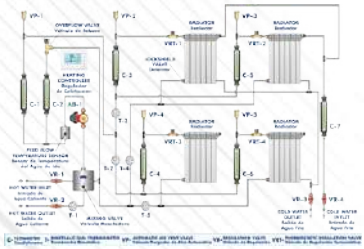


TACS. Split Air Conditioner Unit

TMHA. Air Humidity Measurement Unit

THBT. Hydraulic Radiator Balancing Training Unit

THST. Heating System Training Unit



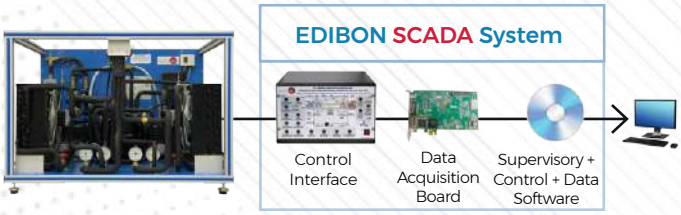
TCPT. Circulating Pumps Training Unit

TEVT. Expansion Vessel Training Unit

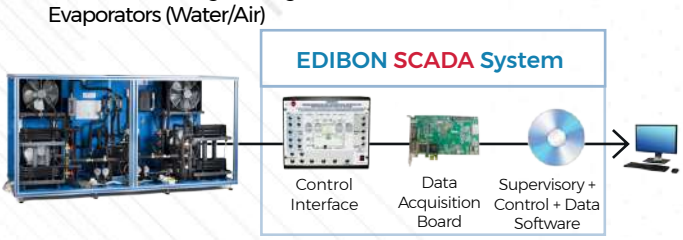
TPVST. Pressure Vessel and Safety Features Training Unit

9.3. HEAT PUMPS

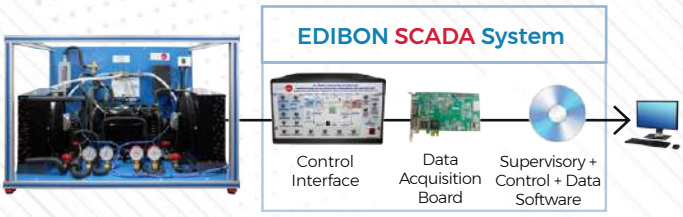
THIBAR22C. Computer Controlled Rerversible Heat Pump + Air Conditioning + Refrigeration with 2 Condensers and 2 Evaporators (Water/Air)



THIBAR44C. Computer Controlled Rerversible Heat Pump + Air Conditioning + Refrigeration with 4 Condensers and 4 Evaporators (Water/Air)



THAR22C. Computer Controlled Heat Pump + Air Conditioning + Refrigeration with 2 Condensers and 2 Evaporators (Water/Air)

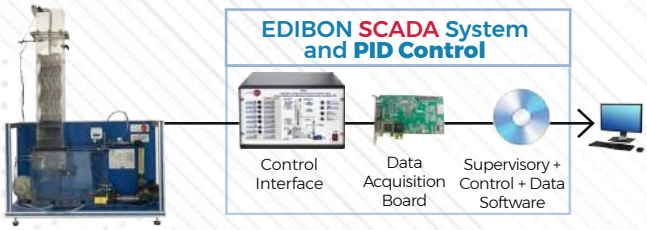


HPSE. Heat Pump for different Heat Sources and Heat Exchangers

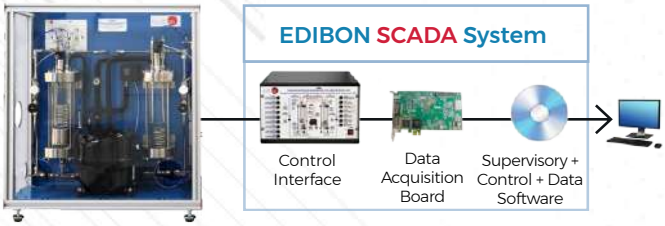
UHHS. Underfloor Heating and/or Heat Source for Heat Pump

FHAH. Fan Heater and/or Air Heat Exchanger

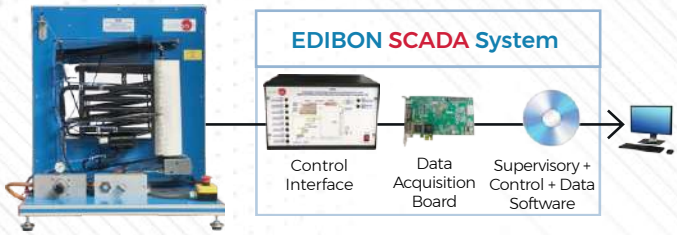
TTEC. Computer Controlled Bench Top Cooling Tower



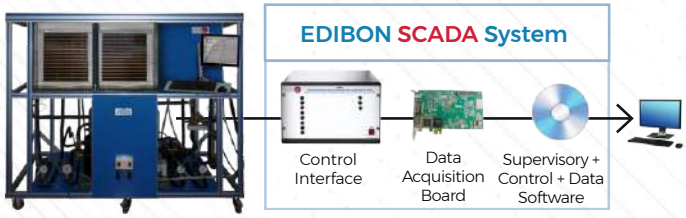
TCRC. Computer Controlled Refrigeration Cycle Demonstration Unit



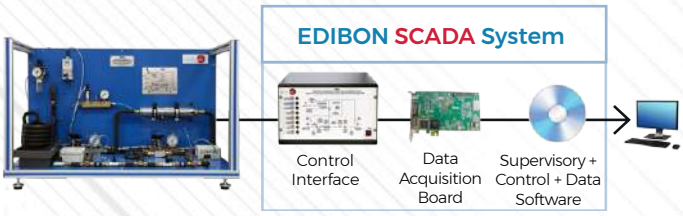
TRAC. Computer Controlled Absorption Refrigeration Unit



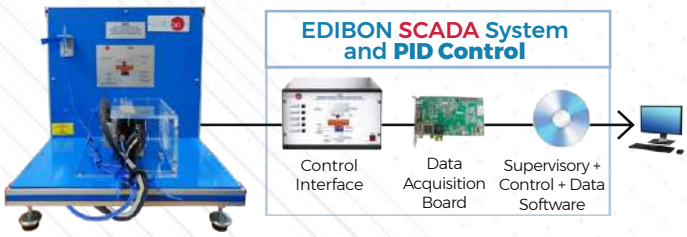
TCFRC. Computer Controlled Capacity Control and Faults in Refrigeration Systems



TPVC. Computer Controlled Vortex Tube Refrigerator Unit

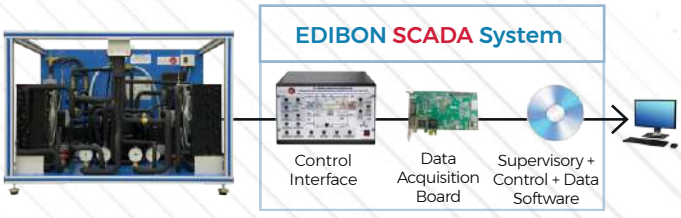


TBTC. Computer Controlled Thermo-Electric Heat Pump

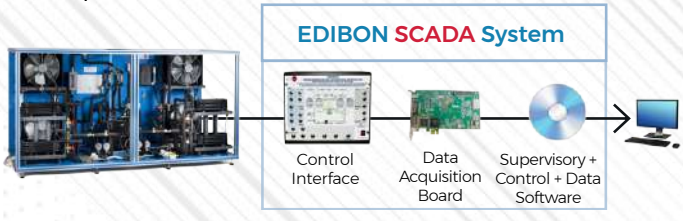


TSCR. Simple Compression Refrigeration Circuit Unit

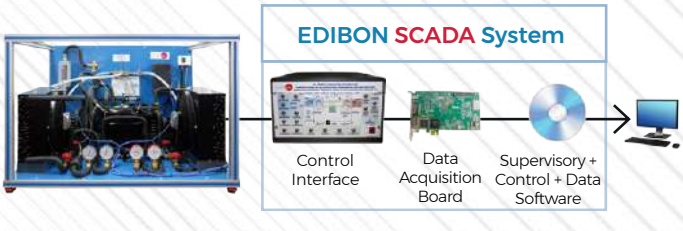
THIBAR22C. Computer Controlled Reversible Heat Pump + Air Conditioning + Refrigeration with 2 Condensers and 2 Evaporators (Water/Air)



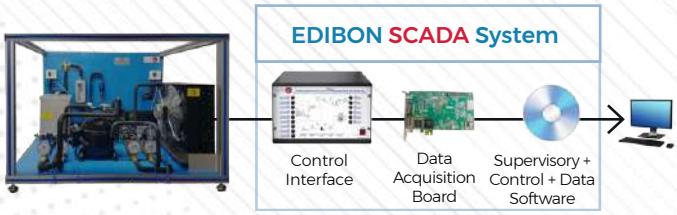
THIBAR44C. Computer Controlled Reversible Heat Pump + Air Conditioning + Refrigeration with 4 Condensers and 4 Evaporators (Water/Air)



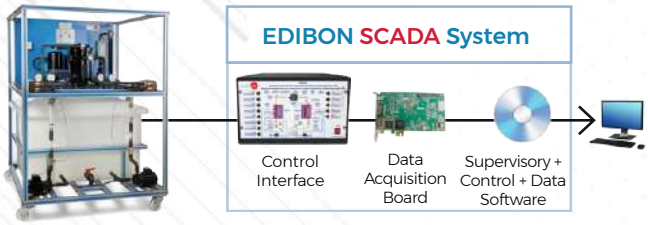
THAR22C. Computer Controlled Heat Pump + Air Conditioning + Refrigeration with 2 Condensers and 2 Evaporators (Water/Air)



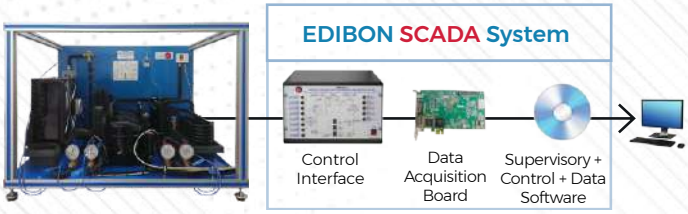
TRCAC. Computer Controlled Refrigeration Circuit with Variable Load



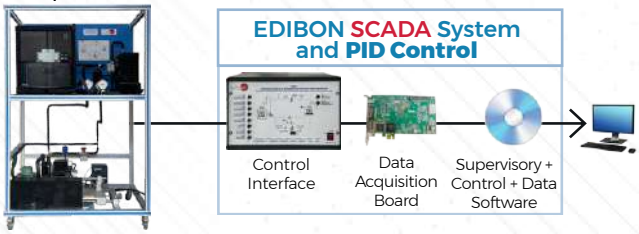
TRCVC. Computer Controlled Vapour-Compression Refrigeration Unit



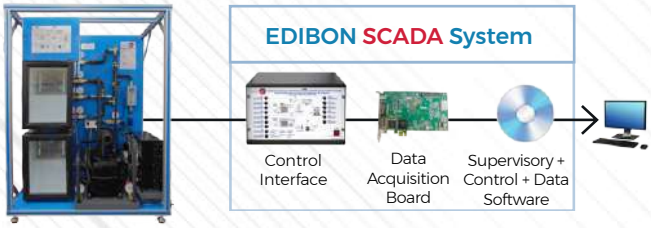
THALAC/1. Computer Controlled Refrigeration Control Unit with several Compressors



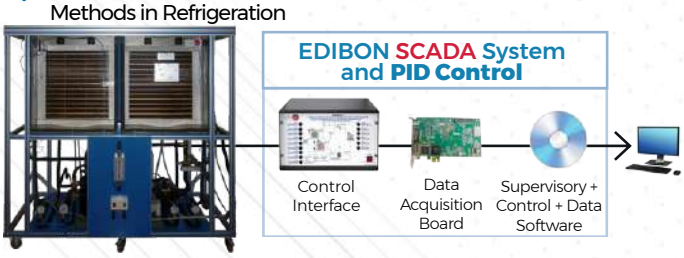
TRCC. Computer Controlled Refrigeration Unit with Open Compressor



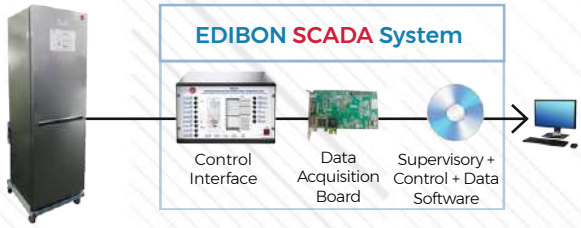
TRRC. Computer Controlled Refrigeration Unit with Refrigeration and Freezing Chamber



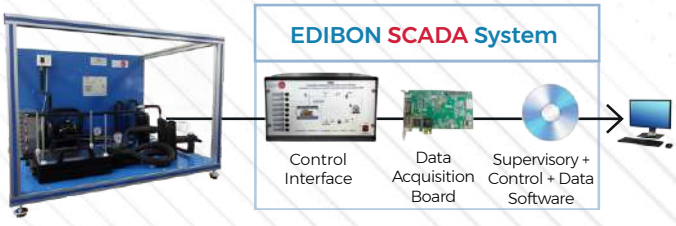
THARA2C/1. Computer Controlled Capacity Control Methods in Refrigeration



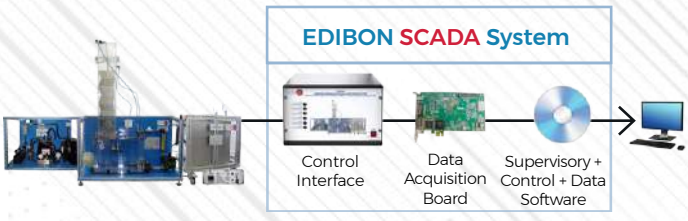
TRD2PC. Computer Controlled Two Doors Domestic Refrigeration Unit



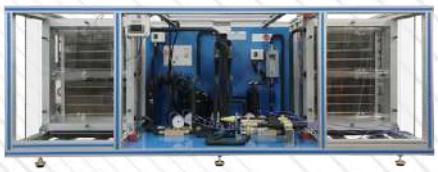
TPCC. Computer Controlled Contact Plate Freezer



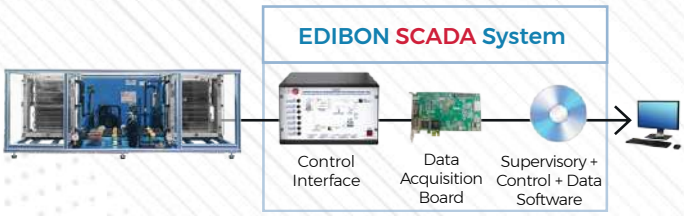
TCPISC. Computer Controlled Cooling Plant with Ice Store



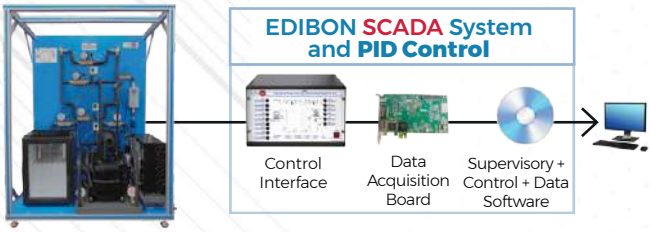
TCREV. Compression Refrigeration Unit with Different Expansion Valves



TCRCTC. Computer Controlled Refrigeration Unit with Different Capillary Tubes



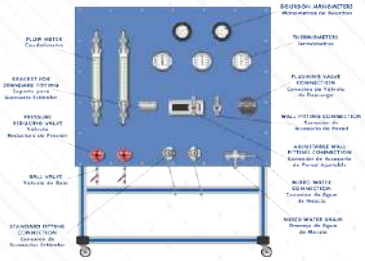
TSCC. Computer Controlled Two-Stage Compression Refrigeration Unit



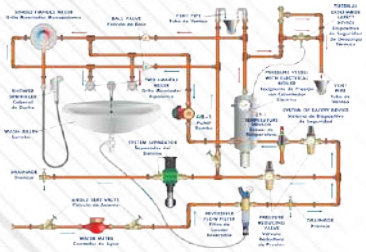
9.5. THERMAL HYDRAULIC PIPING SYSTEM

TEDT. Thermal Expansion Training Unit

TEIS. Sanitary Fittings Training Unit



TIAP. Drinking Water Installation Unit



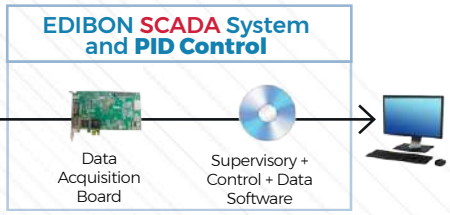
TPAP. Protection of Drinking Water Training Unit

TELT. Pipe Cleaning Training Unit

TSID. Sewerage Unit

9.6. HEAT TRANSFER

TSTCC. Computer Controlled Heat Transfer Series

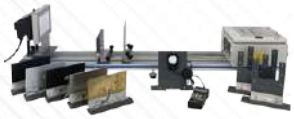


TSTCC/CIB. Control Interface for TSTCC (Common for all available modules type "TXC")

★ ***REQUIRED ELEMENTS FOR TSTCC/CIB*** *(At least one is required):*

TXC/CL. Linear Heat Conduction Module for TSTCC

TXC/CR. Radial Heat Conduction Module for TSTCC



TXC/RC. Radiation Heat Transfer Module for TSTCC

TXC/CC. Combined Free and Forced Convection and Radiation Module for TSTCC

TXC/SE. Extended Surface Heat Transfer Module for TSTCC

TXC/ER. Radiation Errors in Temperature Measurement Module for TSTCC

TXC/EI. Unsteady State Heat Transfer Module for TSTCC

TXC/LG. Thermal Conductivity of Liquid and Gas Module for TSTCC

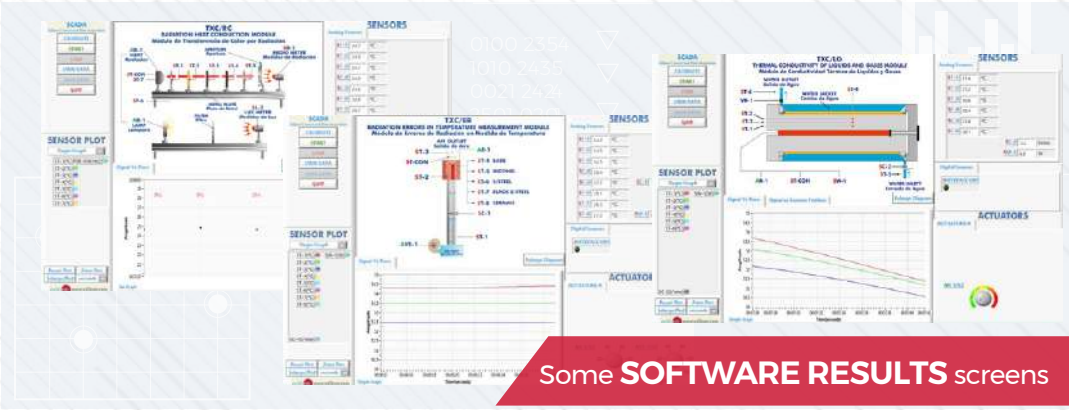
TXC/FF. Free and Forced Convection Heat Transfer Module for TSTCC

TXC/TE. Three Axes Heat Transfer Module for TSTCC

TXC/MM. Metal to Metal Heat Transfer Module for TSTCC

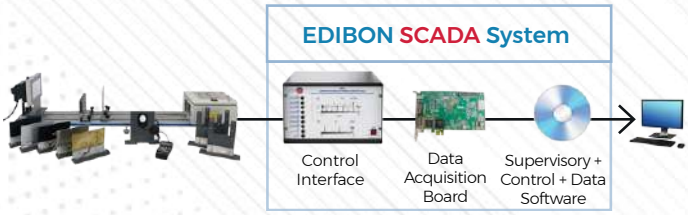
TXC/TC. Ceramic Heat Transfer Module for TSTCC

TXC/TI. Insulating Material Heat Transfer Module for TSTCC

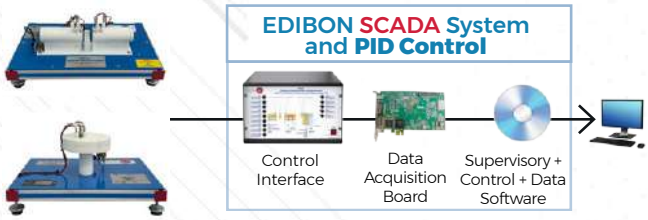


Some **SOFTWARE RESULTS** screens

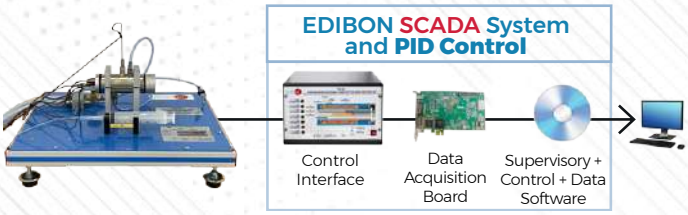
TRTC. Computer Controlled Thermal Radiation and Light Radiation Unit



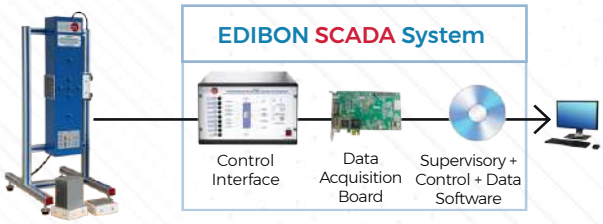
TCCC. Computer Controlled Heat Conduction Unit



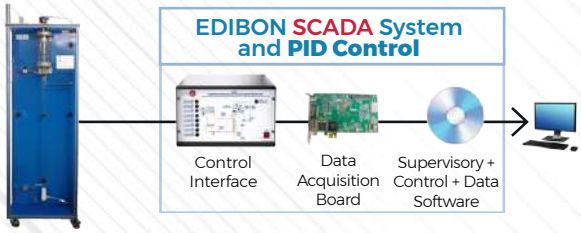
TCLGC. Computer Controlled Thermal Conductivity of Liquids and Gases Unit



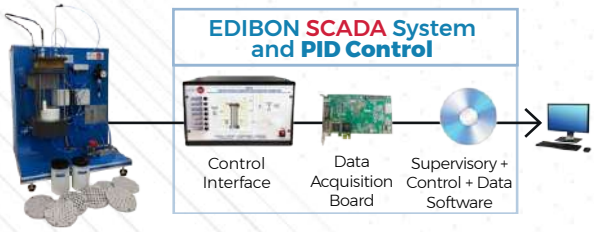
TCLFC. Computer Controlled Free and Forced Convection Heat Transfer Unit



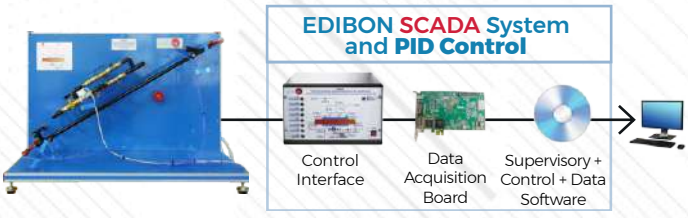
TFEC. Computer Controlled Flow Boiling Demonstration Unit



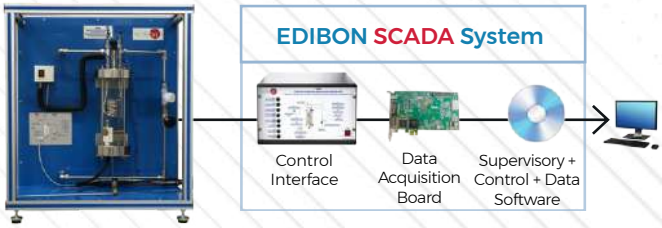
TTLFC. Computer Controlled Fluidization and Fluid Bed Heat Transfer Unit



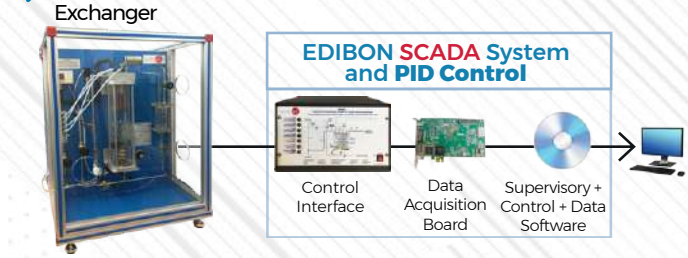
TFLVC. Computer Controlled Laminar/Viscous Flow Heat Transfer Unit



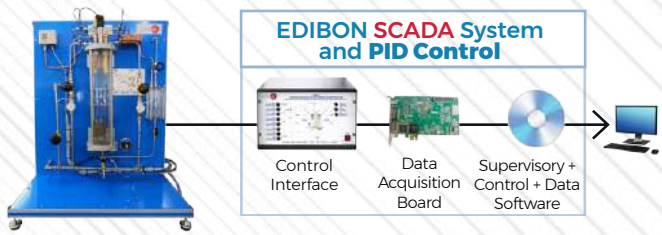
TCEC. Computer Controlled Boiling Heat Transfer Unit



TIVAC. Computer Controlled Steam to Water Heat Exchanger



TCPGC. Computer Controlled Film and Dropwise Condensation Unit



9.7. HEAT EXCHANGERS

TICC. Computer Controlled Heat Exchangers Training System

TIUS. Base Service Unit (Common for all available Heat Exchangers type "TI")

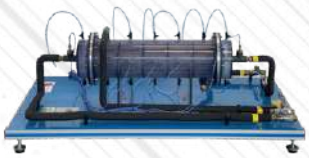
★ ***REQUIRED ELEMENTS FOR TIUS*** *(At least one is required):*

TITC. Concentric Tube Heat Exchanger for TICC

TITCA. Extended Concentric Tube Heat Exchanger for TICC

TIPL. Plate Heat Exchanger for TICC

TIPLA. Extended Plate Heat Exchanger for TICC



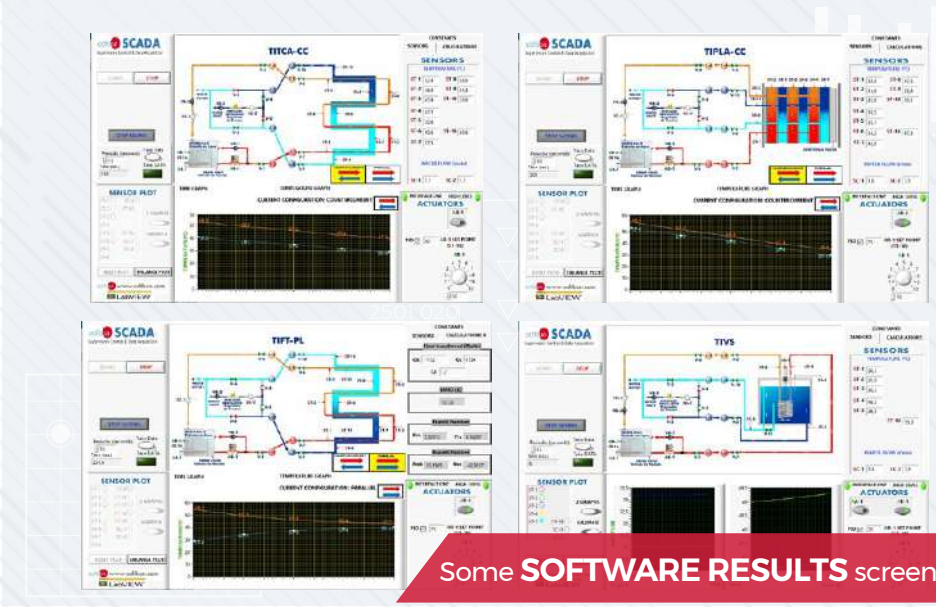
TICT. Shell & Tube Heat Exchanger for TICC

TIVE. Jacketed Vessel Heat Exchanger for TICC

TIVS. Coil Vessel Heat Exchanger for TICC

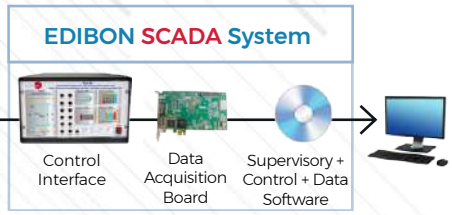
TIFT. Turbulent Flow Heat Exchanger for TICC

TICF. Cross Flow Heat Exchanger for TICC



Some **SOFTWARE RESULTS** screens

TICC/SS. Computer Controlled Heat Exchangers Basic Unit



TIUS/SS. Basic Service Base Unit

★ ***REQUIRED ELEMENTS FOR TIUS/SS*** *(At least one is required):*

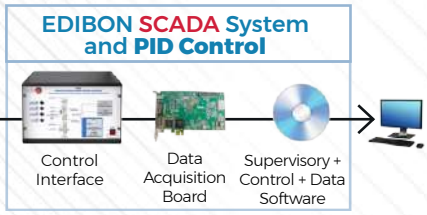
TITC/SS. Basic Concentric Tube Heat Exchanger

TIPL/SS. Basic Plate Heat Exchanger

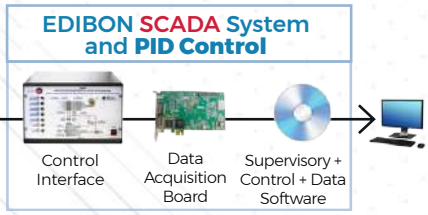
TICT/SS. Basic Shell and Tube Heat Exchanger

TIVES/SS. Basic Stirred-Tank Heat Exchanger with Double Jacket and Coil

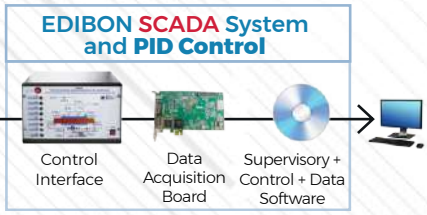
TIFCC. Computer Controlled Cross Flow Heat Exchanger



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

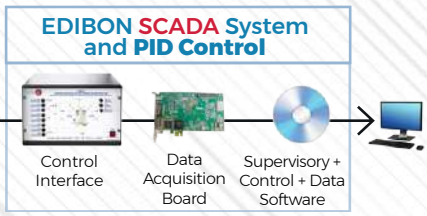


TFLVC. Computer Controlled Laminar/Viscous Flow Heat Transfer Unit

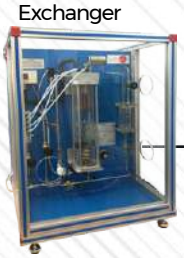


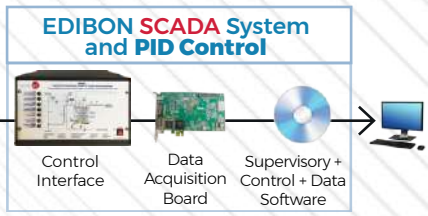
THER. Heat Exchangers in the Refrigeration Unit

TCPGC. Computer Controlled Film and Dropwise Condensation Unit

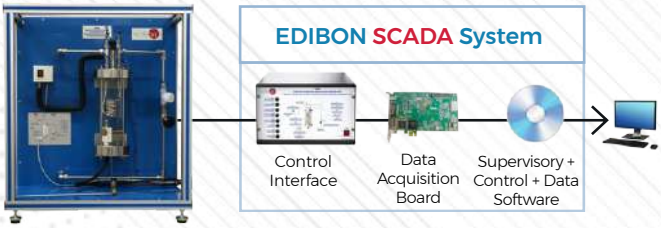


TIVAC. Computer Controlled Steam to Water Heat Exchanger

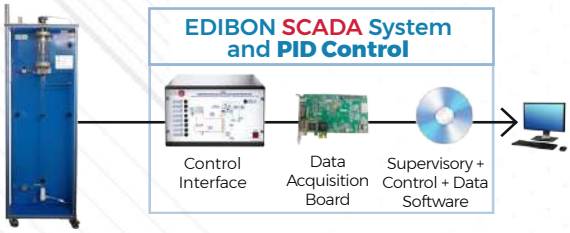




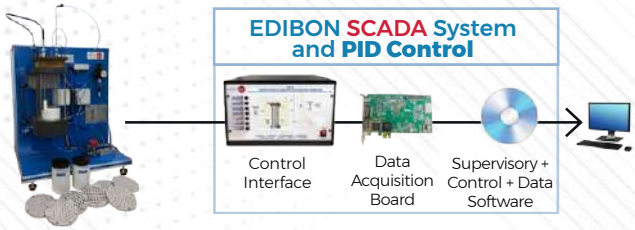
TCEC. Computer Controlled Boiling Heat Transfer Unit



TFEC. Computer Controlled Flow Boiling Demonstration Unit

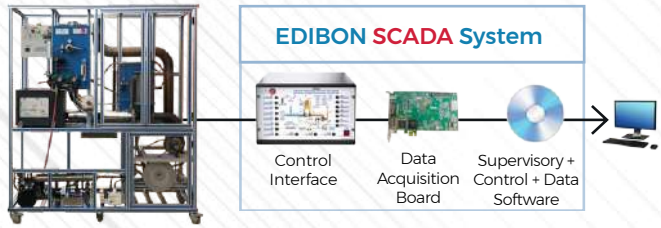


TTLFC. Computer Controlled Fluidization and Fluid Bed Heat Transfer Unit

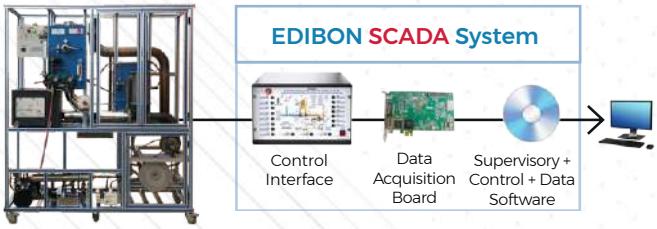


9.8. THERMAL MACHINES

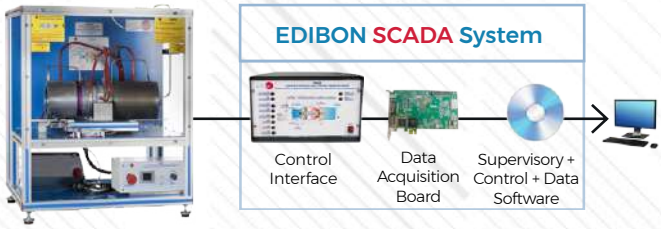
TGDEC. Computer Controlled Two -Shaft Gas Turbine



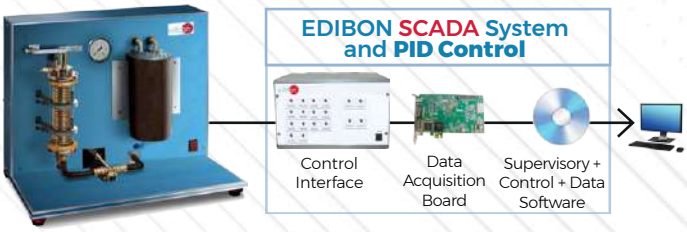
TGDEPC. Computer Controlled Two-Shaft Gas Turbine/ Jet Engine



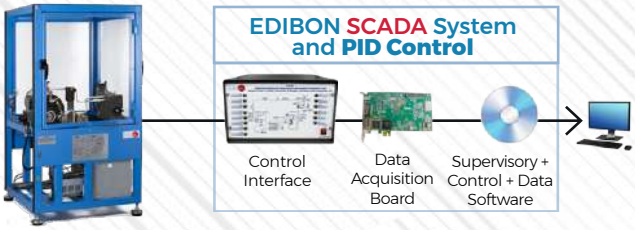
TGFAC. Computer Controlled Axial Flow Gas Turbine/ Jet Engine



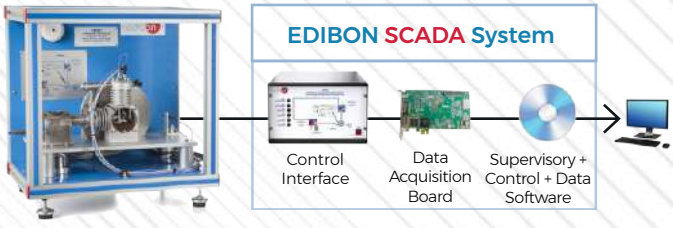
HTVC. Computer Controlled Solar/Heat Source Vapour Turbine



TSMEC. Computer Controlled Steam Motor and Energy Conversion Unit

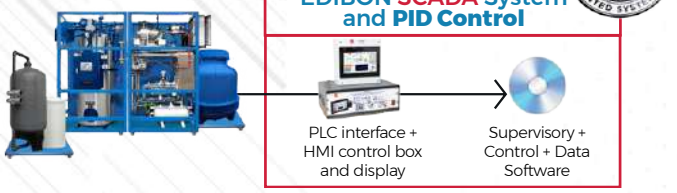


TMSC. Computer Controlled Stirling Motor



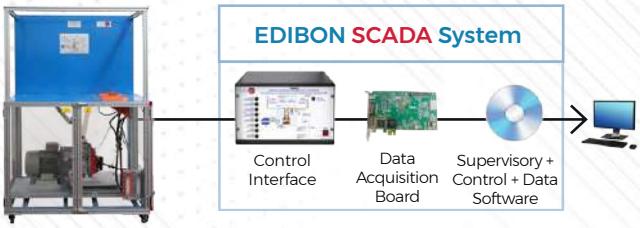
TPTV/1.5kW/CTS. Computer Controlled and Touch Screen 1.5 kW Steam Power Plant

TPTV/20kW/CTS. Computer Controlled and Touch Screen 20 kW Steam Power Plant

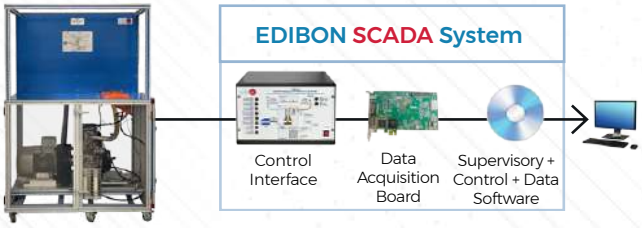


9.9. INTERNAL COMBUSTION ENGINES

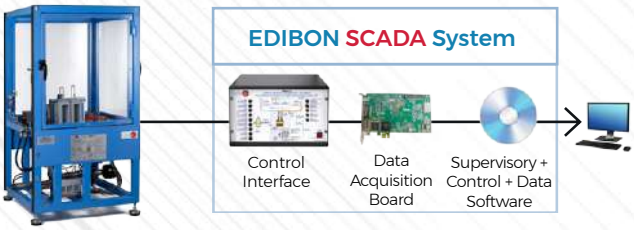
TBMC3. Computer Controlled Test Bench for 2.2 kW Engines



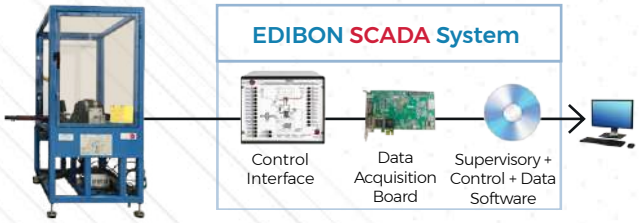
TBMC8. Computer Controlled Test Bench for 7.5 kW Engines



TBMC12. Computer Controlled Test Bench for 11 kW Engines



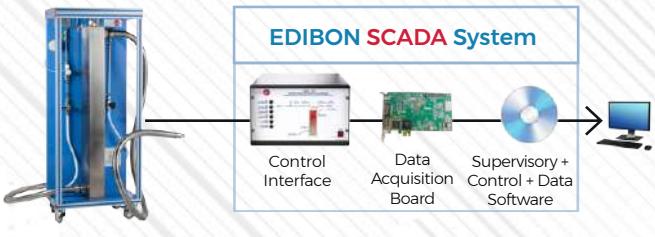
TBMC75. Computer Controlled Test Bench for 75 kW Engines



TBM/D. Comprehensive Diesel Engine Test and Diagnostic Bench

TBM/G. Comprehensive Gasoline Test and Diagnostic Bench for Combustion Engines with Fault Simulation

TBMC-CG. Computer Controlled Exhaust Gas Calorimeter

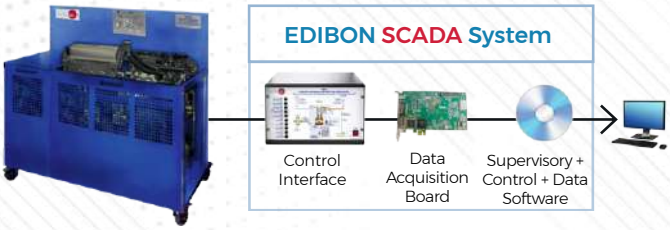


TBMC-AGE. Exhaust Gas Analyzer

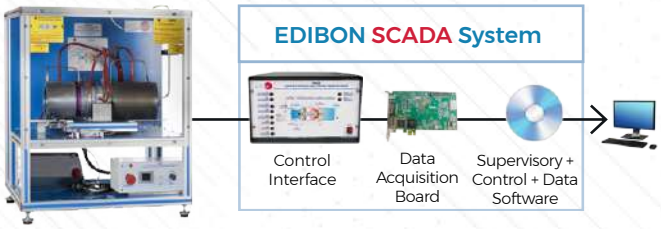
TBMC-AGE/NOx. Exhaust Gas Analyzer (NOx)

PFGA. Portable Flue Gas Analyzer

TMHC. Computer Controlled Test Bench for Hybrid Engine



TGFAC. Computer Controlled Axial Flow Gas Turbine/ Jet Engine



9.10. INSTALLATIONS AND MAINTENANCE

9.10.1. CUTAWAY MODELS

DFCM. Unit to Study a Filter Drier Cutaway Model

GMCM. Unit to Study a Gas Meter Cutaway Model

HCCM. Unit to Study a Hermetic Refrigerant Compressor Cutaway Model

HOSCM. Unit to Study a Helical Oil Separator Cutaway Model

LSCM. Unit to Study a Liquid Separator Cutaway Model

OCCM. Unit to Study an Open Refrigerant Compressor Cutaway Model

SCCM. Unit to Study a Semi-Hermetic Refrigerant Compressor Cutaway Model

SHICM. Unit to Study a Sight Glass with Humidity Indicator Cutaway Model

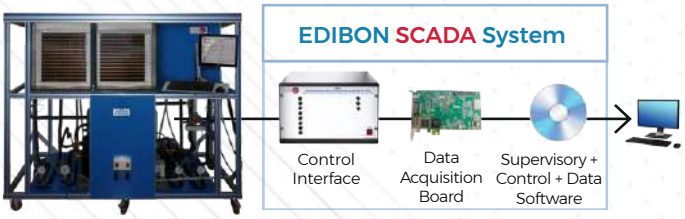
9.10.3. INSTALLATIONS AND MAINTENANCE TRAINING

TIR. Introduction to Refrigeration Unit

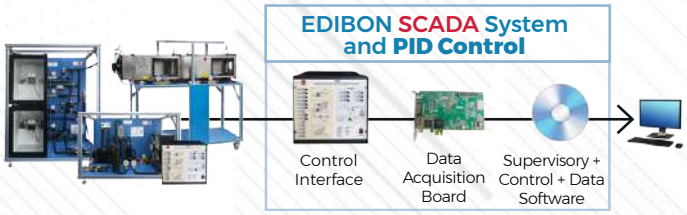
TEMT. Temperature Measurement Training Unit

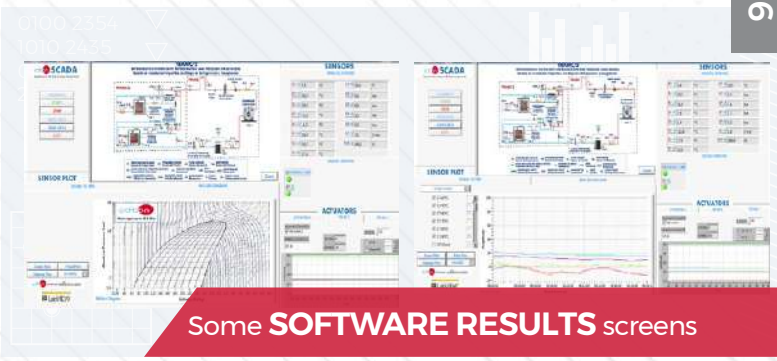
TAMR. Assembly and Maintenance in Refrigeration Systems Unit

TCFRC. Computer Controlled Capacity Control and Faults in Refrigeration Systems



TRAMC. Computer Controlled Refrigeration and Air Conditioning Modular Unit





TRAMC/1. Home Refrigeration Model

TRAMC/2. Refrigeration System with Refrigeration and Freezing Stage Model

TRAMC/3. Simple Air Conditioning System Model for Room Cooling

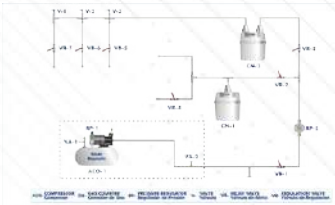
TRAMC/4. Complete Air Conditioning System Model

MRST. Measurement and Regulation Station Unit

IGHT. Instantaneous Gas Heater Experimentation Unit

GBT. Forced Draft Gas Burner Unit

GHST. Domestic Gas Supply Experimentation Unit



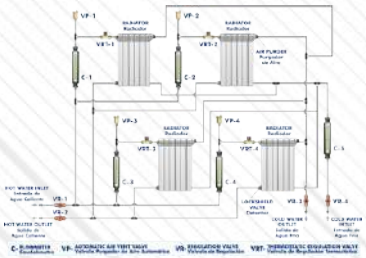
TEIR. Electrical Installations in Refrigeration Systems Unit

TECR. Electrical Connection of Refrigerant Compressors Unit

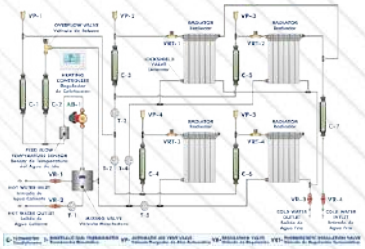
TEFA. Electrical Faults in Air Conditioning Systems Unit

THBT. Hydraulic Radiator Balancing Training Unit

RT. Radiators Training Unit



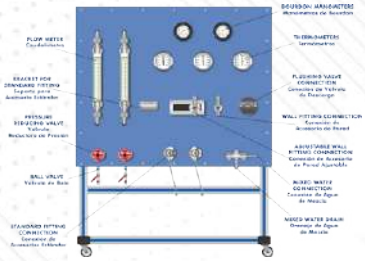
THST. Heating System Training Unit



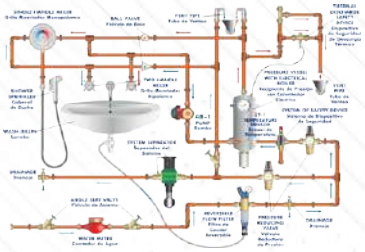
TEV3V. Three-Way Mixing Valve Training Unit

TEV4V. Four-Way Mixing Valve Training Unit

TEIS. Sanitary Fittings Training Unit



TIAP. Drinking Water Installation Unit



TPAP. Protection of Drinking Water Training Unit

TELT. Pipe Cleaning Training Unit

TSID. Sewerage Unit

TCPT. Circulating Pumps Training Unit

TEVT. Expansion Vessel Training Unit

TPVST. Pressure Vessel and Safety Features Training Unit

10 PROCESS CONTROL

10.1. THEORETICAL - PRACTICAL FUNDAMENTALS

RYC/T. Computer Controlled Modular Control and Regulation Unit

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

★ *ADDITIONAL RECOMMENDED ELEMENTS FOR RYC*

RYC-BB. Ball and Beam Module

RYC-SM. DC Servo Motor Module

RYC-TAR. Air Flow Temperature Control Module

RYC-PI. Inverted Pendulum Control Module

RYC-CLM. Magnetic Levitation Control Module

RYC-TAG. Water Flow Temperature Control Module

RYC-TE. Temperature Control Module

RYC-P. Pressure Control Module

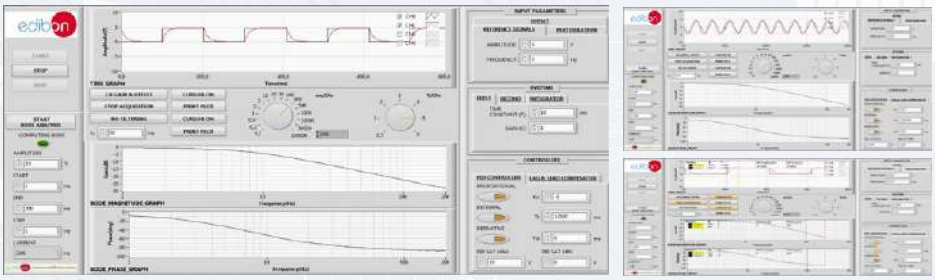
RYC-N. Level Control Module

RYC-C. Flow Rate Control Module

RYC-I. Luminosity Control Module

RYC-pH. pH Control Module

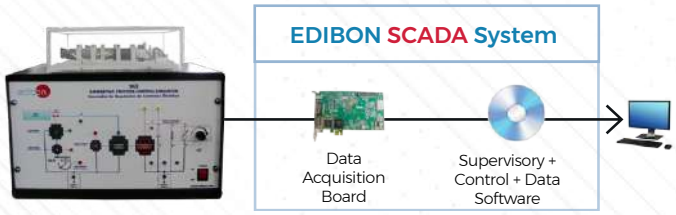
RYC-CP. Position Control Module



Some **SOFTWARE RESULTS** screens

RYC/B. Basic Teaching Unit for the Study of Regulation and Control

SCE. Computer Controlled Generating Stations Control and Regulation Simulator

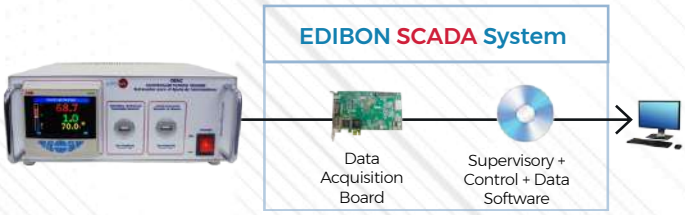


10.2. CONTROLLERS & INDUSTRIAL COMMUNICATIONS

CECI. Industrial Controllers Unit

CRCI. Industrial Controllers Networking

CEAC. Computer Controlled Controller Tuning Unit



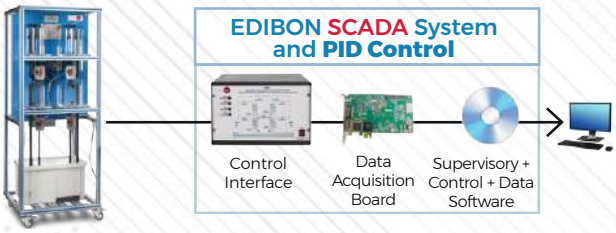
CEAB. Field Bus Applications Unit

10.3. INDUSTRIAL APPLICATIONS AND SYSTEMS

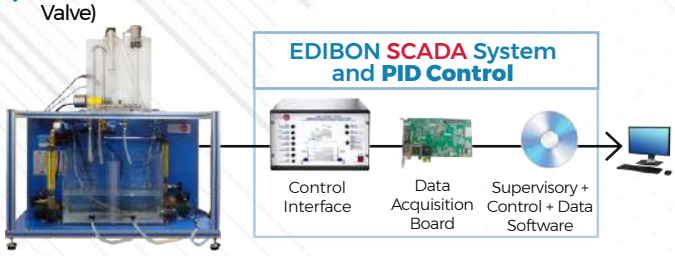
APC. Applications for Process Control

FLPTU. Flow, Level, Pressure and Temperature Regulation for Process Control

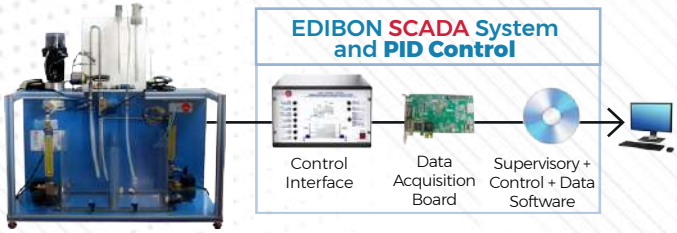
CTAC. Computer Controlled Coupled Tanks System



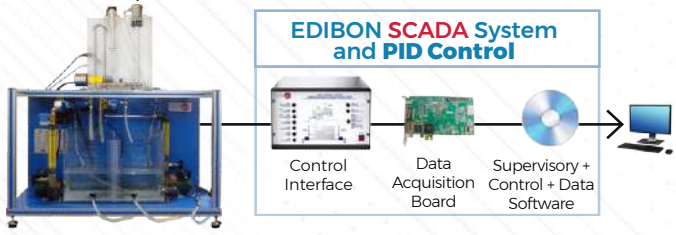
UCP. Computer Controlled Process Control (Electronic Valve)



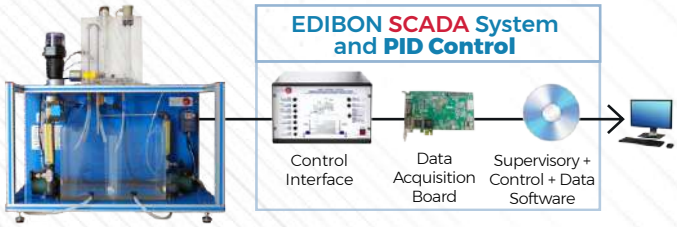
UCPCN. Computer Controlled Process Control (Pneumatic Valve)



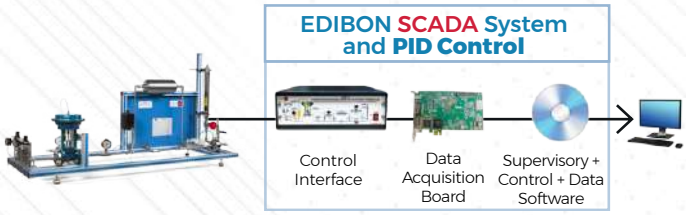
UCPCV. Computer Controlled Process Control (Speed Controller)



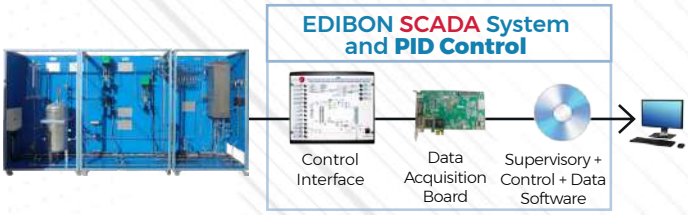
UCPCNCV. Computer Controlled Process Control Unit (Electronic + Pneumatic Valve and Speed Controller)



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



CPIC. Computer Controlled Industrial Process Control Plant

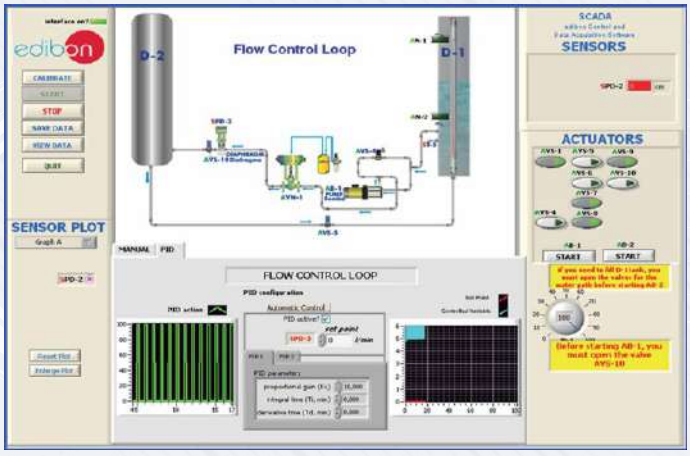


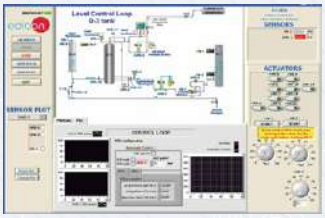
CPIC-C. Computer Controlled Industrial Process Control Plant (only Flow).

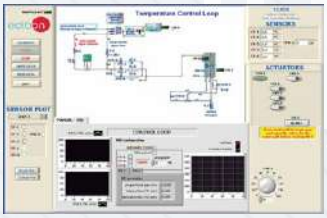
CPIC-T. Computer Controlled Industrial Process Control Plant (only Temperature).

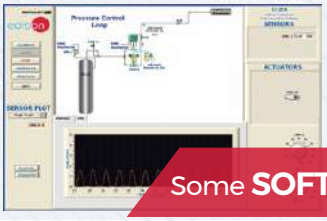
CPIC-N. Computer Controlled Industrial Process Control Plant (only Level).

CPIC-P. Computer Controlled Industrial Process Control Plant (only Pressure).









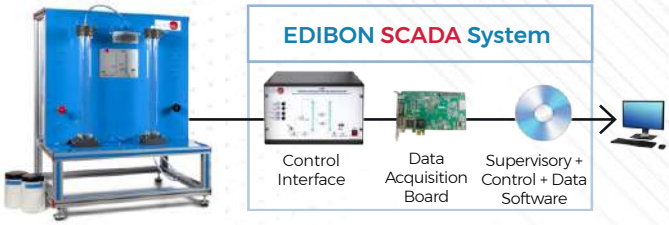
Some **SOFTWARE RESULTS** screens

11 CHEMICAL ENGINEERING

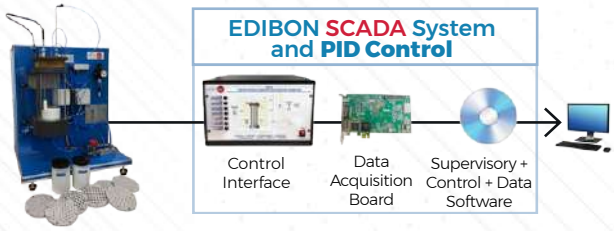
11.1. UNIT OPERATIONS

11.1.1. FLUIDIZATION

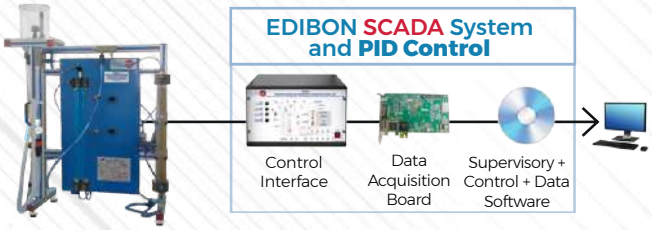
LFFC. Computer Controlled Fixed and Fluidized Bed Unit



TTLFC. Computer Controlled Fluidization and Fluid Bed Heat Transfer Unit

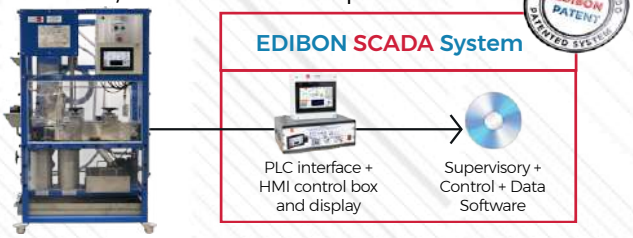


PEFPC. Computer Controlled Permeability/Fluidisation Studies Unit

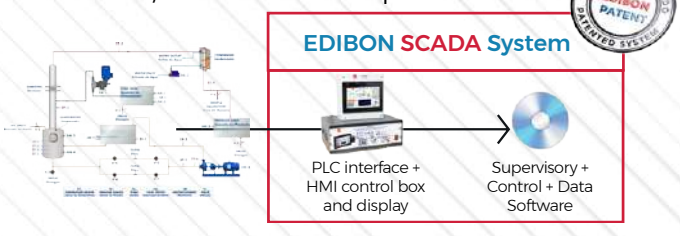


11.1.2. EVAPORATION

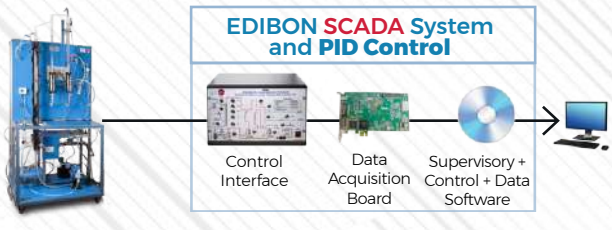
CGE/0.4/CTS. Computer Controlled and Touch Screen 0.4 l/h Carver-Greenfield Evaporator



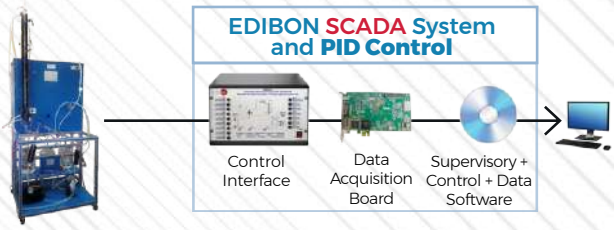
CGE/12/CTS. Computer Controlled and Touch Screen 12 l/h Carver-Greenfield Evaporator



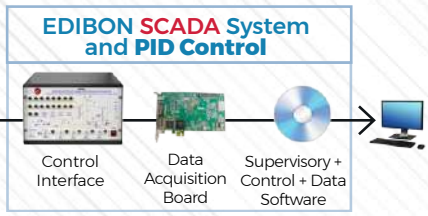
EPAC. Computer Controlled Rising Film Evaporator



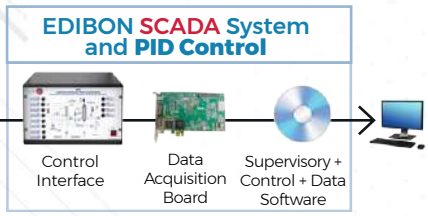
EPDC/C. Computer Controlled Falling Film Evaporator



EDPAC. Computer Controlled Double Effect Rising Film Evaporator

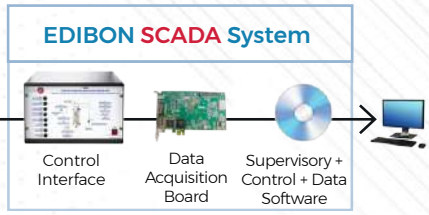


EPFC. Computer Controlled Thin Film Evaporator

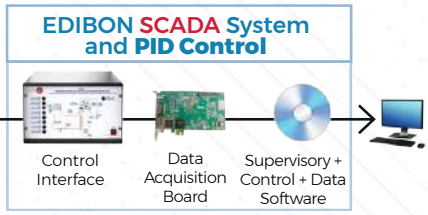


11.1.3. BOILING

TCEC. Computer Controlled Boiling Heat Transfer Unit

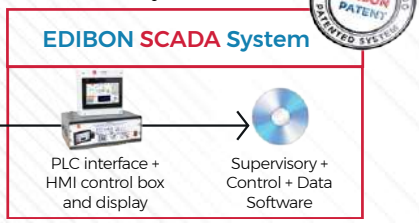


TFEC. Computer Controlled Flow Boiling Demonstration Unit

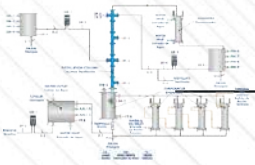


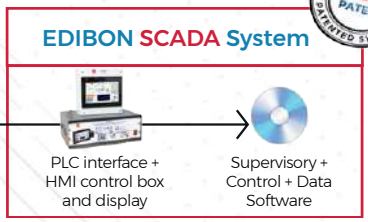
11.1.4. DISTILLATION AND CRACKING

CSRD/4/CTS. Computer Controlled and Touch Screen 4 l/h Corrosive Solvent Recovery Distillation

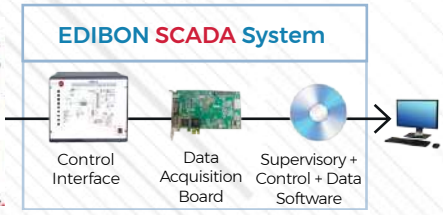


CSRD/12/CTS. Computer Controlled and Touch Screen 12 l/h Corrosive Solvent Recovery Distillation

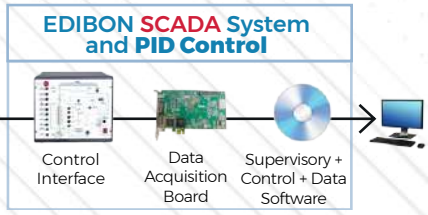




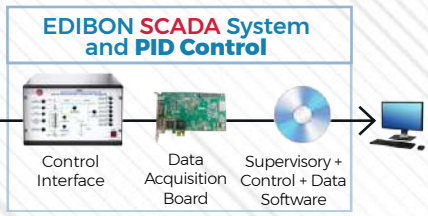
UDCC/A. Advanced Computer Controlled Continuous Destillation Unit



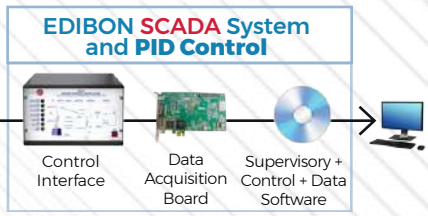
UDCC. Computer Controlled Continuous Distillation Unit



UDDC. Computer Controlled Batch Distillation Unit

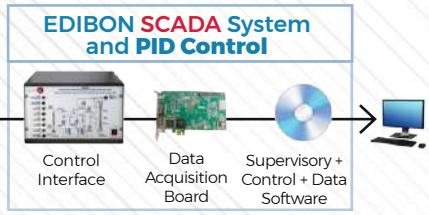


QCCC. Computer Controlled Cracking Column

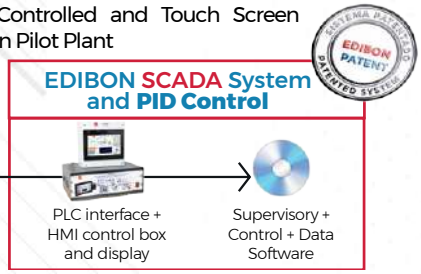


11.1.5. EXTRACTION

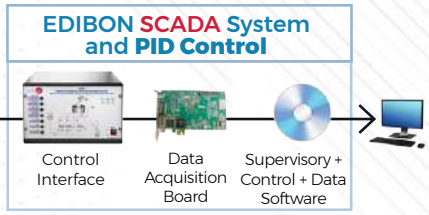
UELLC. Computer Controlled Liquid-Liquid Extraction Unit



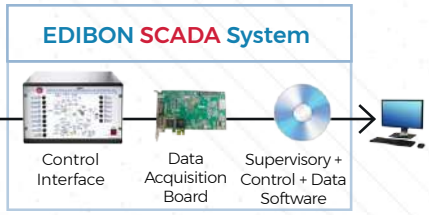
SLE00. Computer Controlled and Touch Screen Solid-Liquid Extraction Pilot Plant



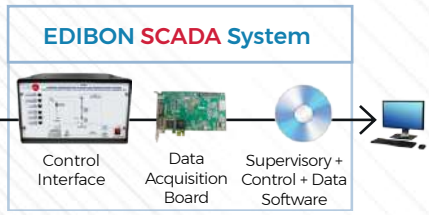
UESLC. Computer Controlled Solid-Liquid Extraction Unit



QEDC. Computer Controlled Batch Solvent Extraction and Desolventising Unit

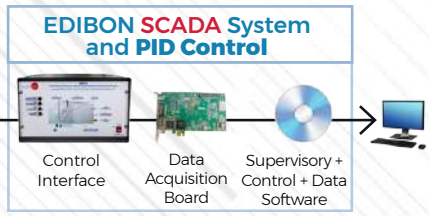


FPCC. Computer Controlled Unit to Study Flow through Packed Columns

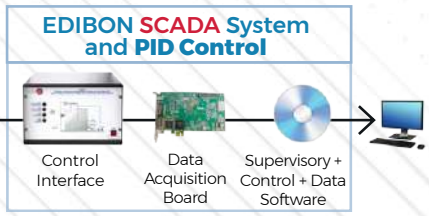


11.1.6. DIFFUSION

QDTLC. Computer Controlled Liquid Mass Transfer and Diffusion Unit

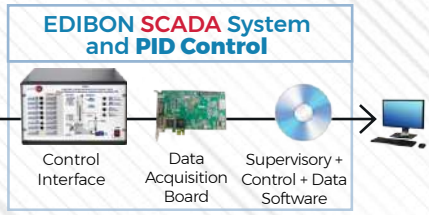


QDTGC. Computer Controlled Gaseous Mass Transfer and Diffusion Unit

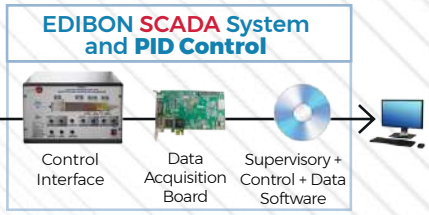


11.1.7. DRYING AND COOLING

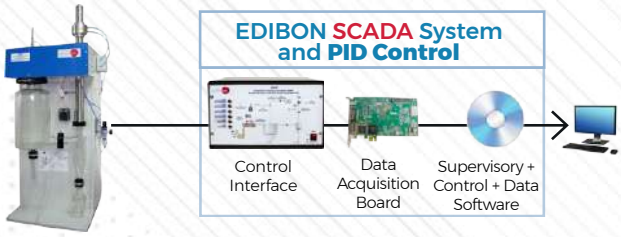
TTEC. Computer Controlled Bench Top Cooling Tower



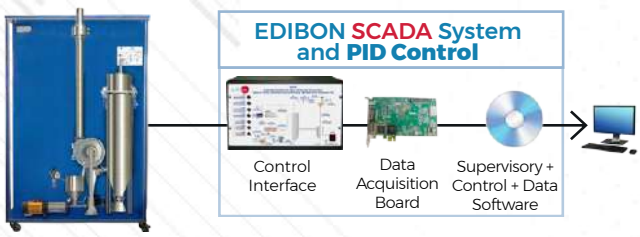
SBANC. Computer Controlled Tray Drier



SSPC. Computer Controlled Spray Drier



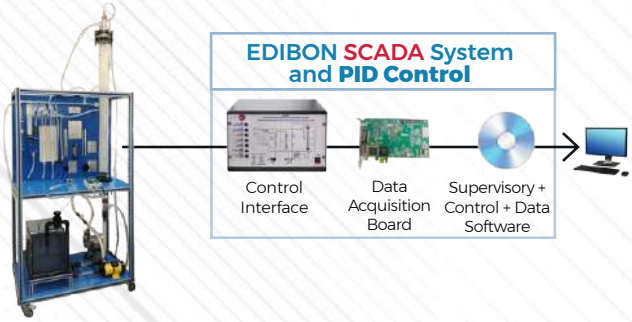
SDCC. Computer Controlled Spray Dryer and Chiller Unit



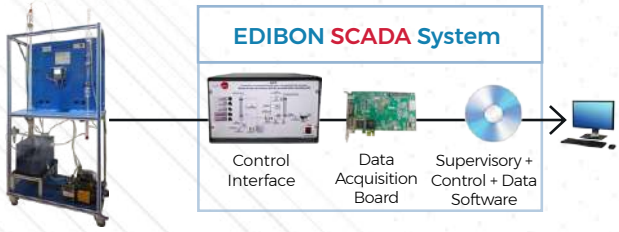
BLIO. Freeze Dryer

11.1.8. ABSORPTION AND ADSORPTION

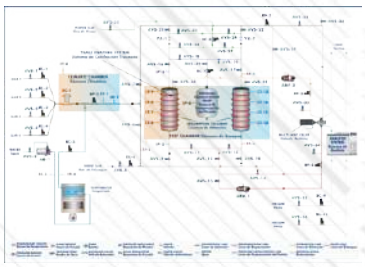
CAGC. Computer Controlled Gas Absorption Column



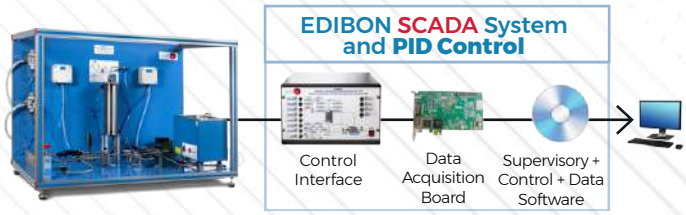
CAPC. Computer Controlled Wetted Wall Gas Absorption Column



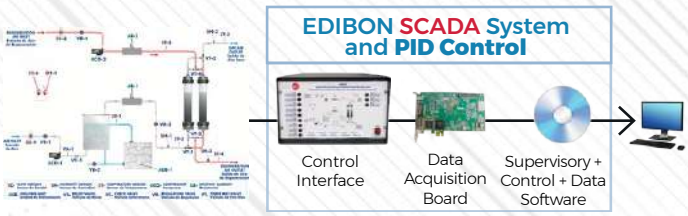
LPSA. Laboratory Scale Pressure Swing Adsorption Unit



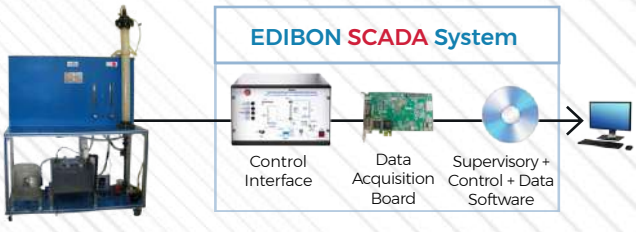
QALFC. Computer Controlled Fixed Bed Adsorption Unit



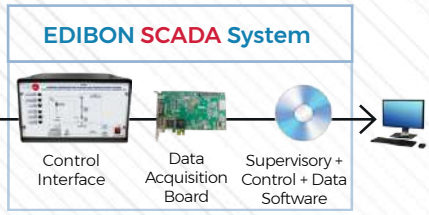
QSAC. Computer Controlled Adsorptive Air Drying Unit



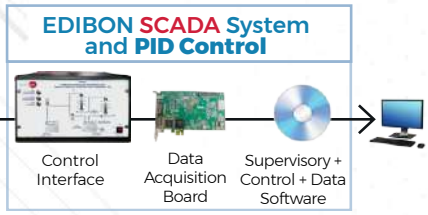
PLGC. Computer Controlled Gas Washing Processing Plant



FPCC. Computer Controlled Unit to Study Flow through Packed Columns

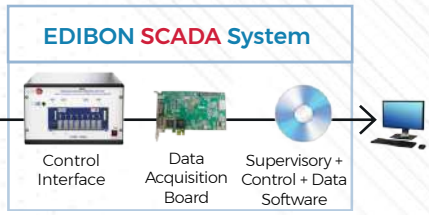


PEAC. Computer Controlled Adsorption Unit

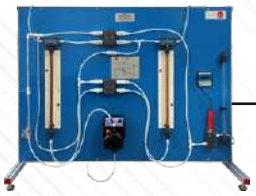


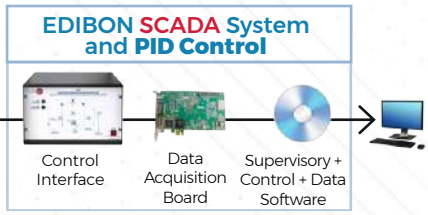
11.1.9. ION EXCHANGE AND CORROSION

EECC. Computer Controlled Corrosion Study Unit



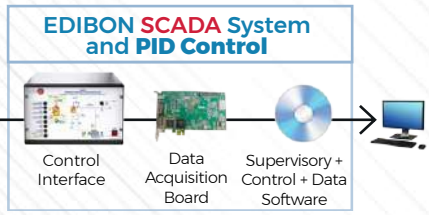
EIIC. Computer Controlled Ion Exchange Unit



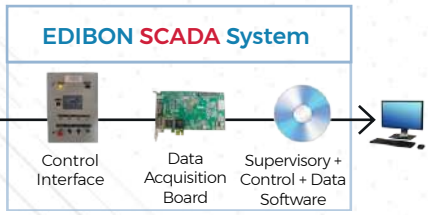


11.1.10. CRYSTALLIZATION AND PYROLYSIS

QUCC. Computer Controlled Crystallization Unit

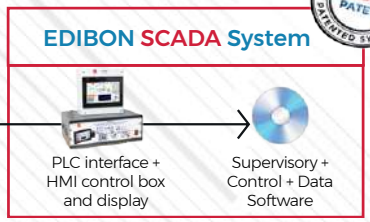


EPIRC. Computer Controlled Pyrolysis Unit

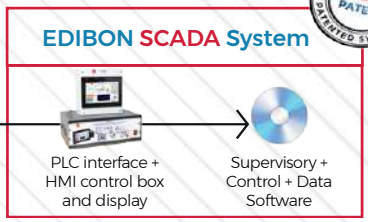


11.1.11. FILTRATION, SEDIMENTATION AND MIXING

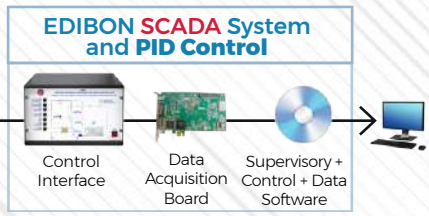
SCS/60/CTS. Computer Controlled and Touch Screen 60 l Semicontinuous Centrifugal Separator



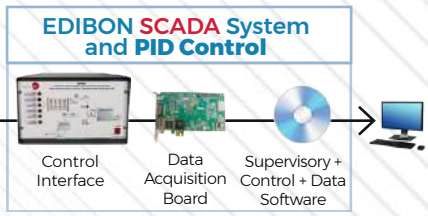
SCS/1000/CTS. Computer Controlled and Touch Screen 1000 l Semicontinuous Centrifugal Separator



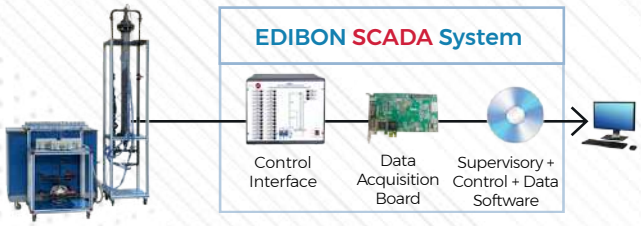
TFUC. Computer Controlled Continuous and Batch Filtration Unit



AFPMC. Computer Controlled Plate and Frame Filter Press

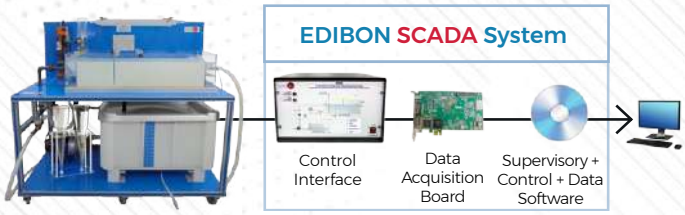


EFLPC. Computer Controlled Deep Bed Filter Unit

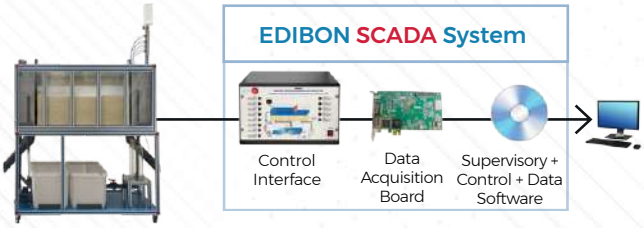


ESED. Sedimentation Study Unit

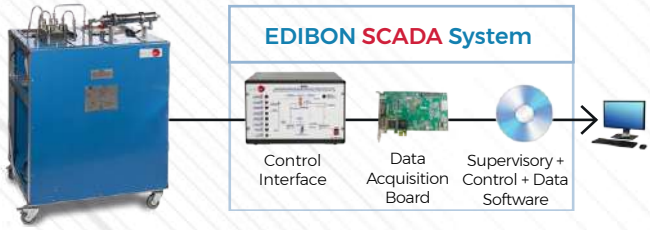
PDSC. Computer Controlled Sedimentation Tank



PDFDC. Computer Controlled Drainage and Seepage Tank

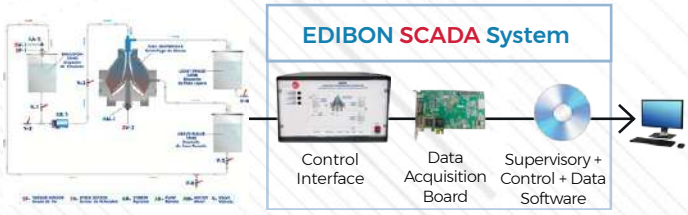


ROUC. Computer Controlled Reverse Osmosis/ Ultrafiltration Unit

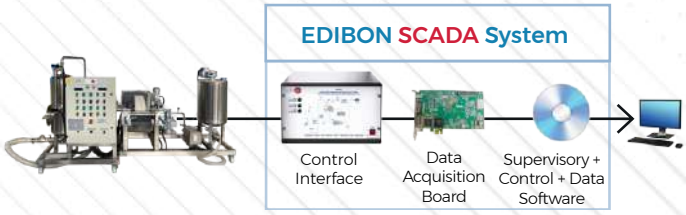


EMLS. Liquid/Solid Mixing Unit

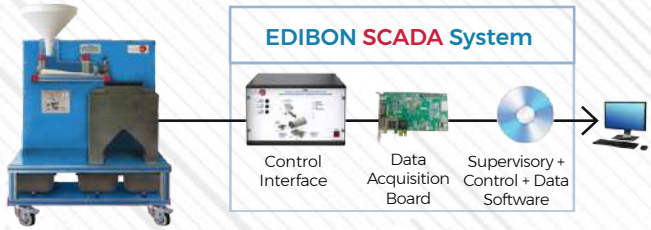
QCDIC. Computer Controlled Disc Centrifuge



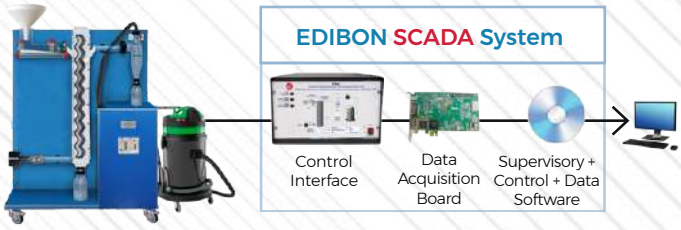
PFTC. Computer Controlled Drum Cell Filter



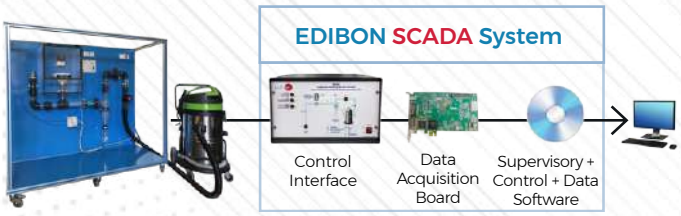
PSMC. Computer Controlled Magnetic Separation Unit



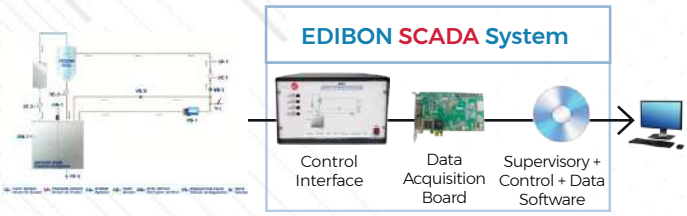
PSNC. Computer Controlled Gas Flow Classification Unit



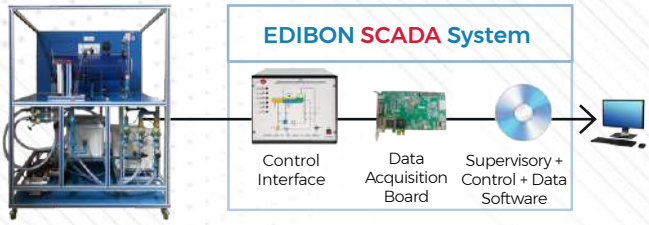
PCGC. Computer Controlled Gas Cyclone



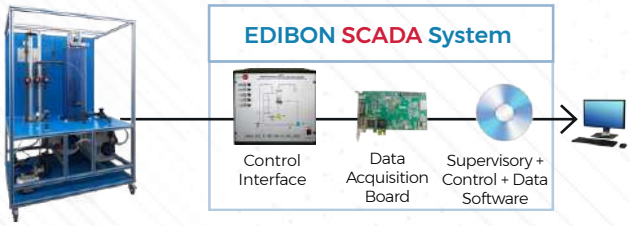
PHCC. Computer Controlled Hydrocyclone



HTSC. Computer Controlled Horizontal Three-phase Separator



VTSC. Computer Controlled Vertical Three-phase Separator

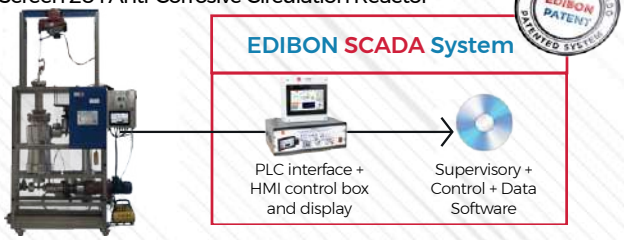


11.1.12. SOLIDS TREATMENT

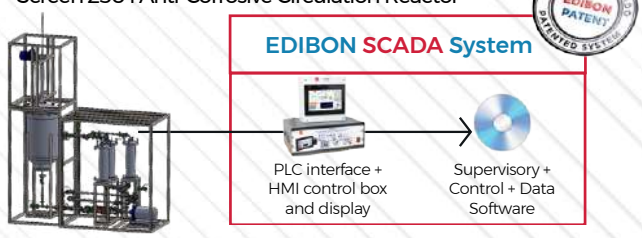
QMS. Solids Handling Study Unit

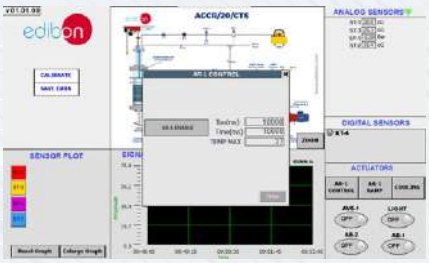
11.2. CHEMICAL REACTORS

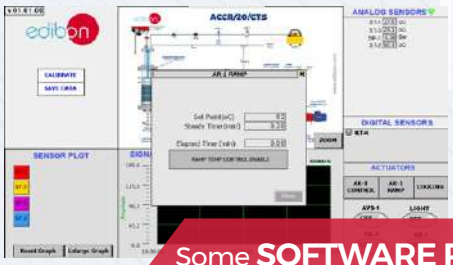
ACCR/20/CTS. Computer Controlled and Touch Screen 20 l Anti-Corrosive Circulation Reactor



ACCR/250/CTS. Computer Controlled and Touch Screen 250 l Anti-Corrosive Circulation Reactor

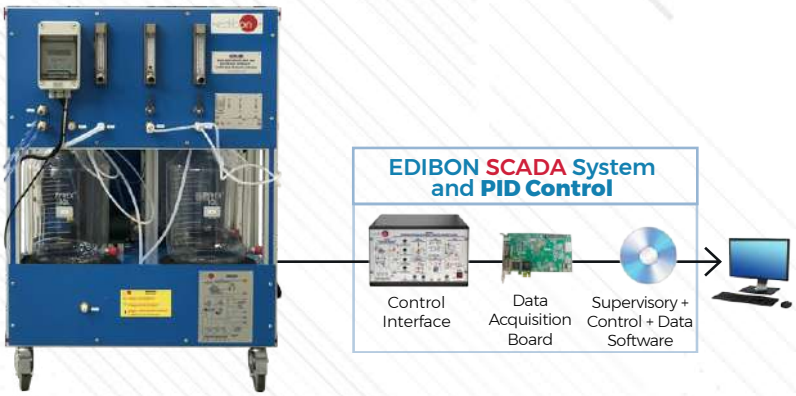






Some **SOFTWARE RESULTS** screens

QRQC. Computer Controlled Chemical Reactors Training System



QRUBI. Base and Service Unit for QRQC

★ *REQUIRED ELEMENTS FOR QRUBI (At least one is required):*

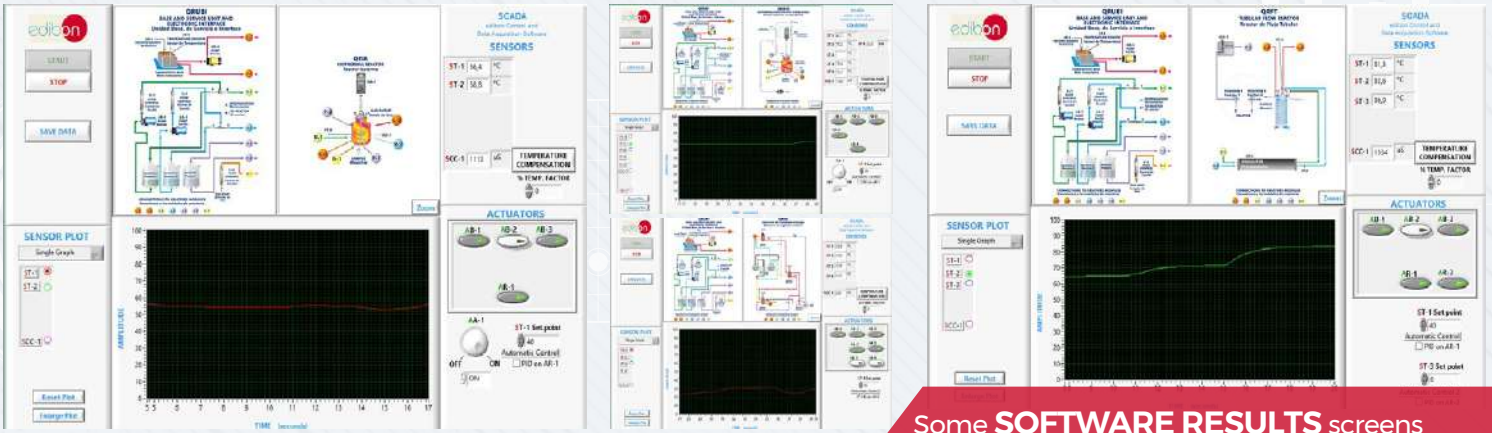
QRIA. Isothermal Reactor with Stirrer

QRIA/D. Isothermal Reactor with Stirrer and Distillation

QRFT. Tubular Flow Reactor

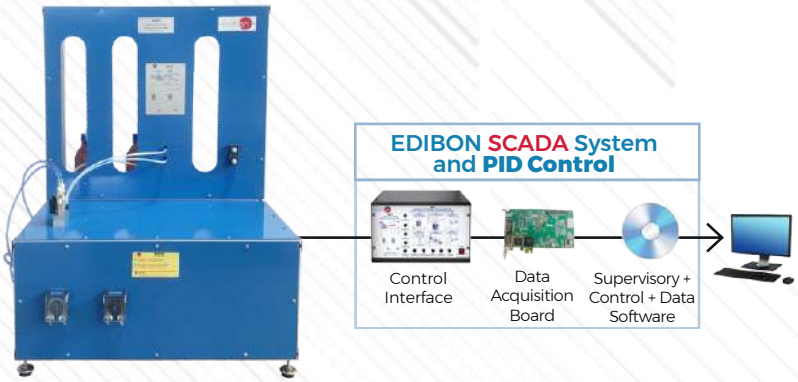
QRAD. Adiabatic and Isothermal Reactor

QRSA. Reactors with Stirrer in Series



Some **SOFTWARE RESULTS** screens

QRC. Computer Controlled Chemical Reactors

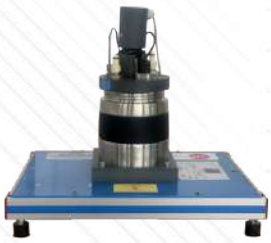


QUSC. Base and Service Unit for QRC

★ *REQUIRED ELEMENTS FOR QUSC (At least one is required):*

QRCAC. Computer Controlled Continuous Stirred Tank Reactor for QRC

QRTC. Computer Controlled Tubular Flow Reactor for QRC

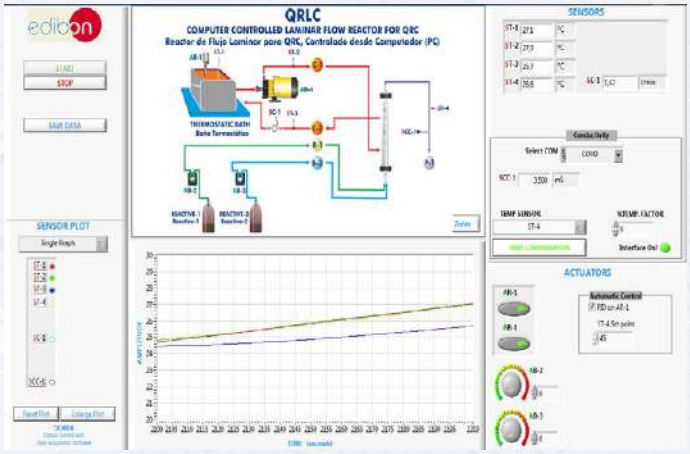


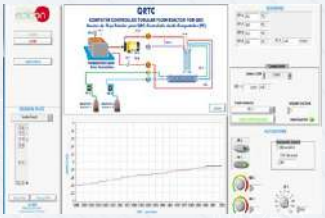
QRDC. Computer Controlled Batch Reactor for QRC

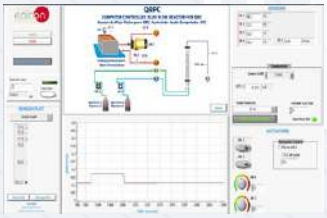
QRSC. Computer Controlled Stirred Tank Reactors in Series for QRC

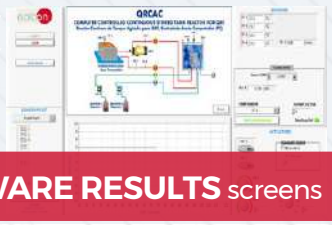
QRLC. Computer Controlled Laminar Flow Reactor for QRC

QRPC. Computer Controlled Plug Flow Reactor for QRC



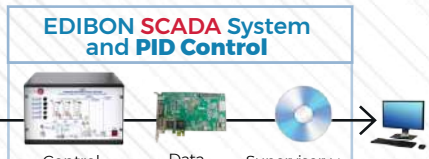




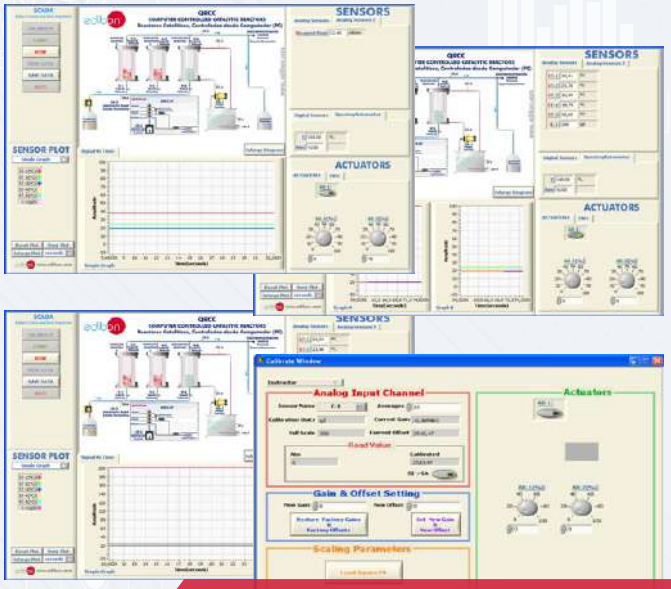


Some **SOFTWARE RESULTS** screens

QRCC. Computer Controlled Catalytic Reactors

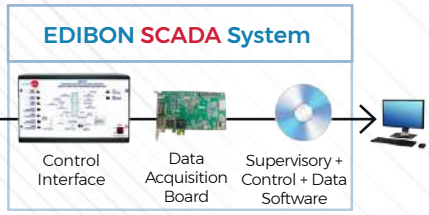


QRCC-IF. Computer Controlled Flow Injection Analysis (FIA) Unit

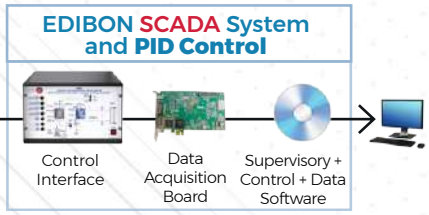


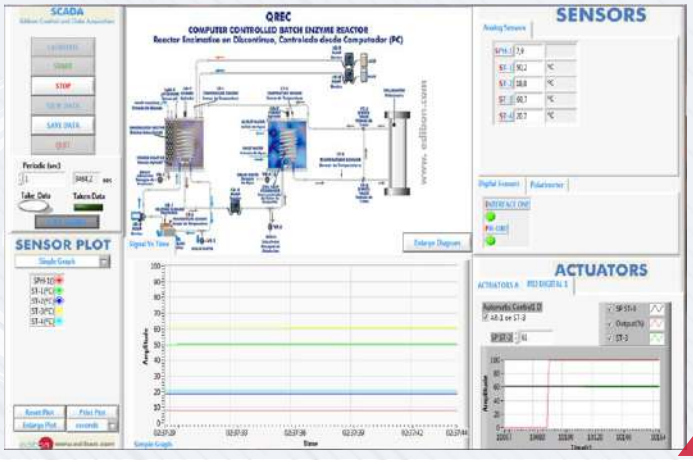
Some **SOFTWARE RESULTS** screens

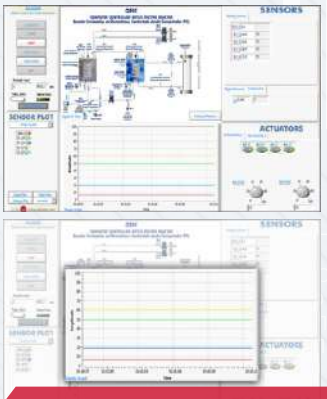
QRALC. Computer Controlled Airlift Reactor



QREC. Computer Controlled Batch Enzyme Reactor





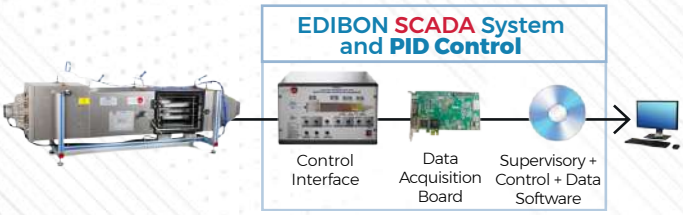


Some **SOFTWARE RESULTS** screens

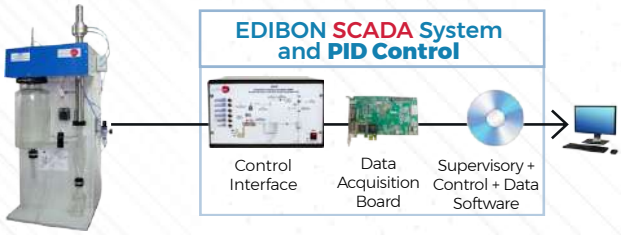
12 FOOD & WATER TECHNOLOGIES

12.1. FOOD TECHNOLOGY

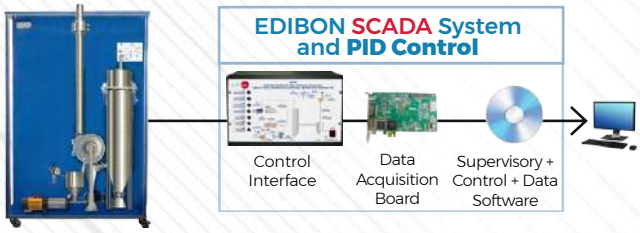
SBANC. Computer Controlled Tray Drier



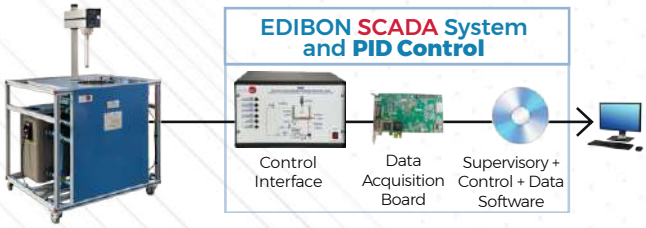
SSPC. Computer Controlled Spray Drier



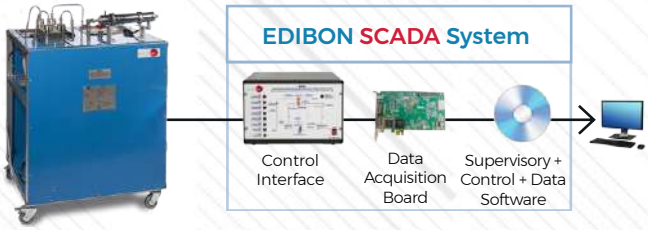
SDCC. Computer Controlled Spray Dryer and Chiller Unit



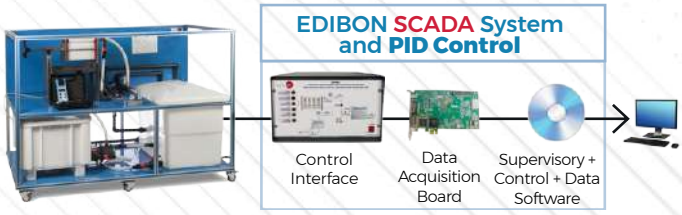
VPMC. Computer Controlled Multipurpose Processing Vessel



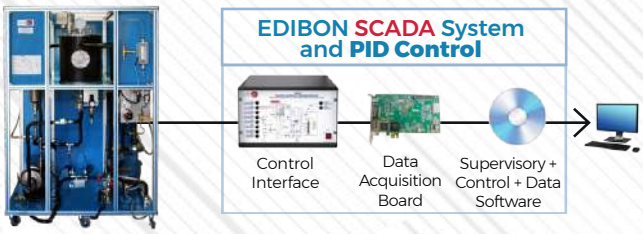
ROUC. Computer Controlled Reverse Osmosis/ Ultrafiltration Unit



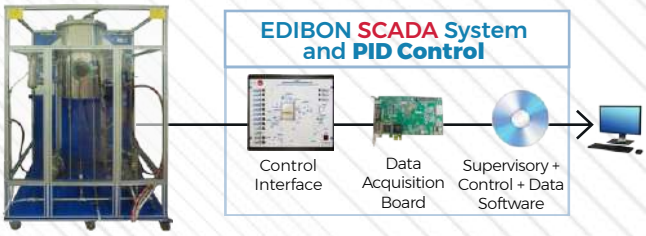
AFPMC. Computer Controlled Plate and Frame Filter Press



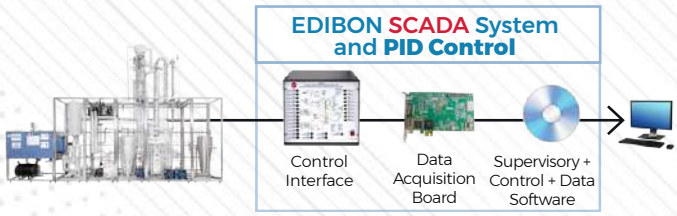
AEHC. Computer Controlled Hydrogenation Unit



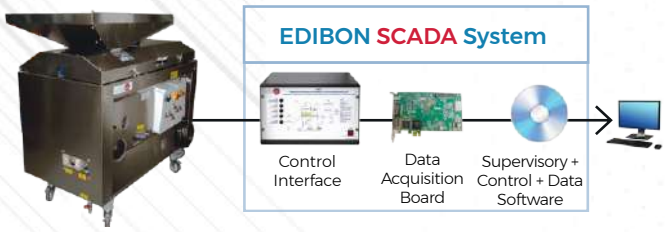
AEDC. Computer Controlled Deodorizing Unit



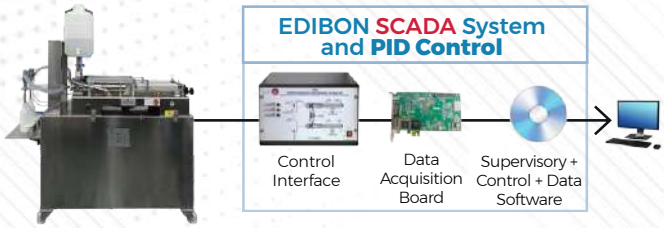
AEDC/A. Advanced Computer Controlled Deodorizing Unit



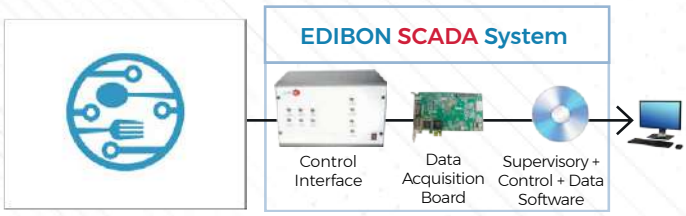
PACC. Computer Controlled Continuous Cycle Oil Production Plant



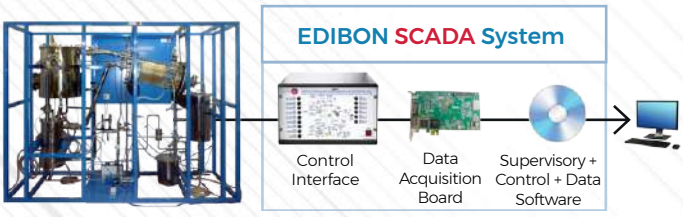
EDLC. Computer Controlled Liquid Packaging Teaching Unit



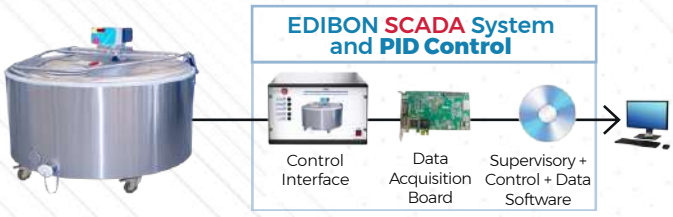
EDSC. Computer Controlled Solids Packaging Teaching Unit



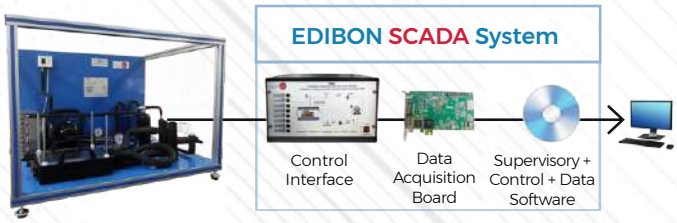
QEDC. Computer Controlled Batch Solvent Extraction and Desolventising Unit



TFDC. Computer Controlled Teaching Frigorific Tank



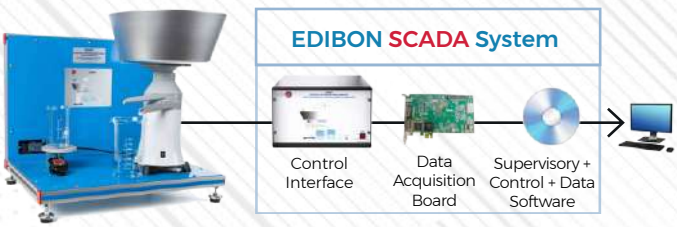
TPCC. Computer Controlled Contact Plate Freezer



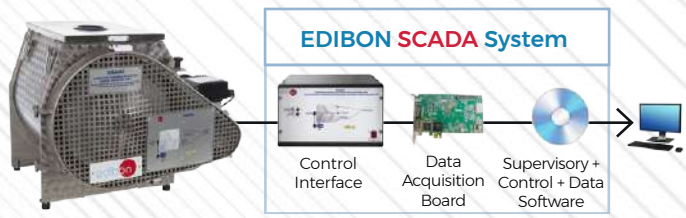
BLIO. Freeze Dryer

12.2. DAIRY PRODUCTS TREATMENT

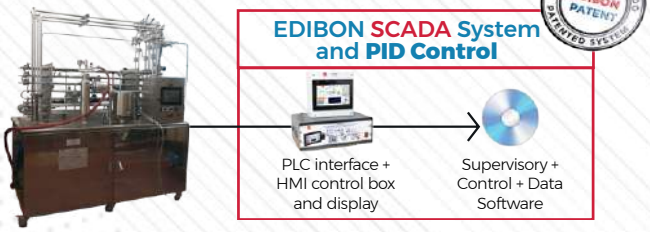
DSNC. Computer Controlled Teaching Cream Separator



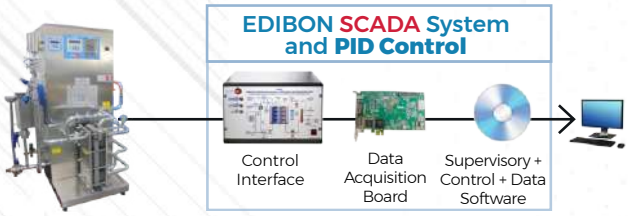
EMANC. Computer Controlled Butter Maker Teaching Unit



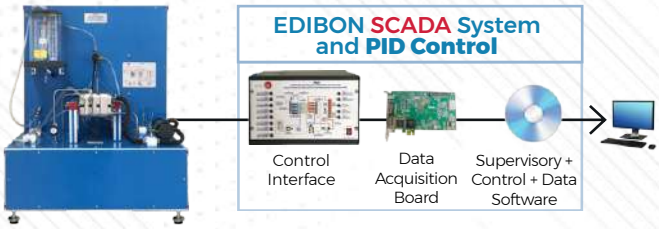
AUHT/CTS. Computer Controlled and Touch Screen UHT Unit



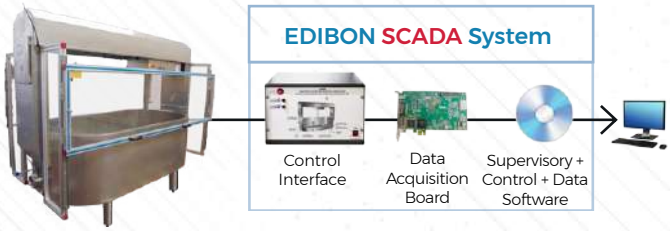
PADC. Computer Controlled Teaching Autonomous Pasteurization Unit



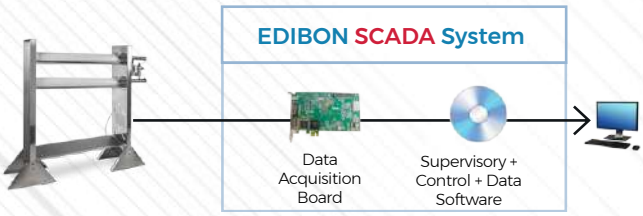
PASC. Computer Controlled Laboratory Pasteurizer



CCDC. Computer Controlled Teaching Curdling Tank

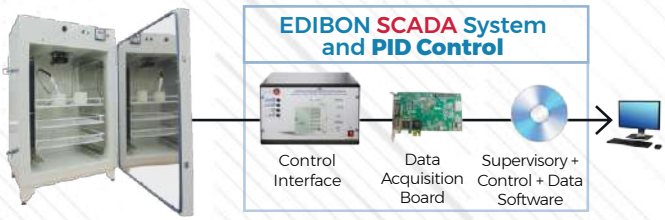


PVQC. Computer Controlled Teaching Cheese Press

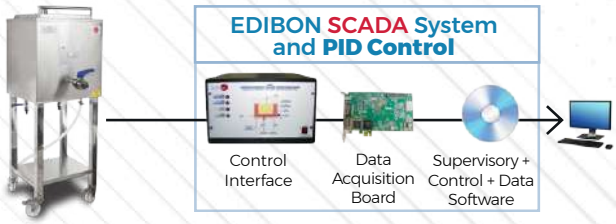


DVCP. Dutch Vat for Cheese Production (until 50l)

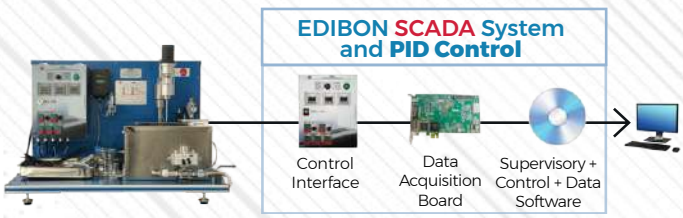
IYDC. Computer Controlled Teaching Yogurt Incubator



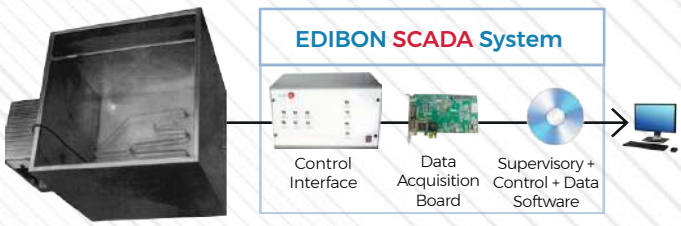
RDC. Computer Controlled Teaching Cottage Cheese Maker



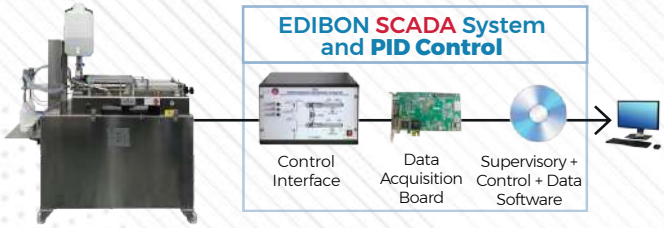
AEQC. Computer Controlled Cheese Vat



FQDC. Computer Controlled Teaching Cheese Melter

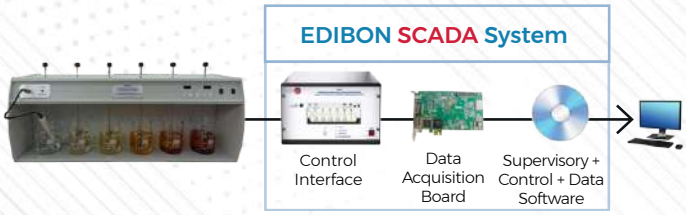


EDLC. Computer Controlled Liquid Packaging Teaching Unit

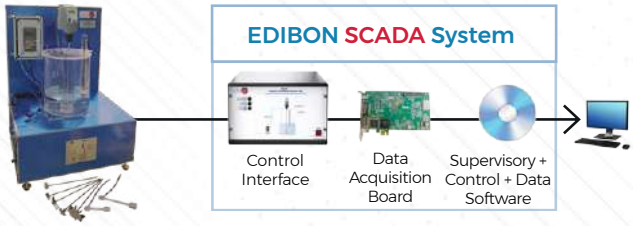


12.3. DRINKING WATER TREATMENT

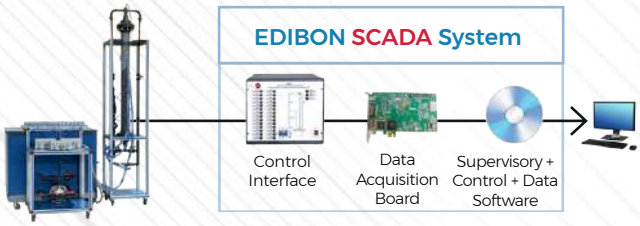
PEFC. Computer Controlled Flocculation Test Unit



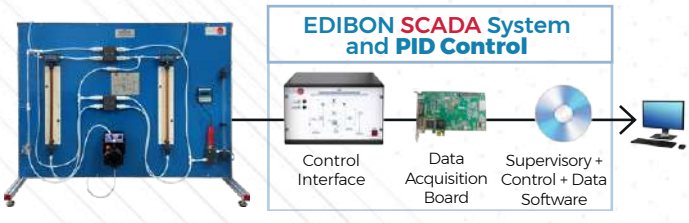
PEAIC. Computer Controlled Aeration Unit



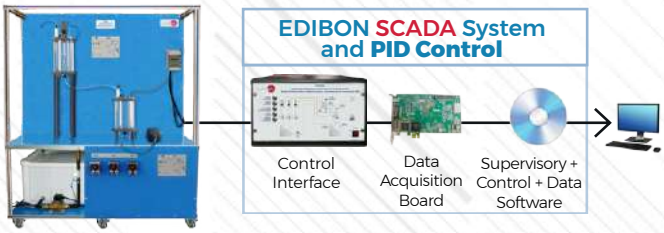
EFLPC. Computer Controlled Deep Bed Filter Unit



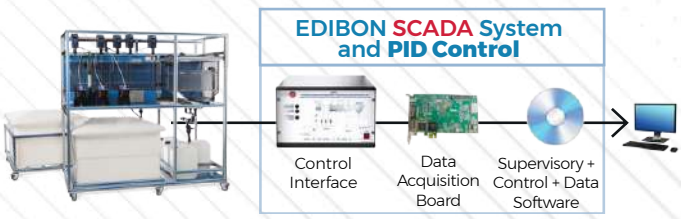
EIIC. Computer Controlled Ion Exchange Unit



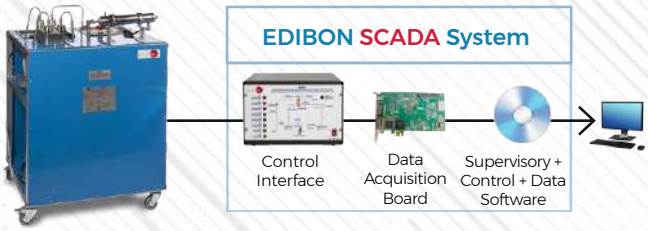
PCCAC. Computer Controlled Water Quality Control Unit



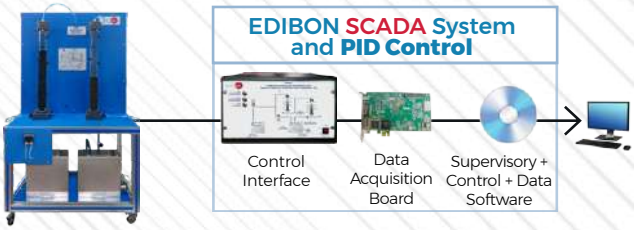
SPFC. Computer Controlled Sedimentation, Precipitation and Flocculation Unit



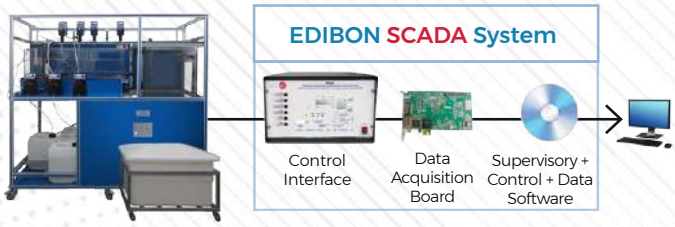
ROUC. Computer Controlled Reverse Osmosis/ Ultrafiltration Unit



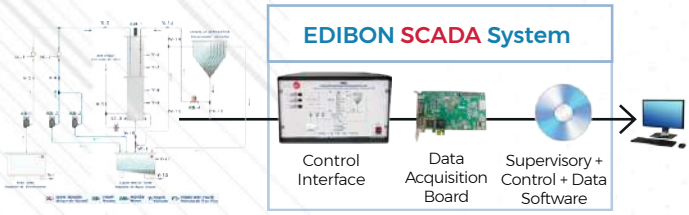
PEAC. Computer Controlled Adsorption Unit



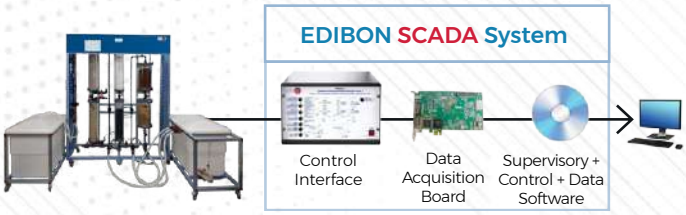
PFADC. Computer Controlled Dissolved Air Flotation Unit



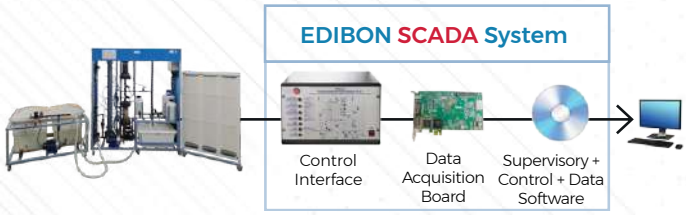
PPBC. Computer Controlled Biofilm Process Unit

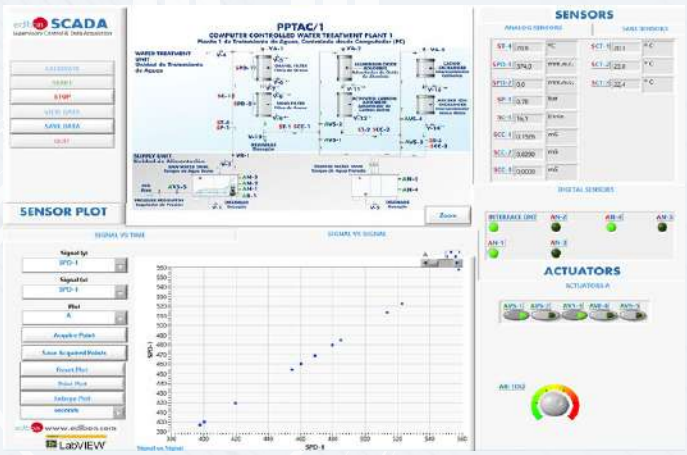


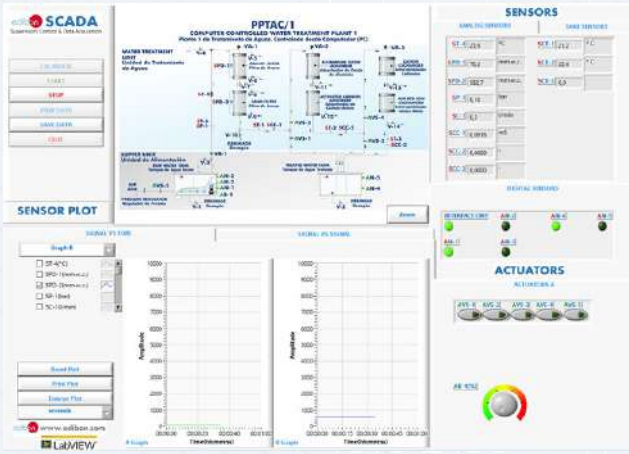
PPTAC/1. Computer Controlled Water Treatment Plant 1



PPTAC/2. Computer Controlled Water Treatment Plant 2





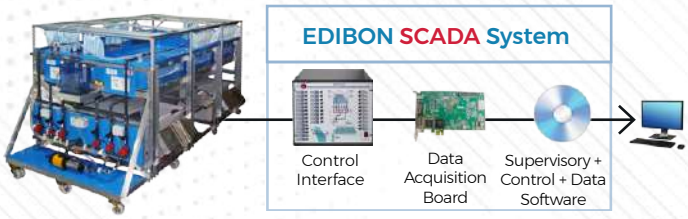


Some **SOFTWARE RESULTS** screens

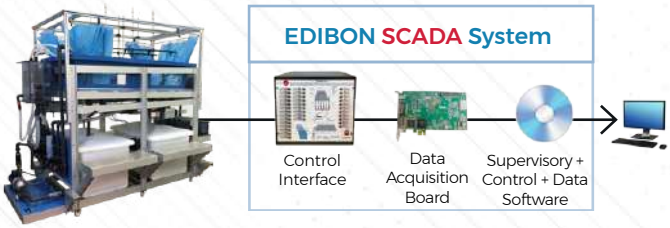
13 ENVIRONMENT

13.1. HYDROLOGY AND HYDROGEOLOGY

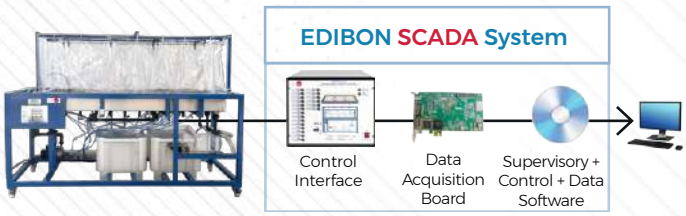
ESHC(4x2m). Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (4x2 m)



ESHC(2x1m). Computer Controlled Hydrologic Systems, Rain Simulator and Irrigation Systems Unit (2x1 m)

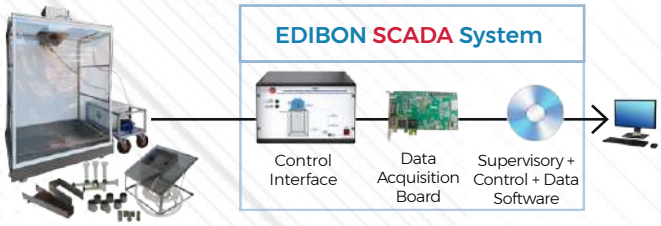


ESHC(2x1m)/S. Computer Controlled Hydrologic Studies Unit



RHU. Rainfall Hydrographs Unit

RSESC. Computer Controlled Rainfall Simulator for Soil Erosion Studies



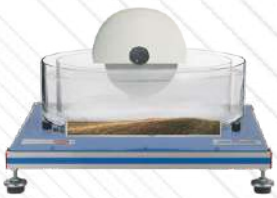
RFS. River Flow Simulator

HVFLM-2. Mobile Bed and Flow Visualization Unit (working section: 2000X610 mm)

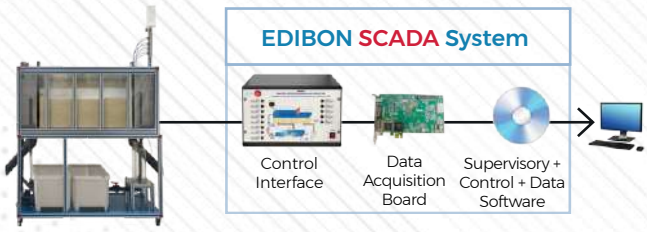
HVFLM-4. Mobile Bed and Flow Visualization Unit (working section: 4000x610 mm)

CAS. Sediment Transport Demonstration Channel

STU. Sediment Transport Unit



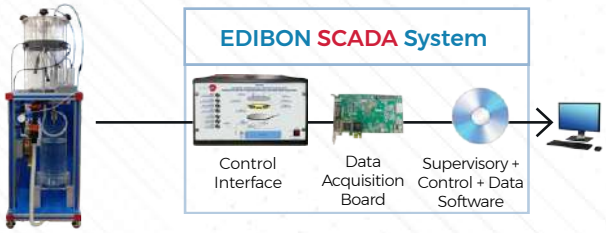
PDFDC. Computer Controlled Drainage and Seepage Tank



PTSA. Soil/Water Model Tank

EFAS. Ground Water Flow Unit

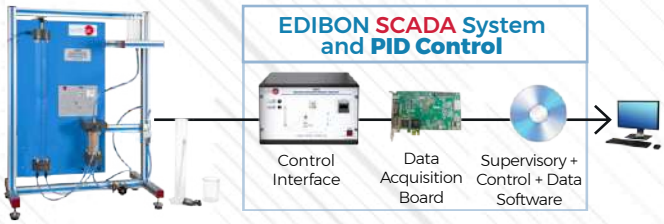
PAHSC. Computer Controlled Soil Moisture Suction Sand Unit



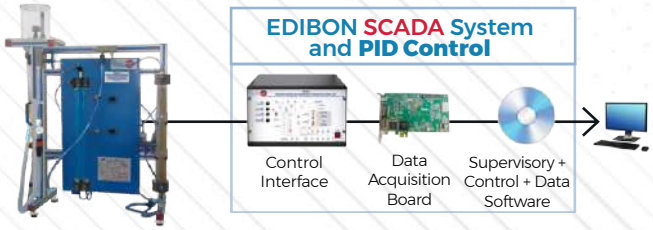
PL. Demonstration Lysimeter

PPD. Drain Permeameter

PEIFC. Computer Controlled Filterability Index Unit

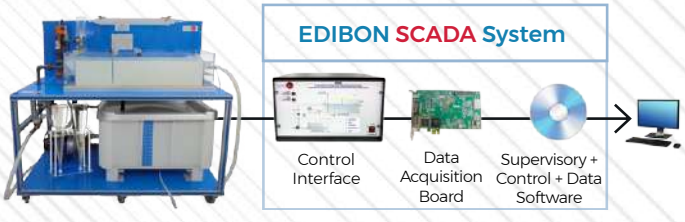


PEFPC. Computer Controlled Permeability/Fluidisation Studies Unit



PEDI. Demonstration Infiltration Unit

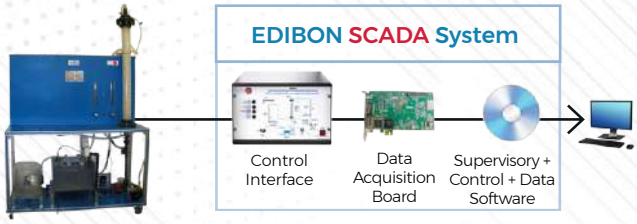
PDSC. Computer Controlled Sedimentation Tank



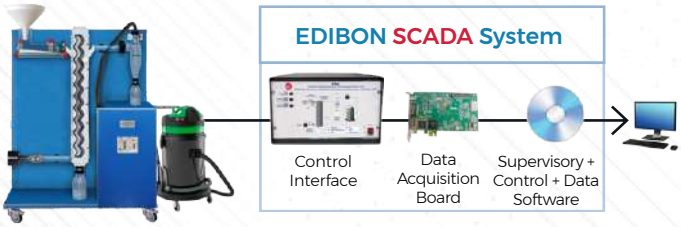
ESED. Sedimentation Study Unit

13.2. ENVIRONMENTAL POLLUTION

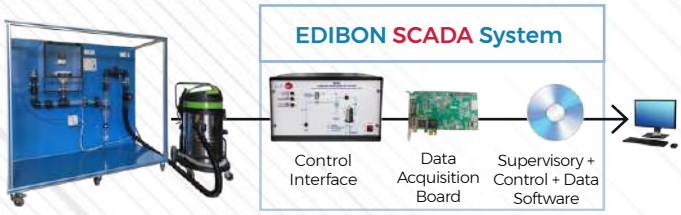
PLGC. Computer Controlled Gas Washing Processing Plant



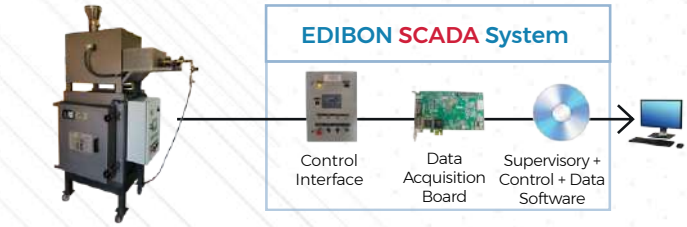
PSNC. Computer Controlled Gas Flow Classification Unit



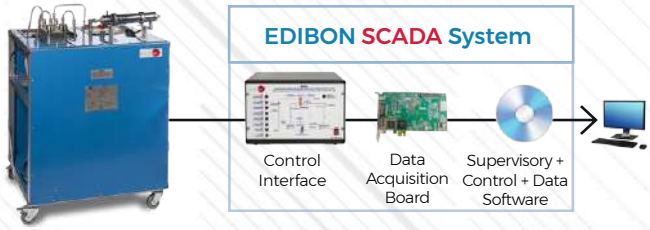
PCGC. Computer Controlled Gas Cyclone



EPIRC. Computer Controlled Pyrolysis Unit

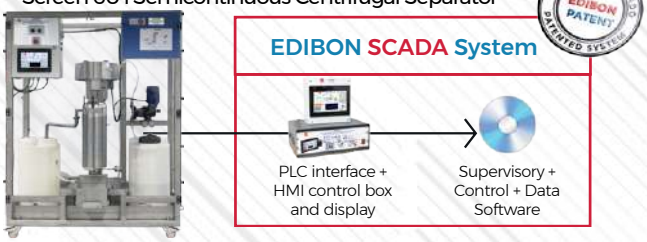


ROUC. Computer Controlled Reverse Osmosis/ Ultrafiltration Unit

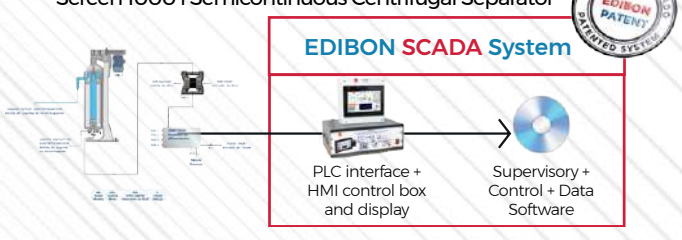


13.3. WASTEWATER TREATMENT

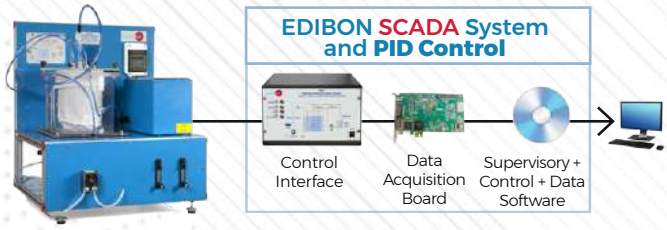
SCS/60/CTS. Computer Controlled and Touch Screen 60 l Semicontinuous Centrifugal Separator



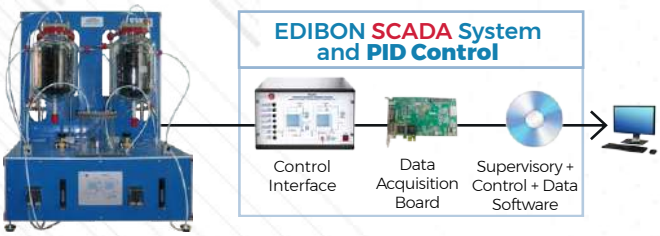
SCS/1000/CTS. Computer Controlled and Touch Screen 1000 l Semicontinuous Centrifugal Separator



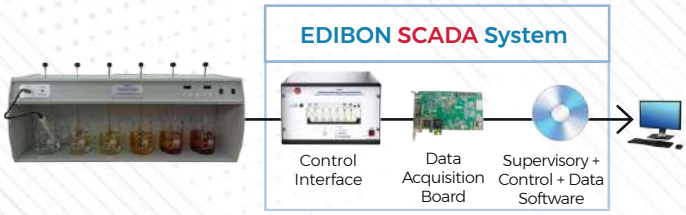
PDAC. Computer Controlled Aerobic Digester



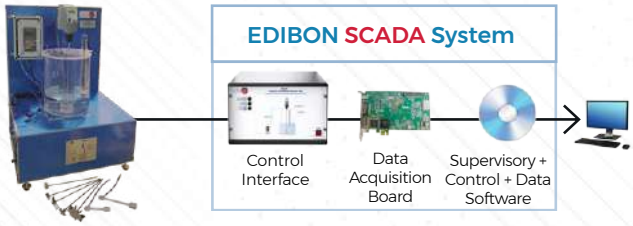
PDANC. Computer Controlled Anaerobic Digester



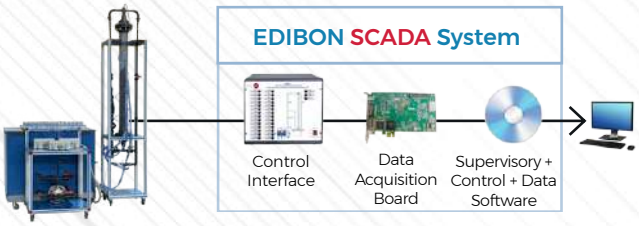
PEFC. Computer Controlled Flocculation Test Unit



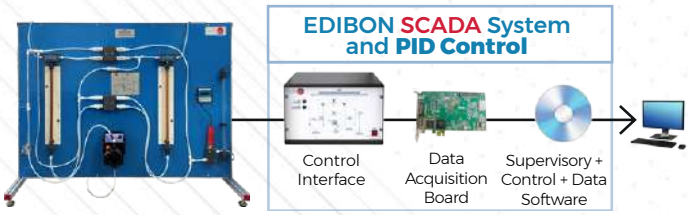
PEAIC. Computer Controlled Aeration Unit



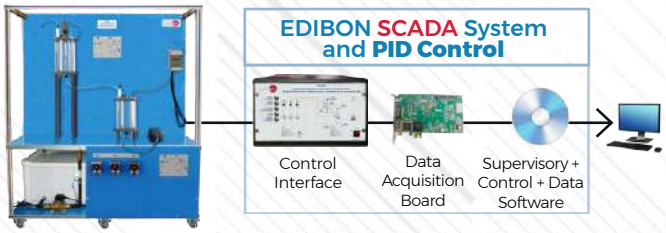
EFLPC. Computer Controlled Deep Bed Filter Unit



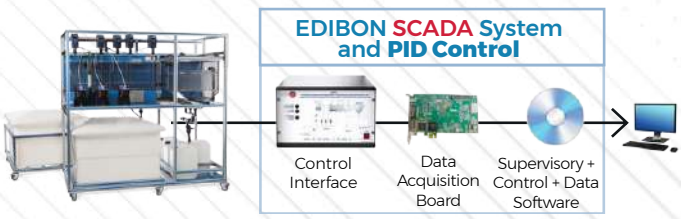
EIIC. Computer Controlled Ion Exchange Unit



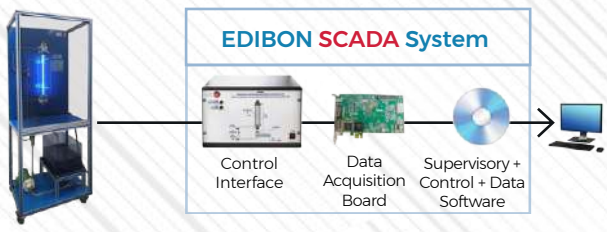
PCCAC. Computer Controlled Water Quality Control Unit



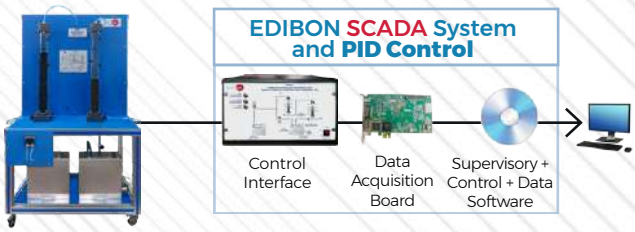
SPFC. Computer Controlled Sedimentation, Precipitation and Flocculation Unit



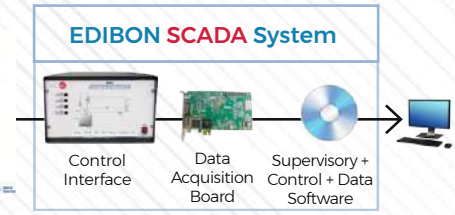
POAC. Computer Controlled Advanced Oxidation Unit



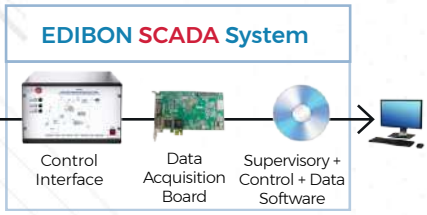
PEAC. Computer Controlled Adsorption Unit



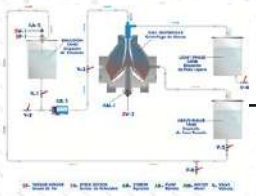
PHCC. Computer Controlled Hydrocyclone

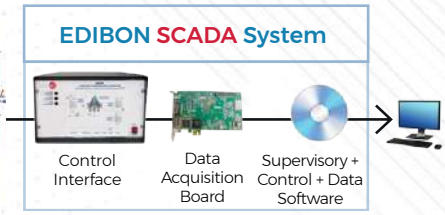


PFTC. Computer Controlled Drum Cell Filter

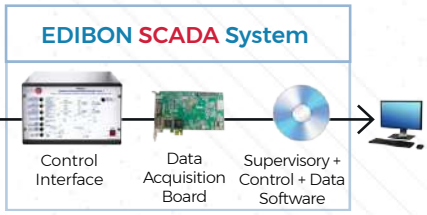


QCDIC. Computer Controlled Disc Centrifuge

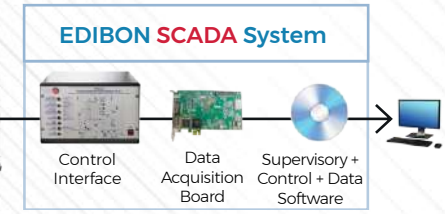




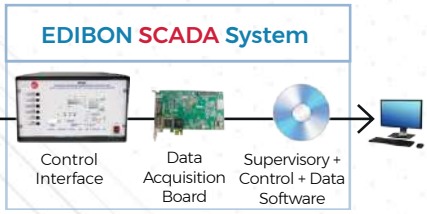
PPTAC/1. Computer Controlled Water Treatment Plant 1



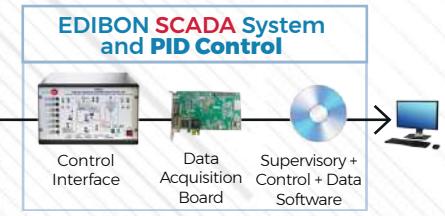
PPTAC/2. Computer Controlled Water Treatment Plant 2



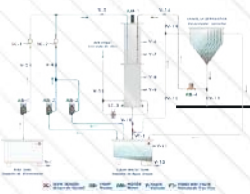
PFADC. Computer Controlled Dissolved Air Flotation Unit

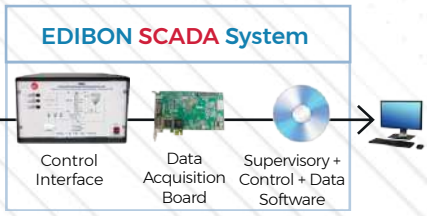


PPFAC. Computer Controlled Activated Sludge Process Unit



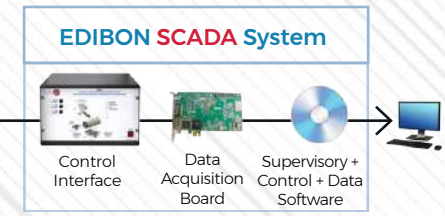
PPBC. Computer Controlled Biofilm Process Unit





13.4. RECYCLING

PSMC. Computer Controlled Magnetic Separation Unit



14 BIOMEDICAL ENGINEERING

14.1. BIOMECHANICS

14.1.1. MECHANICS FUNDAMENTALS KITS

LIMEBA. Basic Mechanics Integrated Laboratory

MECA/EC. Panel and Common Elements Case for LIMEBA

★ ***REQUIRED ELEMENTS FOR MECA/EC*** *(At least one is required):*

MECA1. Statics Experiments

MECA2. Load Elevation Mechanisms Experiments

MECA3. Transmissions Experiments

MECA4. Dynamics Experiments

MECA5. Friction Experiments

MECA6. Special Mechanisms Experiments

14.1.2. SIMPLE MACHINES

14.1.2.1. MECHANISMS

MBD. Slider Crank Mechanism

MYE. Scotch Yoke Mechanism

MBM1. Slotted Link Mechanism

MBM2. Whitworth Quick Return Mechanism

MCA. Four-Bar Mechanism

MME. Geneva Stop Mechanism

MAC. Coupling Mechanism

MUN. Hooke's Joint Mechanism

MEX. Cam and Follower Mechanism

MBI. Crank Mechanism

MDA. Ackermann Steering Mechanism

MMEL. Winch Mechanism

MBLU. Bar Linkages Unit

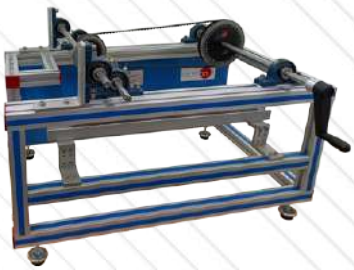
14.1.2.2. GEARS

MTSF. Worm and Wheel Unit

MAE. Acceleration of Geared System Unit

MSDA. Simple Drives Assembly Unit

MCDA. Combined Drives Assembly Unit

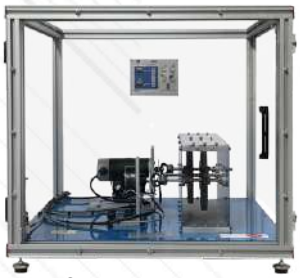


MGTA. Gear Train Assembly Unit

MGE. Gear Generation Unit

MEE. Geared Lifting Unit

MESE-T. Geared Study

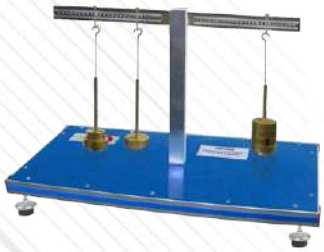


MESE. Geared Study Drive Unit

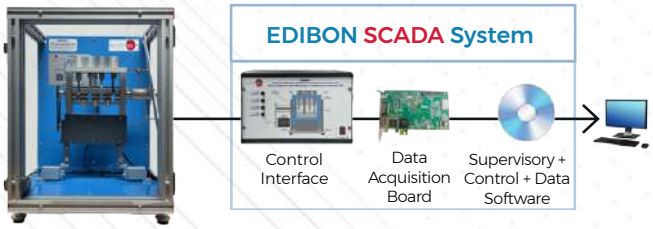
KSGT. Unit for the Kinematic Study of Gear Trains

14.1.3. STATICS AND DYNAMICS

MEMB2. Unit for studying Equilibrium of Moments on a Two Arm Lever

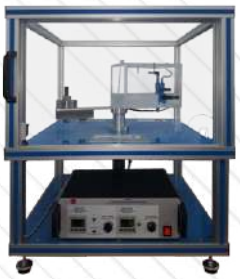


MBMRC. Computer Controlled Balance of Reciprocating Masses Unit



MEAL. Cam Analysis Unit

MDFC. Coriolis Force Demonstration Unit



MFCE. Centrifugal Force Unit

MGI. Gyroscope

CGU. Centrifugal Governor Unit

MED. Static and Dynamic Balancing Unit

MES. Simple Balancing Unit

MIF. Inertia Flywheel Unit

MRYE1. Wheel and Axle Unit

MRYE2. Wheel and Differential Axle Unit

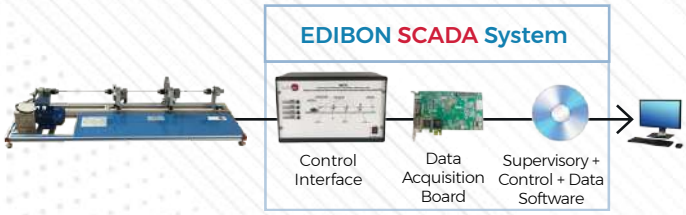
MELH. Unit for studying Hooke´s Law

MSHU. Simple Harmonic Motion Unit

SRI. Unit to Study Rotational Inertia

14.1.4. VIBRATIONS AND OSCILLATIONS

MEVTC. Computer Controlled Torsional Vibration Unit



MVRE. Vibration of Coil Spring Unit

MVL. Free Vibration Unit

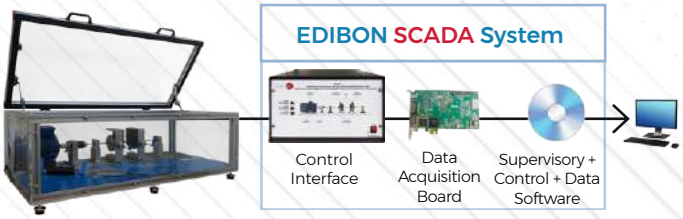
MVLF. Free & Forced Vibration Unit

MEVLB. Unit for Studying Free Vibration of a Bar

MSHU. Simple Harmonic Motion Unit

MOT. Torsional Oscillations Unit

MVCC. Computer Controlled Critical Speed Investigation Unit



MEER. Whirling of Shafts Unit

14.1.5. TRIBOLOGY (FRICTION, WEAR, LUBRICATION)

MCF. Belt Friction Unit

MEF. Friction Study Unit

MPCO. Journal Bearing Unit

MEMT. Tribology Modular Unit

Complete configuration example for MEMT

MEMT-UB. Drive Unit for Tribological Tests

MEMT-1. Radial Pressure Distribution in a Journal Bearing

MEMT-2. Dynamic Friction of a Cylinder on a Roller

MEMT-3. Dynamic Friction of a Pin on a Disc

MEMT-4. Rolling Friction in Wheels

MEMT-5. Elastohydrodynamic Lubrication

MEMT-6. Friction Vibration

MCD. Thin Cylinder Unit

MBF. Unit for Studying Bearing Friction

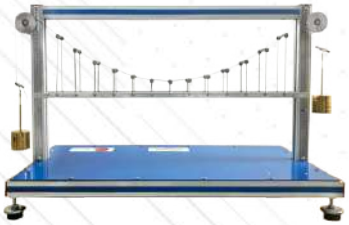
MCF/A. Belt Friction Unit with Dynamometers

MCPG. Thick Walled Cylinder Unit

14.1.6. STRUCTURAL MECHANICS

MFPG. Unit for studying Forces in a Jib Crane

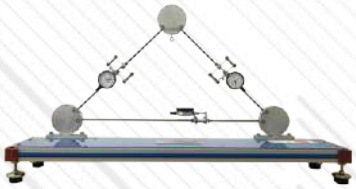
MVS. Suspension Bridge Unit



MARP. Parabolic Arch Unit

MART. Three-Hinged Arch Unit

MFBS. Unit for Studying Forces in a Simple Bar Structure



MFCS1. Unit for studying Forces in Different Single Plane Trusses

MFCS2. Unit for studying Forces in an Overdeterminate Truss

MFCS3. Unit for studying Deformation of Trusses

MFL. Two Hinged Arch Unit

MPO. Portal Frame Unit

STH. Stress Hypotheses Unit

MEPE. Simple Stability Problems Study Unit

MDLE. Unit for studying Methods to Determine the Elastic Line

MCD. Thin Cylinder Unit

SSM. Unit to Study Stress on a Membrane

MVV. Unsymmetrical Cantilever Unit

MDB. Deflection of Curved Bars Unit

MFV. Beam Deflection Unit

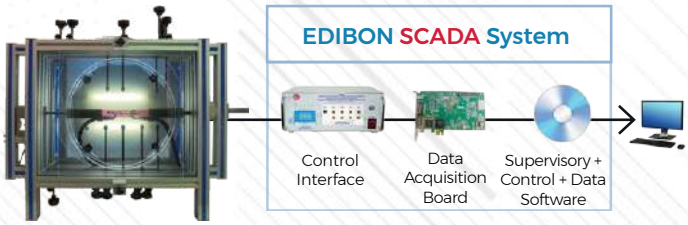
MFLT. Strut Buckling Unit

MUP. Universal Buckling Unit

MMF. Shear Force and Bending Momentum Unit

14.1.7. PHOTOELASTICITY AND STRAIN MEASUREMENT

EFOC. Computer Controlled Photoelasticity Unit



MEGE. Strain Gauge Training Unit

MFGE. Unit for Determining the Gauge Factor of Strain Gauges

PSD. Photoelastic Stress Demonstration Unit

14.1.8. MECHANICAL TESTS

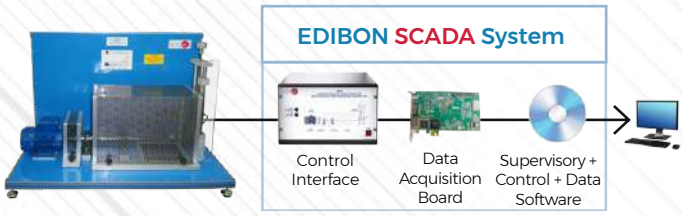
EEU/20KN. Universal Material Testing Unit

EEDB. Brinell Hardness Testing Unit

EBVR. Brinell, Vickers & Rockwell Hardness Testing Unit

EEFCR. Creep Testing Unit

EEFC. Computer Controlled Fatigue Testing Unit



EEICI. Charpy and Izod Impact Testing Unit

MUP. Universal Buckling Unit

MFLT. Strut Buckling Unit

MEBM. Euler Buckling Modes Unit

MTP. Torsion and Bend Unit

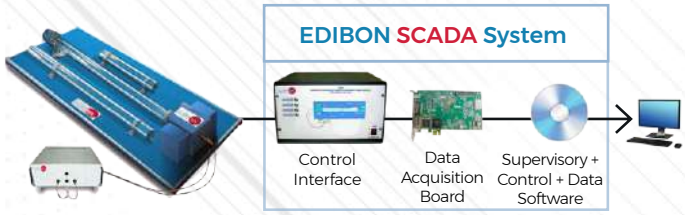
MTB. Torsion Unit

MTT. Torsion Test Unit (30Nm)

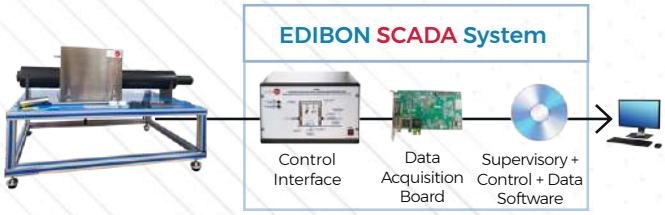
MTTU. Tensile Tester Unit

14.1.9. THERMAL AND ACOUSTIC TESTS

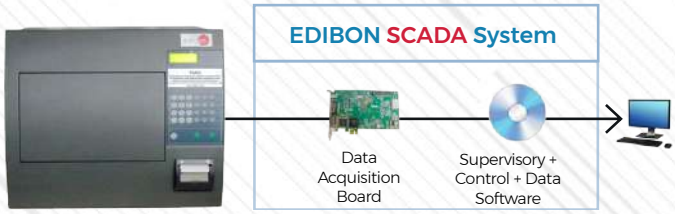
TIAC. Computer Controlled Acoustic Impedance Tube/ Acoustic Insulation Test Unit



TDRC. Computer Controlled Noise Control Demonstration Unit



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



14.2. BIOMEDICAL ELECTRONICS

14.2.1. THEORETICAL-PRACTICAL FUNDAMENTALS

14.2.1.1. BASIC ELECTRICAL LAWS CONCEPTS

LIEBA. Basic Electronics and Electricity Laboratory

Complete configuration example for LIEBA

- **N-M1**. Direct Current (DC) Circuits Module.
- **N-M2**. Alternating Current (AC) Circuits Module.
- **N-M16**. Electric Networks Module.
- **N-M17**. Electromagnetism Module.
- **N-M18**. Three-phase Circuits Module.

N-M16. Electric Networks Module.

14.2.1.2. ANALOG ELECTRONICS

LIEBA. Basic Electronics and Electricity Laboratory

- **N-M6**. Oscillators Module.
- **N-M7**. Operational Amplifiers Module.
- **N-M8**. Filters Module.

N-M6. Oscillators Module.

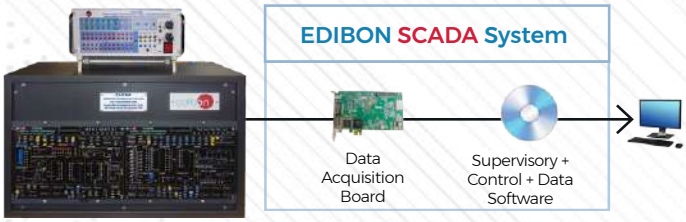
14.2.1.3. DIGITAL ELECTRONICS

LIEBA. Basic Electronics and Electricity Laboratory

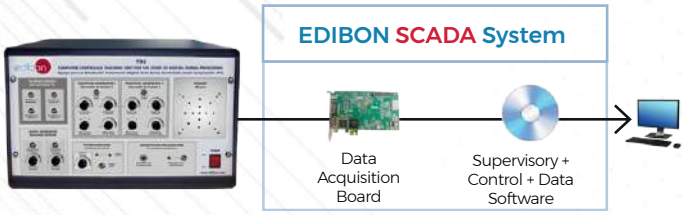
- **N-M60**. Analog/Digital Converters Module.
- **N-M61**. Digital/Analog Converters Module.
- **N-M10**. Digital Systems & Converters Module.
- **N-M11**. Digital Electronics Fundamentals Module.
- **N-M12**. Basic Combinational Circuits Module.
- **N-M13**. Basic Sequential Circuits Module.

N-M12. Basic Combinational Circuits Module.

CADDA. Computer Controlled A/D and D/A Converters Unit



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



14.2.1.4. SEMICONDUCTORS

LIEBA. Basic Electronics and Electricity Laboratory

N-M3. Semiconductors I Module.

N-M4. Semiconductors II Module.

N-M14. Optoelectronics Module.

N-M14. Optoelectronics Module.

14.2.1.5. INSTRUMENTATION AND CONTROL

LIEBA. Basic Electronics and Electricity Laboratory

M44. Applications of Light.

M45. Linear Position and Force.

M46. Environmental Measurements.

M47. Rotational Speed & Position Control.

M48. Sound Measurements.

N-M49. Applications of Temperature and Pressure Module.

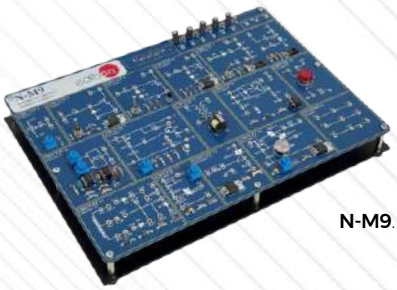
M46. Environmental Measurements.

14.2.1.6. POWER ELECTRONICS

LIEBA. Basic Electronics and Electricity Laboratory

N-M9. Power Electronics Module.

N-M5. Power Supplies Module.



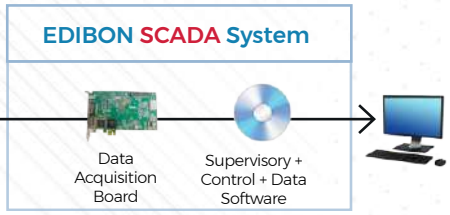
N-M9. Power Electronics Module.

14.2.2. INSTRUMENTATION AND CONTROL

SPC. Weighing System, with Computer Data Acquisition

SCSP. Pressure Sensors Calibration System

BS. Modular System for the Study of Sensors



BSPC. Computer Controlled Base Unit for BS

★ *ADDITIONAL RECOMMENDED ELEMENTS FOR BSPC*

BS1. Vibrations and/or Deformations Test Module

BS2. Temperature Test Module

BS3. Pressure Test Module

BS4. Flow Test Module

BS5. Ovens Test Module

BS6. Liquid level Test Module

BS7. Tachometer Test Module

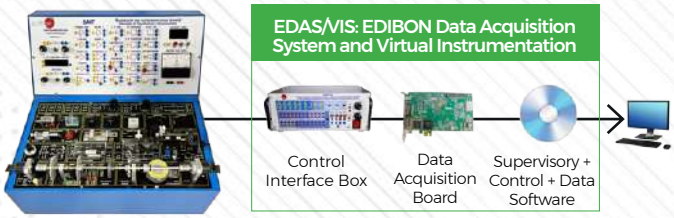
BS8. Proximity Test Module

BS9. Pneumatic Test Module

BS10. Light Test Module

Some **SOFTWARE RESULTS** screens

SAIT. Transducers and Instrumentation Unit



RYC/B. Basic Teaching Unit for the Study of Regulation and Control

RYC/T. Computer Controlled Modular Control and Regulation Unit

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

★ *ADDITIONAL RECOMMENDED ELEMENTS FOR RYC*

RYC-BB. Ball and Beam Module

RYC-SM. DC Servo Motor Module

RYC-TAR. Air Flow Temperature Control Module

RYC-PI. Inverted Pendulum Control Module

RYC-CLM. Magnetic Levitation Control Module

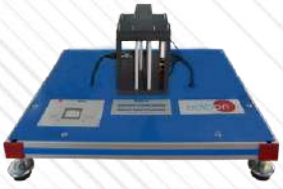
RYC-TAG. Water Flow Temperature Control Module

RYC-TE. Temperature Control Module

RYC-P. Pressure Control Module

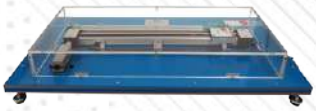
RYC-N. Level Control Module

RYC-C. Flow Rate Control Module

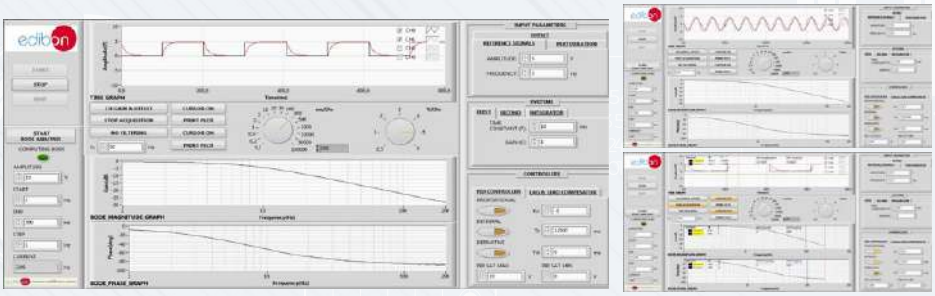


RYC-I. Luminosity Control Module

RYC-pH. pH Control Module



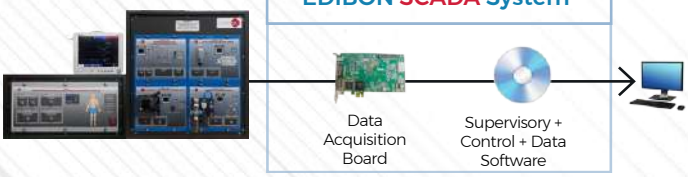
RYC-CP. Position Control Module



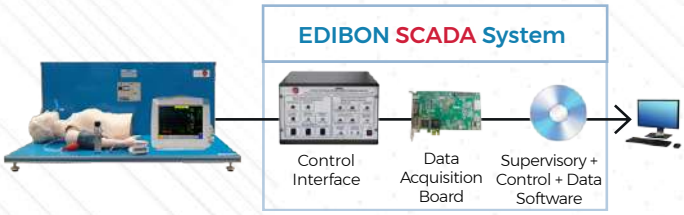
Some **SOFTWARE RESULTS** screens

14.3. BIOMEDICAL EQUIPMENT

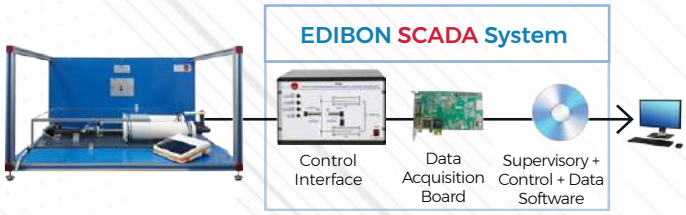
BIHBPC. Computer Controlled Biomedical Parameters and Biosignals Unit



BIPBSC. Computer Controlled Biomedical Patient Biosignals Simulation Unit

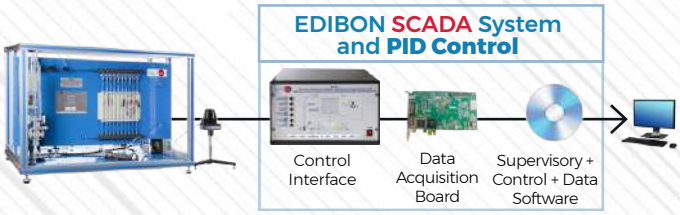


BISBC. Computer Controlled Biomedical Spirometry Unit

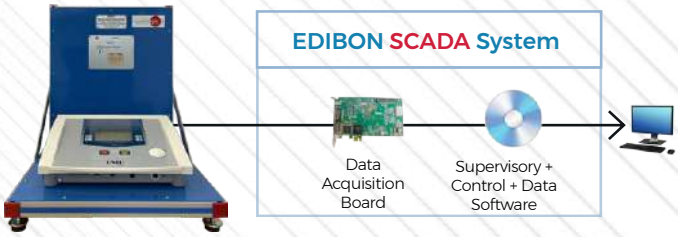


BICIR. Biomedical Electrosurgery Unit

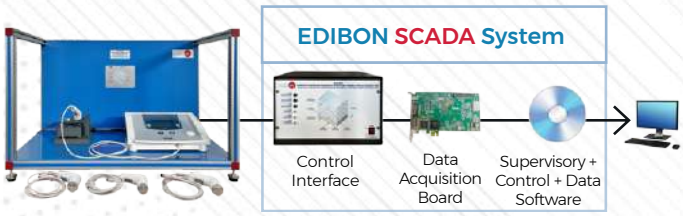
BICSC. Computer Controlled Biomedical Circulatory System Unit



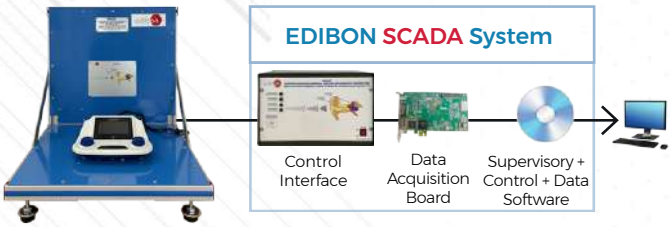
BIETC. Computer Controlled Biomedical Electrotherapy Unit



BIUTEC. Computer Controlled Biomedical Ultrasound Unit



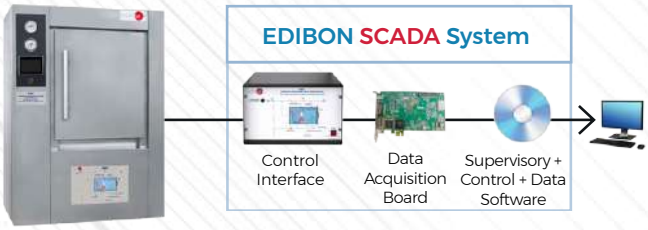
BIADC. Computer Controlled Biomedical Diagnosis and Auditory Unit



BIMAG. Biomedical Magnetotherapy Unit

BIMTE. Thermal Effects of Microwaves in Biomedicine Unit

BIEV. Computer Controlled Steam Sterilizer Unit



LABORATORY ACCESSORIES

- *SERVICES MODULES*
- *TECHNICAL FOURNITURE*
- *INSTRUMENTATION*
- *MULTIMEDIA COMPLEMENTS*

SERVICES MODULES

STEAM GENERATORS

TGV. Steam Generator (3 kW)

TGV/6KW. Steam Generator (6 kW)

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

TGV-18KWA. Steam Generator (18 kW) (for high pressures and high temperatures)

HOT / COLD WATER SUPPLY

WHM. Water Heater Module

TERA. Refrigeration or Heating Water Recirculation Unit

TERA/A. Refrigeration or Heating Water Recirculation Advanced Unit

MAINTENANCE OF REFRIGERATION AND AIR CONDITIONING EQUIPMENT

T/KIT1. Maintenance Kit containing Vacuum Pump, Hoses and Manometers

T/KIT2. Maintenance Kit containing Leakage Detector

T/KIT3. Maintenance Kit containing Refrigerant Filling and Evacuation module

PRESSURE GROUPS FOR FLUIDS

SAC. Silent Air Compressor Unit

HPU. Hydraulic Power Unit

VPCG. Vacuum Production for Corrosive Gases Unit

FME00. Hydraulics Bench

FME00/B. Basic Hydraulic Feed System

AUXILIARY AND PROTECTION TRANSFORMERS

AUTP. Auxiliary Transformer and Protection Units

TECHNICAL FOURNITURE

TF-CR. Classroom Furniture

TF-LAB. Laboratory Furniture

TF-WS. Workshop Furniture

MULTIMEDIA COMPLEMENTS

C-ID. Interactive Panel

CUSTOMIZED PILOT PLANTS

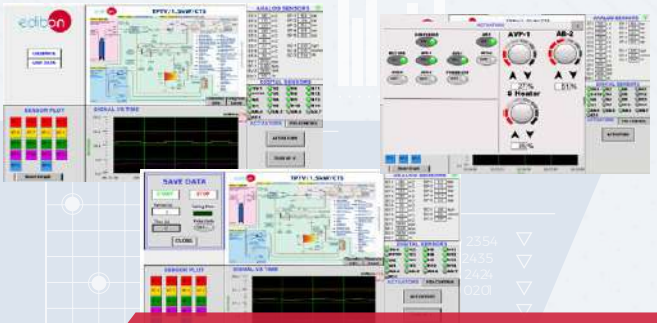
- ENERGY
- THERMODYNAMICS & THERMOTECHNICS
- CHEMICAL ENGINEERING
- FOOD AND WATER TECHNOLOGY
- ENVIRONMENT

ENERGY

TPTV/20kW/CTS. Computer Controlled and Touch Screen 20 kW Steam Power Plant

The Computer Controlled and Touch Screen ***Steam Power*** Plant Adjustable up to 20 kW, "TPTV/20kW/CTS", converts thermal energy into mechanical energy and afterwards into electrical energy. It allows the students to understand the entire process and the basic components of a power plant (heat source to generate steam, a turbine with load and a refrigeration system to condense the steam).

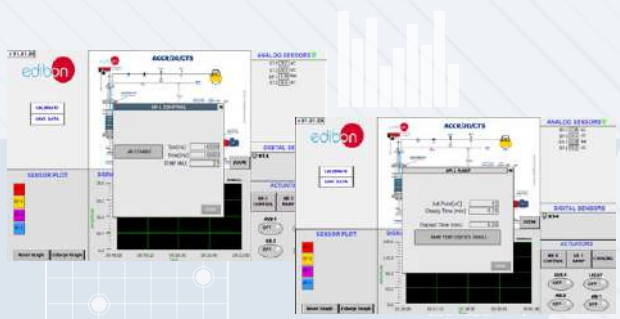
TPTV/1.5kW/CTS. Computer Controlled and Touch Screen 1.5 kW Steam Power Plant



Some **SOFTWARE RESULTS** screens

The Computer Controlled and Touch Screen 1.5 kW ***Steam Power*** Plant, "TPTV/1.5kW/CTS", converts thermal energy into mechanical energy and then into electrical energy. The unit allows students to understand the complete process and the basic components of a thermal power plant (a heat source to generate steam, a turbine with load and a cooling system to condense the steam).

ACCR/20/CTS. Computer Controlled and Touch Screen 20 l Anti-Corrosive Circulation Reactor



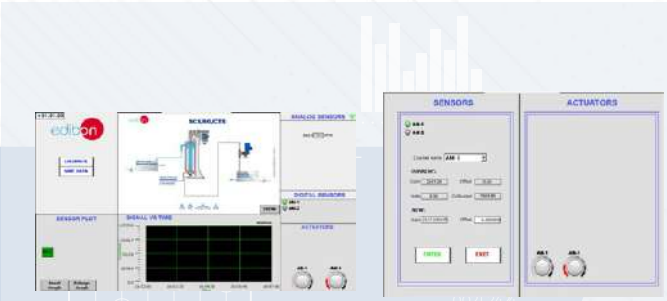
Some **SOFTWARE RESULTS** screens

The Computer Controlled and Touch Screen 20 l ***Anti-Corrosive Circulation Reactor***, "ACCR/20/CTS", is able to show, for further research and study, the fractionation of biomass into its three components of interest: high quality cellulose, hemicellulose and lignin, by using an organic solvent, Gamma-Valerolactone (GVL).

ACCR/250/CTS. Computer Controlled and Touch Screen 250 l Anti-Corrosive Circulation Reactor

The Computer Controlled and Touch Screen 250 l ***Anti-Corrosive Circulation Reactor***, "ACCR/250/CTS", is able to show, for further research and study, the fractionation of biomass into its three components of interest: high quality cellulose, hemicellulose and lignin, through the use of an organic solvent, called Gamma-Valerolactone (GVL). In addition, the unit has the main elements made of PTFE/PFA and coated with ECTFE (Halar) or Niflon, which allows the study of highly corrosive processes.

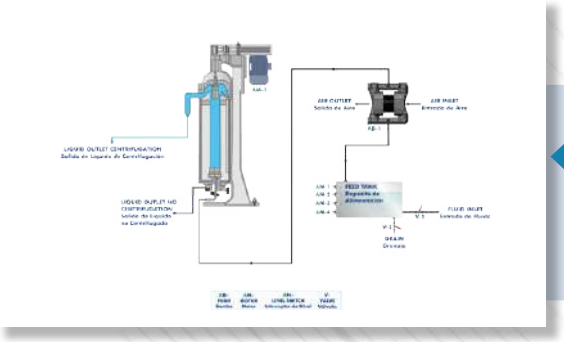
SCS/60/CTS. Computer Controlled and Touch Screen 60 l Semicontinuous Centrifugal Separator



Some **SOFTWARE RESULTS** screens

The Computer Controlled and Touch Screen 60 l Semicontinuous ***Centrifugal Separator***, "SCS/60/CTS", is able to show, for further research and study, the obtaining of lignin from lignocellulosic biomass.

SCS/1000/CTS. Computer Controlled and Touch Screen 1000 l Semicontinuous Centrifugal Separator



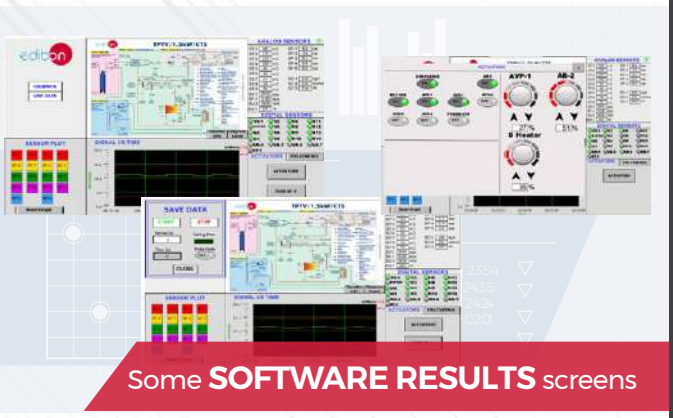
The Computer Controlled and Touch Screen 1000 l Semicontinuous ***Centrifugal Separator***, "SCS/1000/CTS", is able to show, for further research and study, the obtaining of lignin from lignocellulosic biomass.

PBGC/CTS. Computer Controlled and Touch Screen Biogas Processing Plant

The Computer Controlled ***Biogas Processing*** Plant, "PBGC/CTS", has been designed to generate biogas and study different parameters that affect the anaerobic digestion itself and the value of the obtained biogas.

THERMODYNAMICS & THERMOTECHNICS

TPTV/1.5kW/CTS. Computer Controlled and Touch Screen 1.5 kW Steam Power Plant



Some **SOFTWARE RESULTS** screens

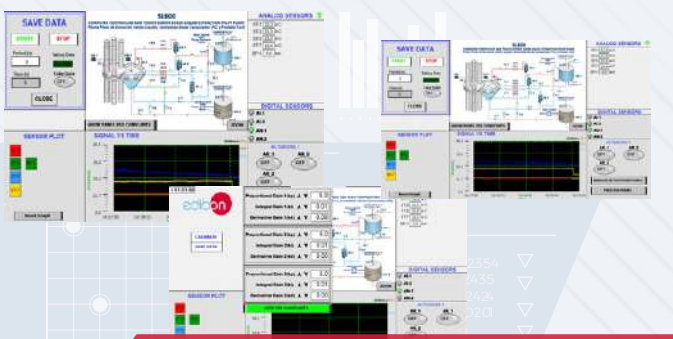
The Computer Controlled and Touch Screen 1.5 kW ***Steam Power*** Plant, "TPTV/1.5kW/CTS", converts thermal energy into mechanical energy and then into electrical energy. The unit allows students to understand the complete process and the basic components of a thermal power plant (a heat source to generate steam, a turbine with load and a cooling system to condense the steam).

TPTV/20kW/CTS. Computer Controlled and Touch Screen 20 kW Steam Power Plant

The Computer Controlled and Touch Screen ***Steam Power*** Plant Adjustable up to 20 kW, "TPTV/20kW/CTS", converts thermal energy into mechanical energy and afterwards into electrical energy. It allows the students to understand the entire process and the basic components of a power plant (heat source to generate steam, a turbine with load and a refrigeration system to condense the steam).

CHEMICAL ENGINEERING

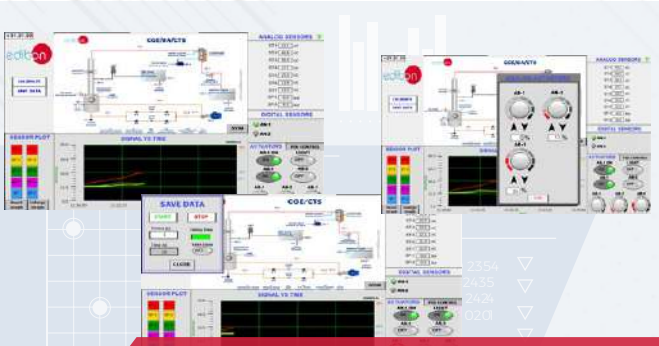
SLE00. Computer Controlled and Touch Screen Solid-Liquid Extraction Pilot Plant



Some **SOFTWARE RESULTS** screens

The Computer Controlled ***Solid-Liquid Extraction*** for High Temperature Unit, "SLE00", consists of a pilot scale installation that allows the extraction of solutes from a solid matrix using different types of solvents and with variable operating conditions, which gives the unit great versatility.

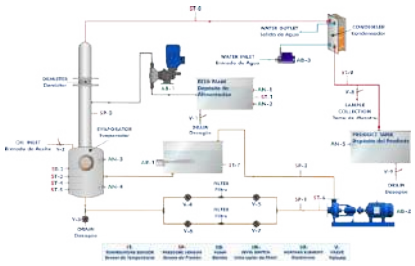
CGE/0.4/CTS. Computer Controlled and Touch Screen 0.4 l/h Carver-Greenfield Evaporator



Some **SOFTWARE RESULTS** screens

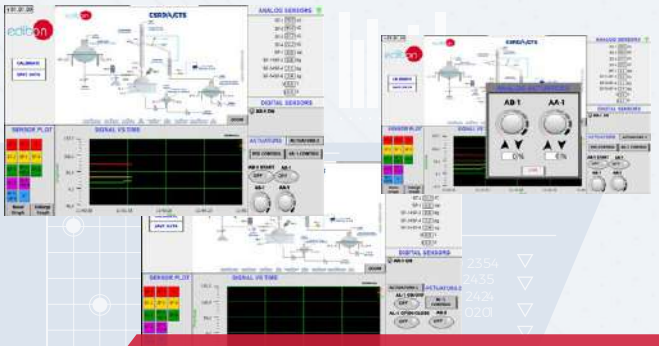
The Computer Controlled and Touch Screen 0.4 l/h ***Carver-Greenfield Evaporator***, "CGE/0.4/CTS", is able to show, for further investigation and study, the removal of dissolved solids from a liquid stream composed of Gamma-Valerolactone (GVL) and furfural.

CGE/12/CTS. Computer Controlled and Touch Screen 12 l/h Carver-Greenfield Evaporator



The Computer Controlled and Touch Screen 12 l/h ***Carver-Greenfield Evaporator***, "CGE/12/CTS", is able to show, for further investigation and study, the removal of dissolved solids from a liquid stream composed of Gamma-Valerolactone (GVL) and furfural.

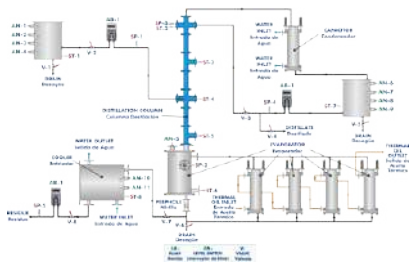
CSRD/4/CTS. Computer Controlled and Touch Screen 4 l/h Corrosive Solvent Recovery Distillation



Some **SOFTWARE RESULTS** screens

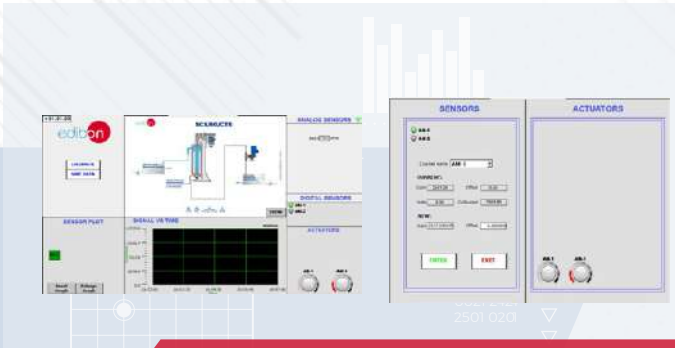
The Computer Controlled and Touch Screen 4 l/h ***Corrosive Solvent Recovery Distillation***, "CSRD/4/CTS", is able to show, for further investigation and study, the separation of water from a mixture composed of the organic solvent Gamma-Valerolactone (GVL) and different acids. In addition, the unit has the main elements made of borosilicate glass, which allows the study of corrosive processes.

CSRD/12/CTS. Computer Controlled and Touch Screen 12 l/h Corrosive Solvent Recovery Distillation



The Computer Controlled and Touch Screen 12 l/h ***Corrosive Solvent Recovery Distillation***, "CSRD/12/CTS", is able to show, for further investigation and study, the separation of water from a mixture composed of the organic solvent Gamma-Valerolactone (GVL) and different acids. In addition, the equipment has the main elements made of PTFE/PFA-coated carbon steel, graphite and PVDF, which allows the study of corrosive processes.

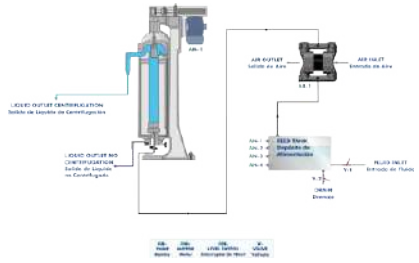
SCS/60/CTS. Computer Controlled and Touch Screen 60 l Semicontinuous Centrifugal Separator



Some **SOFTWARE RESULTS** screens

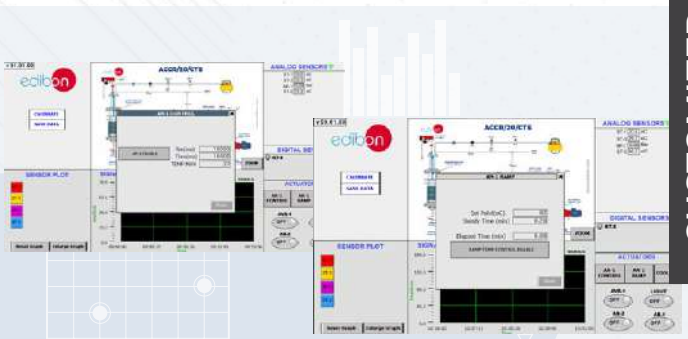
The Computer Controlled and Touch Screen 60 l Semicontinuous ***Centrifugal Separator***, "SCS/60/CTS", is able to show, for further research and study, the obtaining of lignin from lignocellulosic biomass.

SCS/1000/CTS. Computer Controlled and Touch Screen 1000 l Semicontinuous Centrifugal Separator



The Computer Controlled and Touch Screen 1000 l Semicontinuous ***Centrifugal Separator***, "SCS/1000/CTS", is able to show, for further research and study, the obtaining of lignin from lignocellulosic biomass.

ACCR/20/CTS. Computer Controlled and Touch Screen 20 l Anti-Corrosive Circulation Reactor



Some **SOFTWARE RESULTS** screens

The Computer Controlled and Touch Screen 20 l ***Anti-Corrosive Circulation Reactor***, "ACCR/20/CTS", is able to show, for further research and study, the fractionation of biomass into its three components of interest: high quality cellulose, hemicellulose and lignin, by using an organic solvent, Gamma-Valerolactone (GVL).

ACCR/250/CTS. Computer Controlled and Touch Screen 250 l Anti-Corrosive Circulation Reactor

The Computer Controlled and Touch Screen 250 l ***Anti-Corrosive Circulation Reactor***, "ACCR/250/CTS", is able to show, for further research and study, the fractionation of biomass into its three components of interest: high quality cellulose, hemicellulose and lignin, through the use of an organic solvent, called Gamma-Valerolactone (GVL). In addition, the unit has the main elements made of PTFE/PFA and coated with ECTFE (Halar) or Niflon, which allows the study of highly corrosive processes.

PILOT PLANTS FOR DAIRY PRODUCTS

LE00/PM. Pilot Plant for the Production of Pasteurized Milk

Fresh Milk

DMH/CTS
Computer Controlled and Touch Screen Milk Homogenizer

PADC
Computer Controlled Teaching Autonomous Pasteurization Unit

TFDC
Computer Controlled Teaching Frigorific Tank

Milk

EDLC
Computer Controlled Liquid Packaging Teaching Unit

With the Pilot Plant for the ***Production of Pasteurized Milk***, "LE00/PM", designed by EDIBON, we cover the first phase of fresh milk treatment to obtain pasteurized milk.

LE00/Y. Pilot Plant for the Production of Yogurt

Milk

VPMC
Computer Controlled Multipurpose Processing Vessel

IYDC
Computer Controlled Teaching Yogurt Incubator

Yogurt

With the Pilot Plant for the ***Production of Yogurt***, "LE00/Y", designed by EDIBON, from pasteurized milk, we obtain and make the yogurt manufacturing process.

LE00/MP. Pilot Plant for the Production of Milk Powder

Milk

EPAC
Computer Controlled Rising Film Evaporator

TGV
Steam Generator (3 kW)

SSPC
Computer Controlled Spray Drier

Powdered Milk

With the Pilot Plant for the ***Production of Milk Powder***, "LE00/MP", designed by EDIBON, from pasteurized milk, powdered milk is obtained by dehydration.

LE00/CC. Pilot Plant for the Production of Cheese and Cottage

With the Pilot Plant for the ***Production of Cheese and Cottage***, "LE00/CC", designed by EDIBON, we will obtain cottage cheese and cheese from pasteurized milk.

LE00/CBI. Pilot Plant for the Production of Cream, Butter and Ice Cream

With the Pilot Plant for the ***Production of Cream, Butter and Ice Cream***, "LE00/CBI", designed by EDIBON, we will obtain skimmed milk, cream, butter and ice cream.

PILOT PLANTS FOR MEAT

CA00/CUPS. Pilot Plant for the Production of Cured Pieces and Sausages

With the Pilot Plant for the ***Production of Cured Products and Sausages***, "CA00/CUPS", designed by EDIBON, we are able to obtain cured products from untreated meat.

CA00/COPS. Pilot Plant for the Production of Cooked Pieces and Sausages

BIM
Manual Brine Injection Machine

MDV/CTS
Computer Controlled and Touch Screen Maceration Drum with Vacuum System

FCMA/CTS
Computer Controlled and Touch Screen Fine Cutting Machine

VF/CTS
Computer Controlled and Touch Screen Vacuum Filler

PVSS
Pneumatic Vacuum Sausage Stapler

CK/CTS
Computer Controlled and Touch Screen Cooking Kettle

FSF/CTS
Computer Controlled and Touch Screen Forced Air and Steam Furnace

Cooked Pieces and Sausages

With the Pilot Plant for the ***Production of Cooked Pieces and Sausages***, "CA00/COPS", designed by EDIBON, we are able to obtain cooked products from untreated meat.

CA00/PM. Pilot Plant for the Production of Precooked Meat Products

HK/CTS
Computer Controlled and Touch Screen Hot Kneeder

MM/CTS
Computer Controlled and Touch Screen Meat Mincer

BC/CTS
Computer Controlled and Touch Screen Blast Chiller

HM/CTS
Computer Controlled and Touch Screen Hamburger Maker

CBB/CTS
Computer Controlled and Touch Screen Compact Batter Breading Machine

FEP/CTS
Computer Controlled and Touch Screen Fryer for Elaborate Products

THS
Tray Heat Sealer

TIGI/CTS
Computer Controlled and Touch Screen Thermosealing Machine with Inert Gas Injection

Precooked Meat Products

With the Pilot Plant for the ***Production of Precooked Meat Products***, "CA00/PM", designed by EDIBON, it is possible to study and research in the elaboration of precooked food from meat products, mainly meatballs and croquettes.

PILOT PLANTS FOR CEREALS

CE00/MF. Pilot Plant for Milling and Flour Production

Cereals

GM/CTS
Computer Controlled and Touch Screen Grain Milling Machine

FT/CTS
Computer Controlled and Touch Screen Pneumatic Transport System

FS/CTS
Computer Controlled and Touch Screen Industrial Sifter

Flour

With the Pilot Plant for ***Milling and Flour Production***, "CE00/MF", designed by EDIBON, we cover the first phase of cereals treatment to produce flour.

CE00/P. Pilot Plant for the Production of Pasta

Flour

PEK/CTS
Computer Controlled and Touch Screen Extruder and Kneader

SPD/CTS
Computer Controlled and Touch Screen Static Drying Unit

Pasta

With the Pilot Plant for the ***Production of Pasta***, "CE00/P", designed by EDIBON, we cover the complete pasta production process.

CE00/B. Pilot Plant for the Production of Bread

Flour

AWD/CTS
Computer Controlled and Touch Screen Automatic Water Dosing Device

DK/CTS
Computer Controlled and Touch Screen Dough Kneader Unit

WCO
Water Cooler

DD/CTS
Computer Controlled and Touch Screen Dough Division Unit

BM
Baguette Maker Unit

CBO/CTS
Computer Controlled and Touch Screen Convection Bread Oven

Bread

With the Pilot Plant for the ***Production of Bread***, "CE00/B", designed by EDIBON, we cover the complete bread production process.

CE00/MA. Pilot Plant for Cereal Malting

Cereals

GCS/CTS
Computer Controlled and Touch Screen Grain Cleaning and Steeping Unit

GGER/CTS
Computer Controlled and Touch Screen Grain Germination Unit

GDT/CTS
Computer Controlled and Touch Screen Grain Drying and Toasting Unit

DCLM/CTS
Computer Controlled and Touch Screen Deculmer

SCH
Horizontal Screw Conveyor

RCB
Rising Conveyor Belt

Cereal Malting

The Pilot Plant for ***Cereal Malting***, "CE00/MA", **is a pilot scale plant that includes all the industrial stages for malt production.**

PILOT PLANTS FOR OILS

AS00. Computer Controlled and Touch Screen Pilot Plant for Seeds Oil

AC00. Computer Controlled and Touch Screen Pilot Plants for the Production of Oil

Olives

OWLR/CTS
Computer Controlled and Touch Screen Olive Washing Machine and Leaf Remover

PACC
Computer Controlled Continuous Cycle Oil Production Plant

OCPF/CTS
Computer Controlled and Touch Screen Oil Collector with Plate Filter

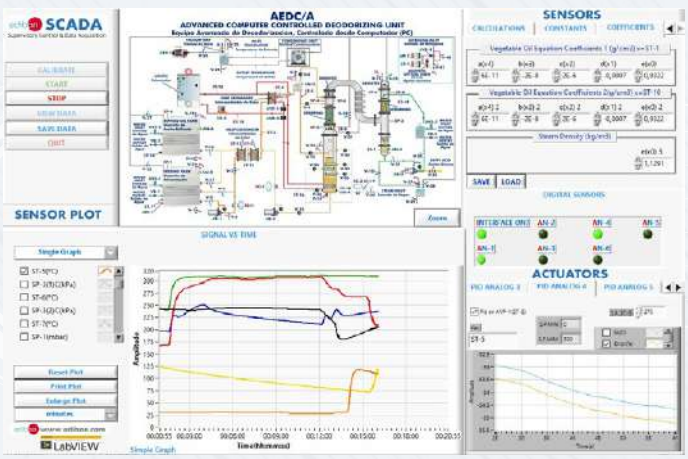
Extra Virgin Olive Oil

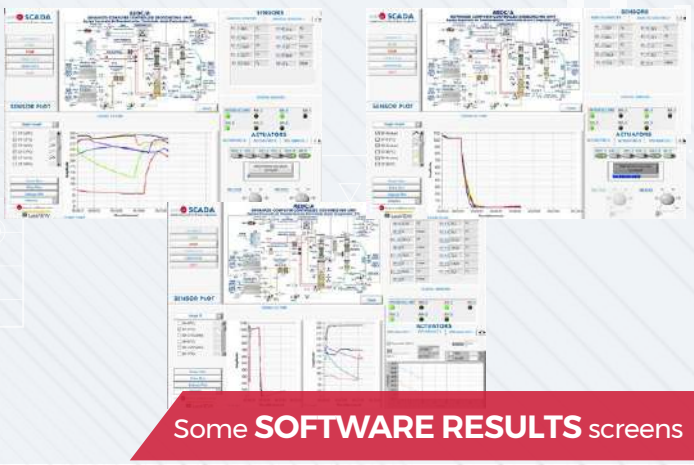
EDLC
Computer Controlled Liquid Packaging Teaching Unit

The Computer Controlled and Touch Screen Pilot Plants for the ***Production of Oil*** , "AC00", is a pilot plant able to carry out the main processes present in the elaboration of virgin olive oil.

AEDC/A. Advanced Computer Controlled Deodorizing Unit

The Advanced Computer Controlled ***Deodorizing*** Unit, "AEDC/A", designed by EDIBON is a unit that allows the study and research of the continuous deodorization operation capable of performing a vacuum and high temperature distillation with steam.

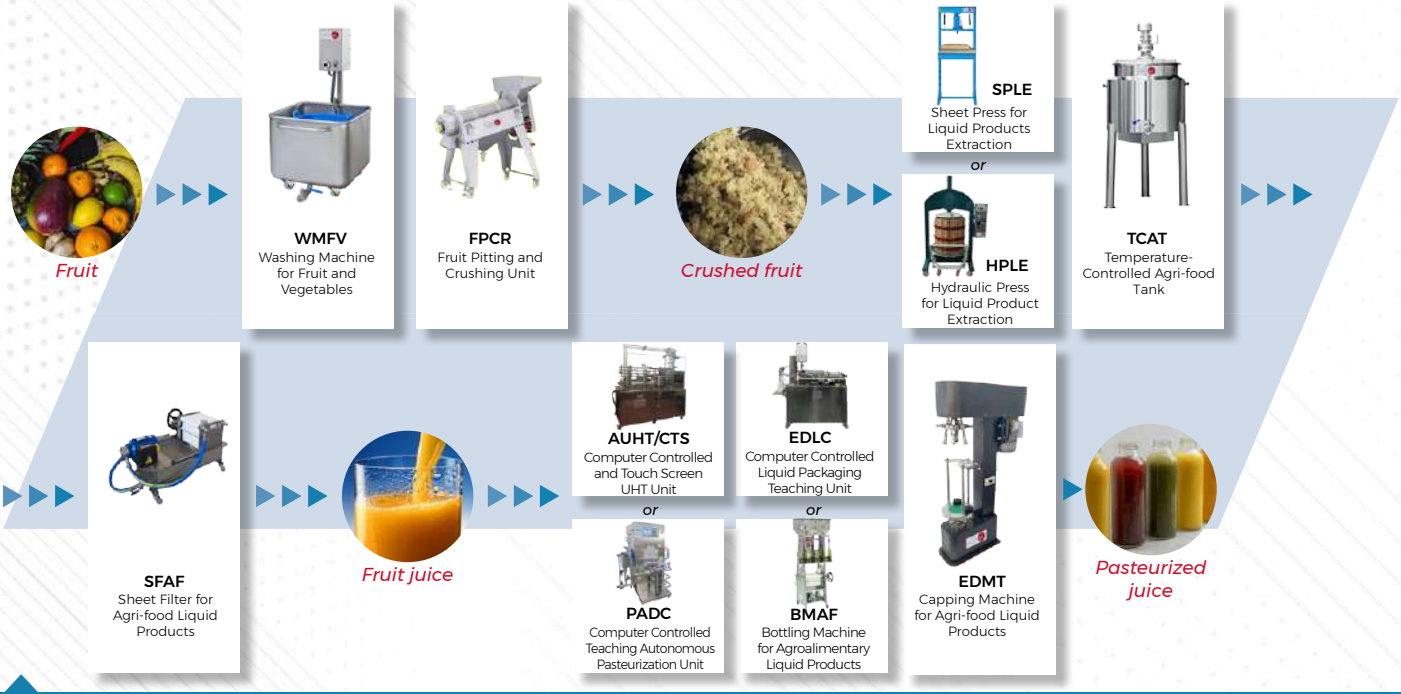




Some **SOFTWARE RESULTS** screens

PILOT PLANTS FOR FRUITS, VEGETABLES, AND LEGUMES

FR00/JP. Pilot Plant for Pasteurized Juice Production

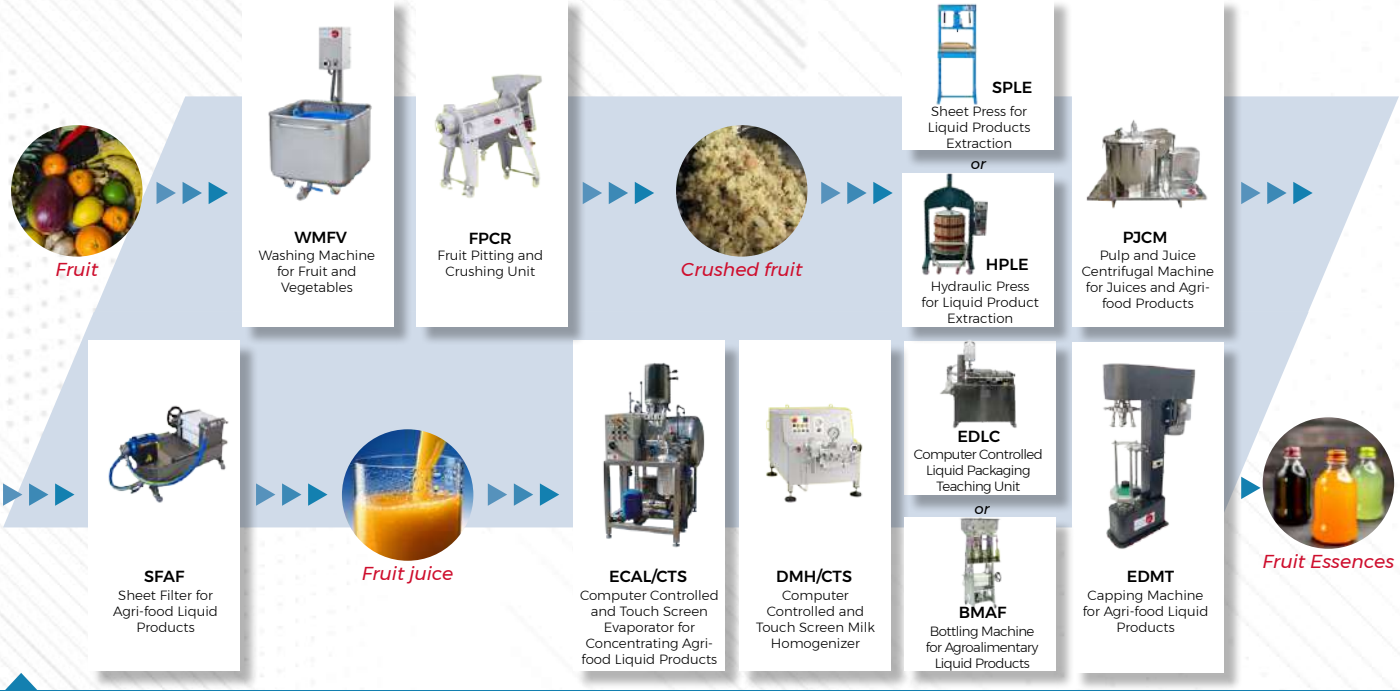


The Pilot Plant for ***Pasteurized Juice Production***, 'FR00/JP', is a pilot-scale pilot plant equipped to carry out all the industrial stages for pasteurized juice production.

FR00/PJ. Pilot Plant for Fruit Purees and Pulps Production

The Pilot Plant for ***Fruit Purees and Pulps Production***, "FR00/PJ", is a scale size pilot-plant equipped to carry out all the industrial stages for fruit puree or pulp production.

FR00/FE. Pilot Plant for Fruit Essences Production



The Pilot Plant for ***Fruit Essences Production***, "FR00/FE", is a scale size pilot-plant equipped to carry out all the industrial stages for all the industrial stages for fruit essence production.

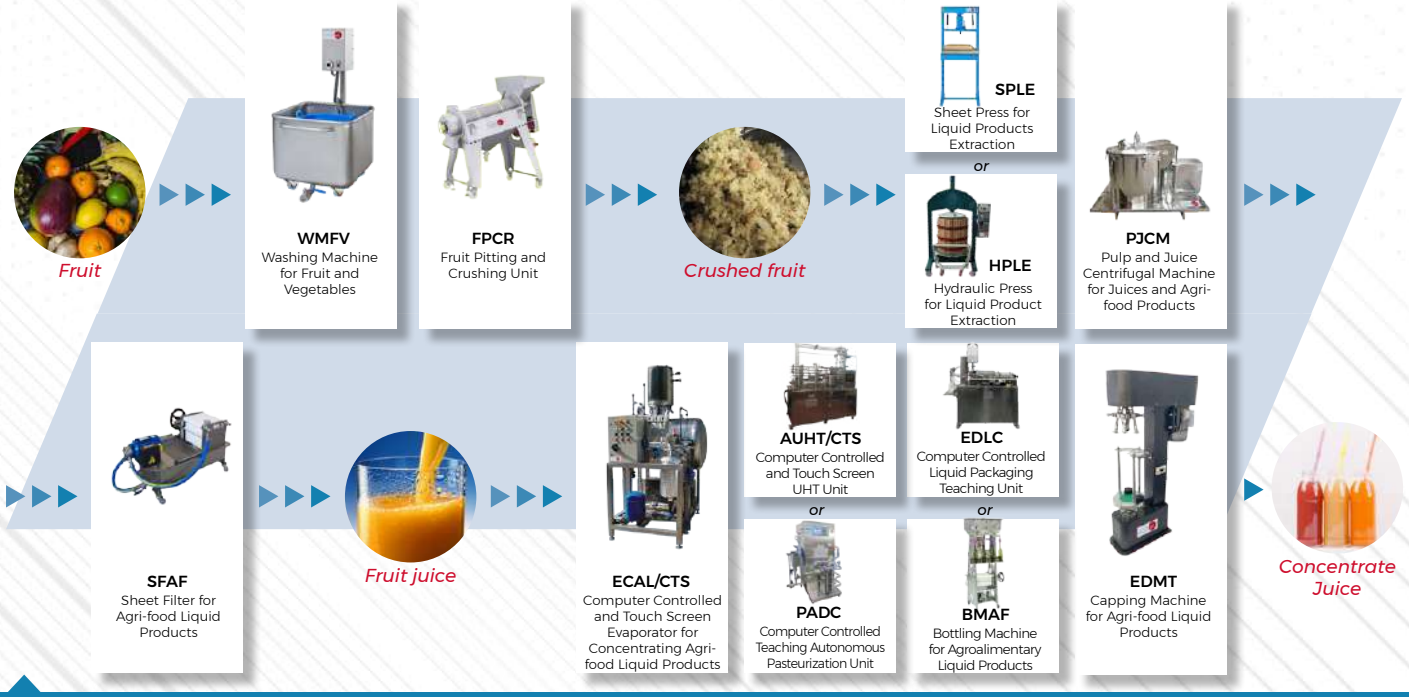
FR00/FS. Pilot Plant for Fruit Sauces or Dressings Production

The Pilot Plant for ***Fruit Sauces or Dressings Production***, "FR00/FS", is a scale size pilot-plant equipped to carry out all the industrial stages for fruit sauce or dressings production.

FR00/FJ. Pilot Plant for Fruit Jam Production

The Pilot Plant for ***Fruit Jam Production***, "FR00/FJ", is a pilot-scale pilot plant equipped to carry out all the industrial stages for jam production.

FR00/JC. Pilot Plant for Concentrated Juice Production



The Pilot Plant for ***Concentrated Juice Production***, "FR00/JC", is a pilot-scale pilot plant equipped to carry out all the industrial stages for concentrated juice production.

UV00. Computer Controlled and Touch Screen Pilot Plant for the Grape Treatment

Grapes

GD/CTS
Computer Controlled and Touch Screen Grape Destemming Unit

HGP/CTS
Computer Controlled and Touch Screen Hydraulic Grape Press

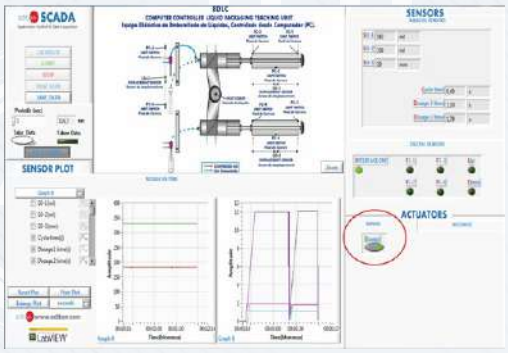
TMVF
Two Tanks for Maceration, Vatting and Fermentation of Wine

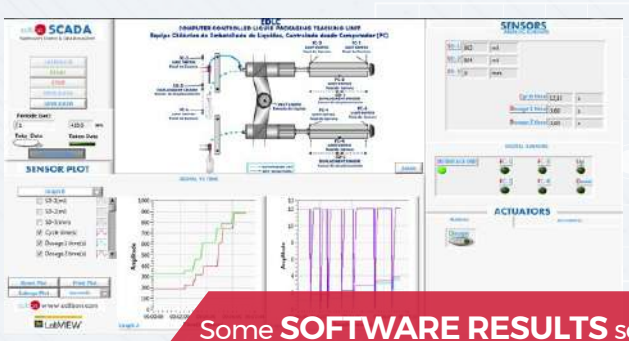
TERA
Refrigeration or Heating Water Recirculation Unit

EDLC
Computer Controlled Liquid Packaging Teaching Unit

Wine

The Computer Controlled and Touch Screen Pilot Plant for the ***Grape Treatment***, "UV00", designed by EDIBON, is a pilot plant in which the main production processes related to grapes are carried out.





Some **SOFTWARE RESULTS** screens

CI00. Computer Controlled and Touch Screen Pilot Plant for Citrus Fruits

TO00. Computer Controlled and Touch Screen Pilot Plant for Tomatoes

VE00. Computer Controlled and Touch Screen Pilot Plant for Vegetables and Legumes

ENVIRONMENT

EDIBON-MOF4AIR. Pilot Plant for CO_2 Adsorption Capture

HORIZON 2020

MOF4AIR

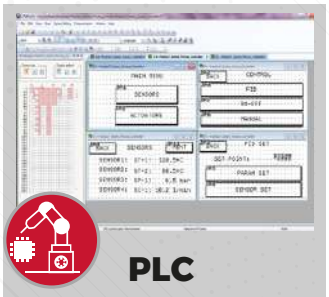
This project seeks a new solution to more efficiently ***capture carbon dioxide*** from power plants and industries. In order to address this significant challenge we currently face, the European Union launched the MOF4AIR research project to tackle the efficient capture of carbon dioxide in power plants and industries. At EDIBON, we have developed a solution that allows the testing of MOF-type materials for CO_2 capture in industrial environments.

OUR TECHNOLOGY

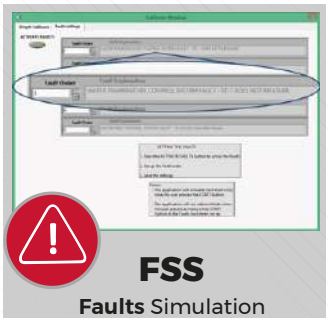
EXPANSIONS

In addition, all EDIBON teaching and research units **can be expanded with our expansions** at any time and **knowledge can be increased**.

Industrial expansions

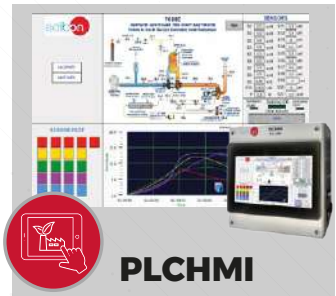


PLC
PLC Industrial Process Control



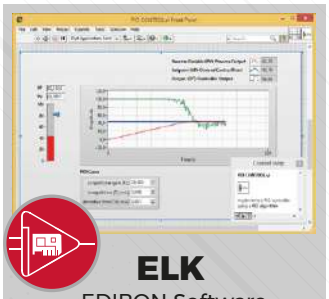
FSS
Faults Simulation System

ECR
EDIBON Industrial Modular System with **NI CompactRIO**

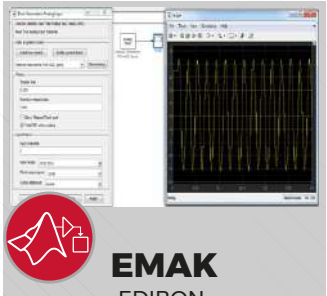


PLCHMI
IIoT local/remote Control and Monitoring with **HMI**

Advanced Research expansions



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



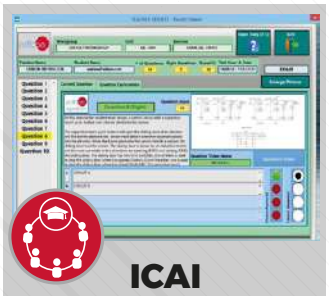
EMAK
EDIBON **Matlab** Kit

Multipost expansions

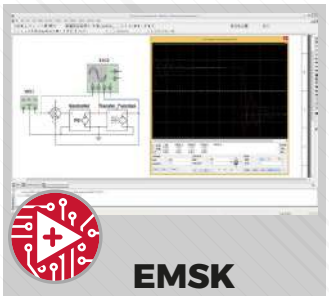
ESN
EDIBON **Scada-Net**

ECL
EDIBON **Cloud Learning**

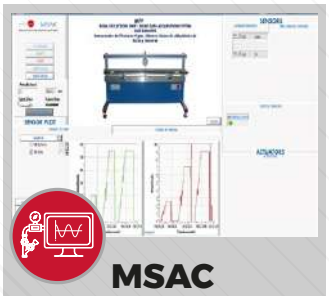
Pedagogical expansions



ICAI
Interactive Computer **Aided Instruction** Software



EMSK
EDIBON Development KIT for **Circuits Simulation**, Powered by NI LabVIEW™



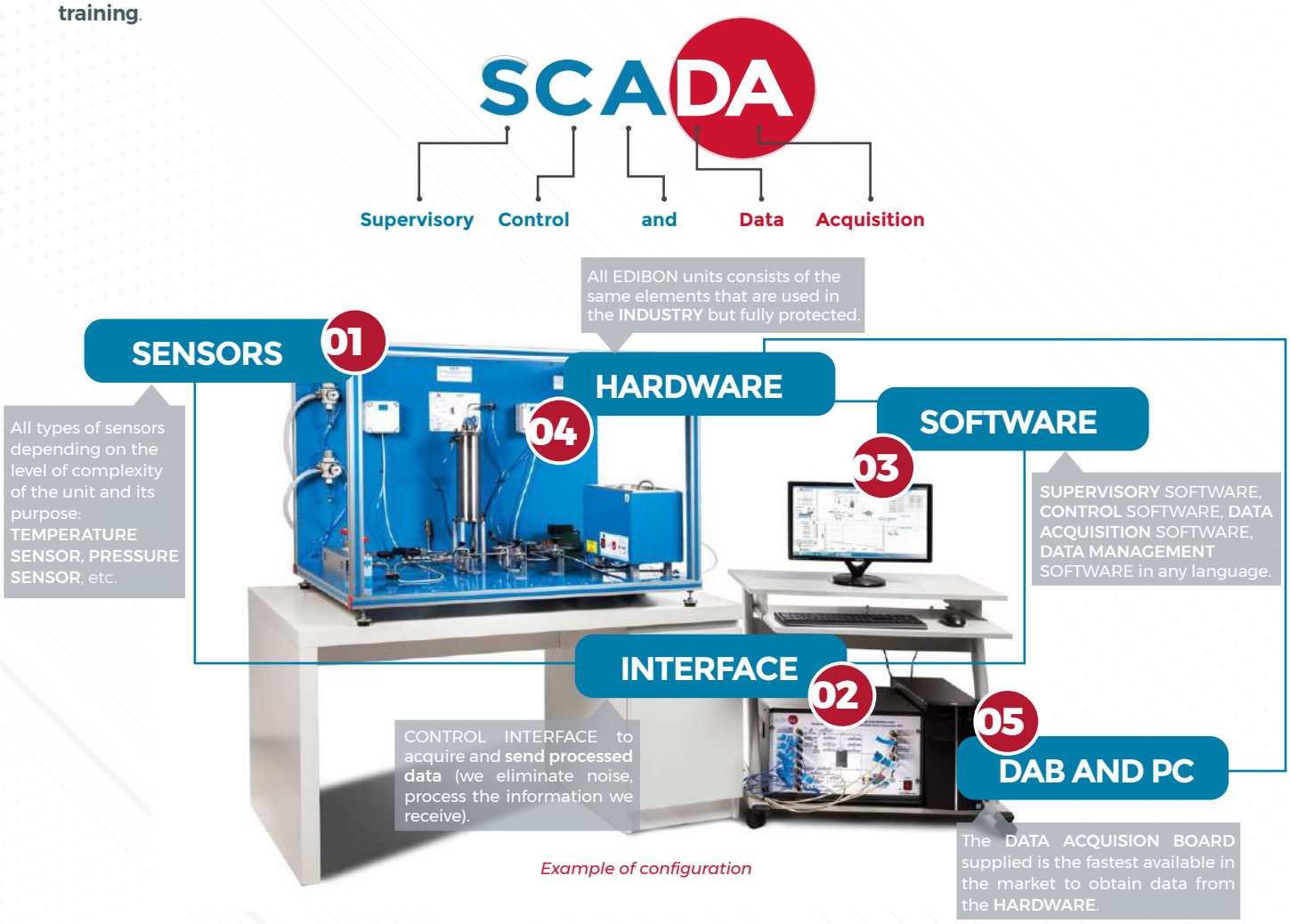
MSAC
Modular System for **Acquisition and Control**

ARISE
Augmented Reality Instructional System by EDIBON

See more information: *www.edibon.com/en/content/expansions*

KNOW-HOW

The basis of **EDIBON technology** is our "**SCADA**" system. This system can always be used in any part of the process whenever necessary.
It is a very widespread system in the industry and we are the only company in the world that has introduced it in our training and research units, offering thus **multiple advantages** to users.
Thanks to this computer-controlled technology, with our SCADA system you can **save time and increase efficiency during training**.



Example of configuration

See more information: *www.edibon.com/en/content/know-how*

R + D + i. Research + Development + Innovation

To achieve excellence in education, with advanced sustainable solutions and at an efficient cost.

100%
OWN **DESIGN**
CONTINUOUS **DEVELOPMENT**

100%
OWN **MANUFACTURING**
MORE THAN **16.000 DIFFERENT UNITS**

100%
OWN **QUALITY CONTROL**
SPECIALIZED **ENGINEERS**

See more information: *www.edibon.com/en/content/rd*

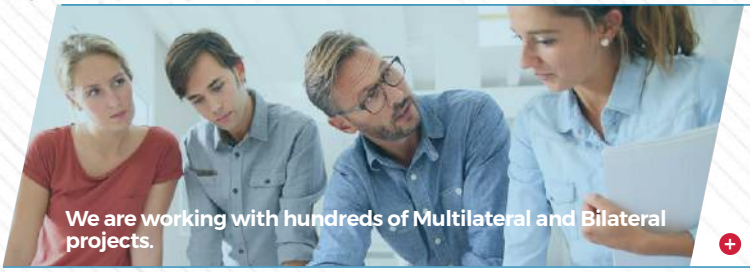
LINES OF BUSINESS

DAY BY DAY

DAY BY DAY (D/D) Business when all main money resources normally go to a "country box" and/or to country government (MOF), who decides the money distribution to all ministries in the country.

Ask us for further references.

PROJECTS

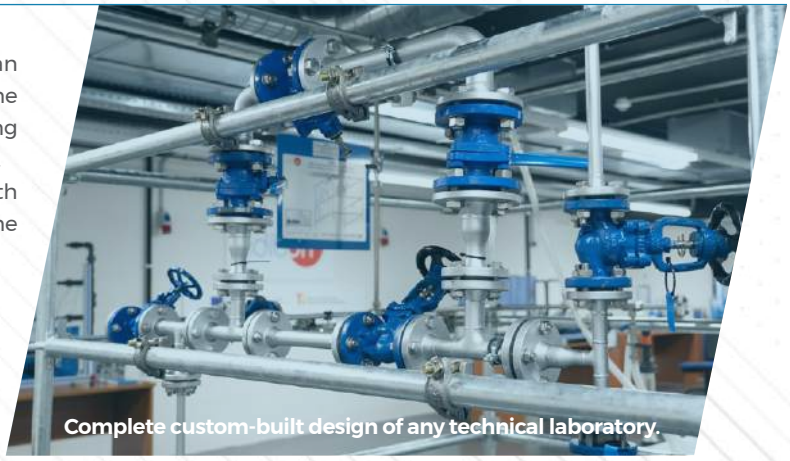


The donor and the country receiving the aid agree to finance a National Project or a particular project for a particular end customer (executing agency).
In case of projects, the end customer has money from the donor for the particular project.

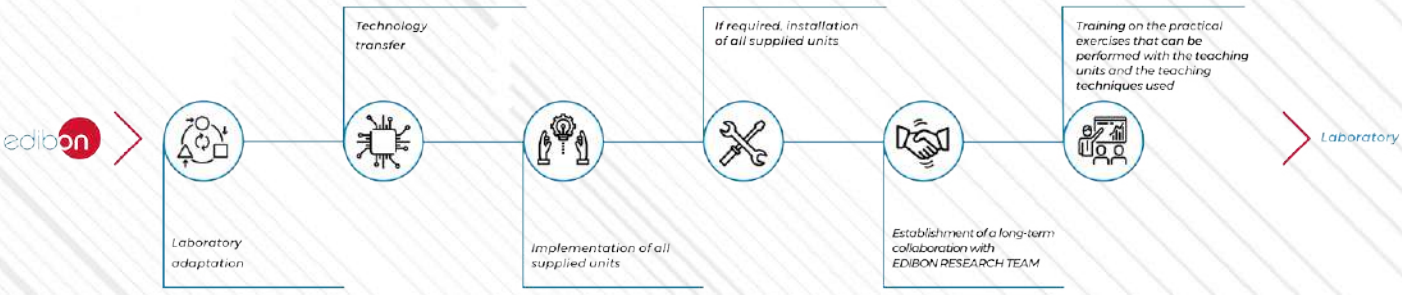
Would you like to know our experience with projects?

COMPLETE LABORATORIES

EDIBON experience technology can create an EFFICIENT LABORATORY, you can improve the performance of your students and the understanding of all theoretical concepts in a simple and fast way.
Having a well-designed laboratory, equipped with the most advanced technology available on the market and designed by EDIBON, will:



How is the
PROCESS
according to your **NEEDS**?



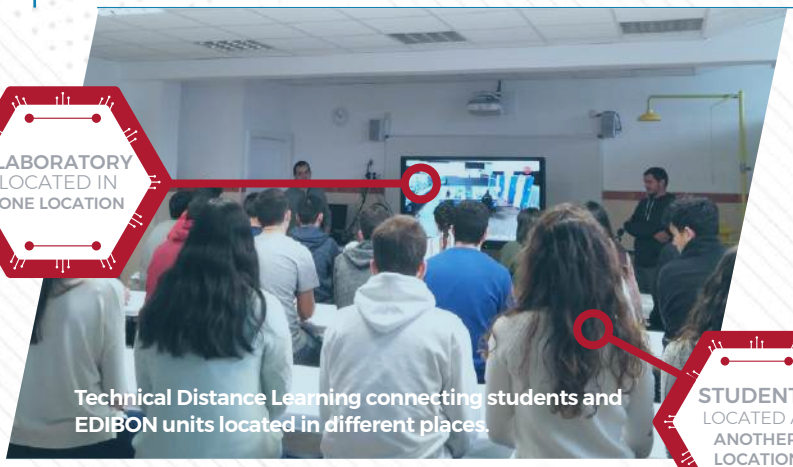
More than 2000 complete laboratories installed worldwide.

TECHNICAL EDUCATION TURN-KEY PROJECTS (TKP)

A TKP is a custom made project design, including financing, designed for one or more laboratories in all types of Technical Education Institutions, at Higher Education, Technical Education, Vocational Training, even Secondary Education.
The project includes: supply, installation, commissioning, training and after sales service.

Ask us about financing possibilities in your country.

TECHNICAL DISTANCE LEARNING (ECL)



In the case of Technical Distance Learning, we have designed our own system: EDIBON Cloud Learning (ECL).
EDIBON Cloud Learning is a cloud platform to help new generations to access the latest technology during the learning process via the Internet.
Technical Distance Learning enables students in any city in the world to run the EDIBON units located in Madrid and perform all the practical exercises.

EDIBON Cloud Learning is divided in two platforms:

USERS ONLINE PLATFORM

ADMINISTRATORS have full control over their laboratories thanks to the powerful class-administrator tool.

USERS can learn interactively in a flexible environment as if they were in the laboratory, accessing through the remote app for working with EDIBON units.
Several users can work with one unit or one user with several units.

REMOTE APP PLATFORM

Users can control EDIBON units & EDIBON SCADA software as if the were in the laboratory.

Moodle platform for control of teaching equipment and management of students and teachers.

CUSTOM-MADE UNITS AND PILOT PLANTS

Due to our 100% **own design** and our strong own **R+D+i department** we are able to do a full new design under special needs.

BENEFITS:

- Enables researchers to remove fatty acids from oil.

AEDC/A. *Advanced Computer Controlled Deodorizing Unit.* [SPAIN]

CSIC
Consejo Superior de Investigaciones Científicas

3 m.
5 m.

MOF4AIR. *Pilot Plant for CO_2 Adsorption Capture.* [NORWAY, TURKEY and FRANCE]

2 m.
13 m.

MOF4AIR will demonstrate optimized absorbents with fine-tuned CO_2 adsoption process.

BENEFITS:

- 95 % reduction in CO_2 emissions from power plants and carbon-intensive industries.
- 40 % reduction in greenhouse gas emissions.
- Fast transition to a low carbon economy.

CE00/MA. *Pilot Plant for Cereal Malting.* [IRELAND]

eagasc
Agriculture and Food Development Authority

3 m.
17 m.

BENEFITS:

- Researchers can reproduce the malting process in a huge variety of conditions.
- Local producers can now test their products.

SLE00. *Computer Controlled and Touch Screen Solid-Liquid Extraction Pilot Plant.* [DENMARK]

DTU Danmarks Tekniske Universitet

2 m.
3 m.

BENEFITS:

- Available to carry out several different solid-liquid extraction experiments.
- Researchers can now work at high pressure and temperature conditions [up to 80°C].
- Disolvents used: base, acid, organic.

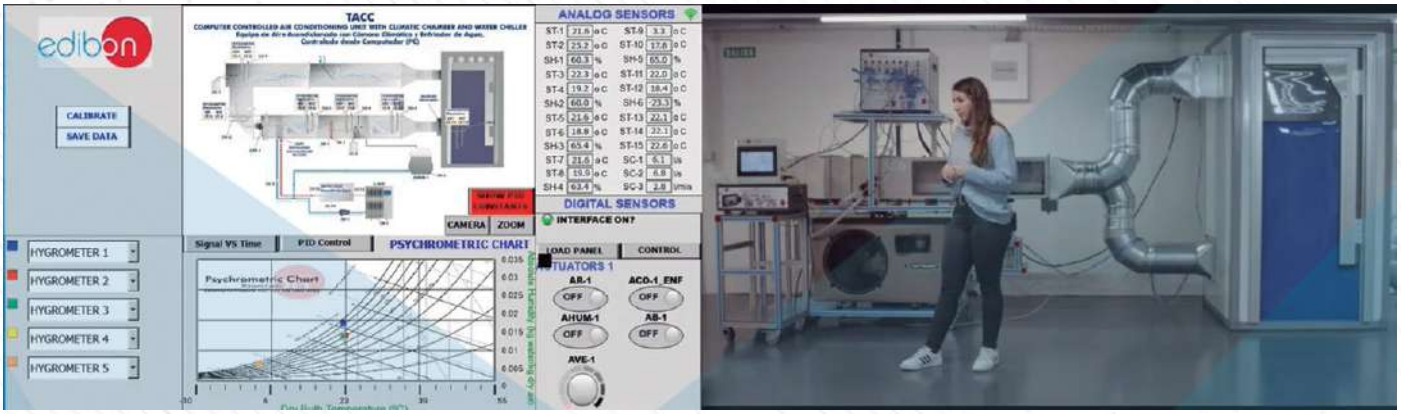
Ask us for further information.

TECHNICAL COURSES

The courses offered by EDIBON have been designed with the highest level of technical training offered worldwide.

LATEST TECHNOLOGY & HIGH LEVEL OF TRAINERS

With EDIBON units for Teachers, Students and Researchers.



Example of practices carried out during the technical courses (remote version)

Ask us for further information.

TECHNICAL EDUCATION CONSULTANCY

Assistance, Assessment and Support for Technical Projects.

Analysis of the customer needs. Analysis of the country possibilities. Design of the laboratories. Design of the laboratories content. Sustainability. IMPORTANT! EDIBON collaborates with consultants and consulting companies, offering LONG EXPERIENCE IN TECHNICAL TEACHING. Consultants and consulting companies are WELCOME.

Ask us for further information.

CONSTRUCTION OF BUILDINGS FOR TECHNICAL EDUCATION

Building preliminary project. Building complete project. LEED building. Financing. Construction.
Any interested person can check our experience with our own factory, a 30 000 m² building, one of the most modern in the world.

Design of buildings with LEED certification for engineering companies and Technical/Vocational Centers.

Ask us for further references.

See more information: *www.edibon.com/en/content/category/lines-of-business*

edibon

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more information **www.edibon.com**

REPRESENTANT:

• • •