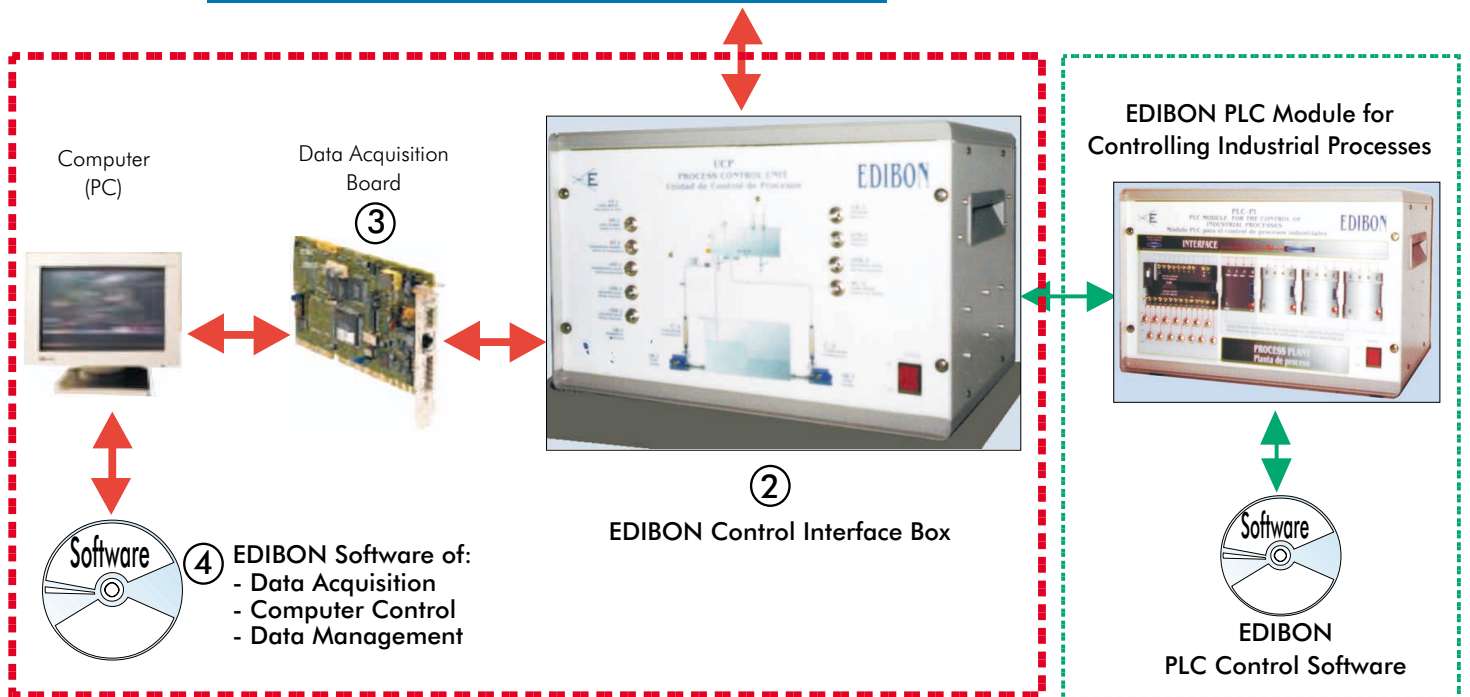


①



### SYSTEM CONFIGURATION

#### ITEMS INCLUDED IN THE SUPPLY:

- ①- UCP. Process Control Unit for the Study of pH, Flow, Temperature and Level.  
Computer Control System:
- ②- Control Interface Box.
- ③- Data Acquisition Board.
- ④- Software of: Data Acquisition+ Computer Control + Data Management.
- **Manuals** for: Practices and Exercises, Required Services, Assembly and Installation, Interface and Control Software, Starting-up, Safety, Maintenance, Calibration.
- Interconnection elements and **all accessories** included for normal working operation.

- Additional PLC Control System: (Optional)
- \* **PLC Module for the Control of Industrial Processes with all necessary accessories.**
- \* **PLC Control Software.**
- \* **Manual and necessary accessories.**

#### - Not included:

- \* **Computer (PC).**

## EXERCISES TO BE DONE WITH THIS EQUIPMENT

- 1.- Flow sensor calibration.
- 2.- Temperature sensor calibration.
- 3.- Level sensor calibration.
- 4.- pH sensor calibration.
- 5.- Flow control loops (Manual).
- 6.- Flow control loops (On/Off).
- 7.- Flow control loops (Proportional).
- 8.- Flow control loops (Proportional + Integral).
- 9.- Flow control loops (Proportional + Derivative).
- 10.- Flow control loops (Proportional + Derivative + Integral).
- 11.- Adjustment of the flow controller constants (Ziegler-Nichols).
- 12.- Adjustment of the flow controller constants (Reaction Curves).
- 13.- Level control loops (Manual).
- 14.- Level control loops (On/Off).
- 15.- Level control loops (Proportional).
- 16.- Level control loops (Proportional + Integral).
- 17.- Level control loops (Proportional + Derivative).
- 18.- Level control loops (Proportional + Derivative + Integral).
- 19.- Adjustment of the constants of a flow controller (Ziegler-Nichols).
- 20.- Adjustment of the constants of a flow controller (Reaction Curves).
- 21.- Temperature control loops (Manual).
- 22.- Temperature control loops (On/Off).
- 23.- Temperature control loops (Proportional).
- 24.- Temperature control loops (Proportional + Integral).
- 25.- Temperature control loops (Proportional + Derivative).
- 26.- Temperature control loops (Proportional + Derivative + Integral).
- 27.- Adjustment of the constant of a controller of temperature (Ziegler-Nichols).
- 28.- Adjustment of the constant of a controller of temperature (Reaction Curves).
- 29.- pH control loops (Manual).
- 30.- pH control loops (On/Off).
- 31.- pH control loops (Proportional).
- 32.- pH control loops (Proportional + Integral).
- 33.- pH control loops (Proportional + Derivative).
- 34.- pH control loops (Proportional + Derivative + Integral).
- 35.- Adjustment of the constant of a pH controller (Ziegler-Nichols).
- 36.- Adjustment of the constant of a pH controller (Reaction Curves).

## PROCESS DIAGRAM AND ELEMENTS ALLOCATION



## TECHNICAL SPECIFICATIONS SUMMARY

- Anodized aluminium structure and stainless steel metallic elements.
- Data Acquisition, Computer Control and Data Management Software. Flexible and open Control Software, compatible with any Windows operating system. PID analog and digital control. Sampling velocity up to 130.000 data per second. Calibration system for all sensors. Registration of the state of the alarms.
- Control Interface with front panel process diagram. Real Time PID control and with shield and filtered signals. Sensors with signals of 4-20 mA, 0-5 V, microvolts and Hz, etc, prepared for 0-10 V computer output. 16 analog + 16 digital inlets and 16 digital + 2 analog outlets. Up to 130 kHz sampling velocity. Proportional position and on/off Control, for actuators and control instruments.
  - Feed back control system.
  - Sensors connections in interface with different number of pins, for avoiding student mistakes.
- PLC box for Industrial Control Processes, with front panel process diagram including PLC Control Software.
- The unit contains the following elements: Double Lower Tank. Double Upper Tank. 2 circulation centrifugal pumps. Variable Area Flowmeters. Drainage Valves. Motorised Control Valve. Solenoid valves. Stirrer. Level Sensor. Temperature Sensor. pH Sensor. Flow Sensor. Etc.

**NOTE:** Complete technical specifications and detailed additional information available.

### REQUIRED SERVICES

- Electrical supply: 220-110 V / 50-60 Hz.
- Water supply.
- Computer (PC).

### DIMENSIONS & WEIGHTS

- Dimensions approx. :  
500 x 1000 x 1000 mm.
- Weight approx. : 30 kg.

\* Specifications subject to change without previous notice, due to continuous improvements of the product.

DISTRIBUTED BY:

**EDIBON, S.A.**  
**TEACHING EQUIPMENT**

C/ San José 11-13, 28921 ALCORCON (Madrid) SPAIN.  
Phone: 34-916198683 FAX: 34-916198647  
E-mail: edibon@edibon.com WEB site: www.edibon.com

Edition: ed07/02

