italtec
Technical Training Systems

Company with Quality Management System
Certified by DNV = ISO 9001/2015=

Automatic Control Technology
LEVEL CONTROL

IT.96ATC-LC

Automatic control technology is a wide generic term covering the operation and regulation of processes without continuous direct human intervention.
This laboratory has been designed to introduce the fundamentals.

The end user has the possibility to perform the control of variables such as temperature, light, level, flow and DC motor in different ways as PID, open loop, closed-loop, continuous and discontinuous. Its architecture is very easy and modular allowing the user to both learn the concepts in a simple way and to create new ones.

Beside this trainer we have realized a compact board that allows to study the processes and the controllers, all in one unit, complete with data acquisition and processing software for Windows.
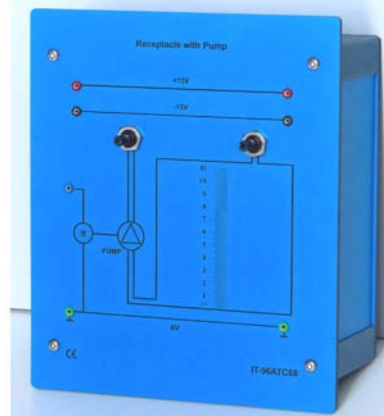
$C \epsilon$

This laboratory is designed for the study of temperature control application to allow the student a practical training, based on the performance of guided experiments. Industrial type components are educationally adapted by using a modular panel system to allows easy step by step assembling, from the simplest circuit to the most complex system. This trainer has a modular structure and it consists of didactic panels installed on a vertical frame. It is supplied with a theoretical and practical manual.

The modularity of this didactic system can give the students a direct and immediate approach to the topics, offering the opportunity to study various subjects, performing several experiments.

- Pump's features
- Measurement system's features
- Level process features
- Level control with adjuster P
- Level control with adjuster PI
- Level control with adjuster PID
- Level control with a 2 position controller
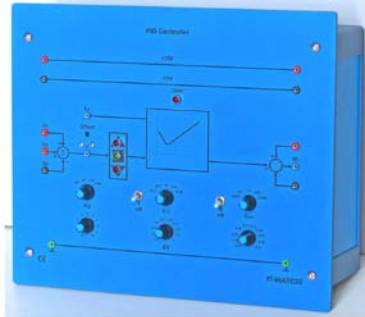

IT.96ATC-88 WATER TANK WITH PUMP
- Min. capacity: 1.5 lt
- Pump flow rate: 60lt/h at least

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IT.96ATC-22 PID CONTROLLER
This module can simulate a standard industrial controller for use as P, PI, PD or PID regulator in automatic closed-loop control systems.
Controller continuously adjustable parameters:
- **proportional gain Kp = 0 . . . 1000**
- **integral action time TI = 1 ms . . . 100 s**
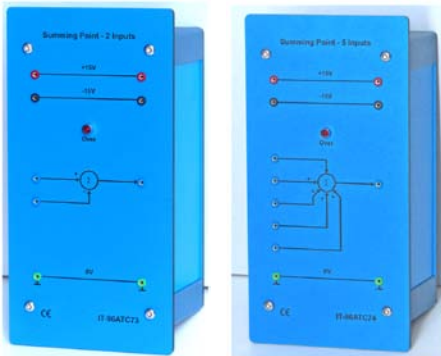- **differential action time TD = 0.2 ms . . . 20 s**

IT.96ATC-84 POWER AMPLIFIER
- Power supply: +15 V ; 0 V ; -15 V
- Signal voltage range: -10V, ..., +10V
- Output voltage:
  - -10 V .... +10 V to ground
  - 0 .... ±20 V symmetrically
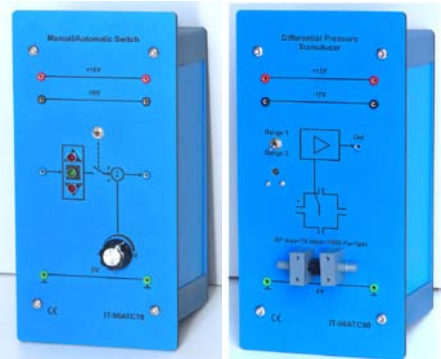- Max. output power: 30 W

IT.96ATC2S Single Pole Switch
- Plug-in element, normally open, switch load 2A, 250V.

IT.96ATC-73 SUMMING POINT– 2 INPUTS

IT.96ATC-74 SUMMING POINT – 5 INPUTS
• Gain factor = 1

IT.96ATC-78 MANUAL/AUTOMATIC SWITCH

IT.96ATC-90 PRESSURE TRANSDUCER
• For level and flow measurement

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CE

IT.96ATC71
Integral-Action Element
Proportional action controller suitable for the closed loop continuous control systems.
Technical features
- Power supply: +15 V ; 0 V ; -15 V
- Signal voltage range: -10V, ..., +10V
- Coefficient of the integral action KI = 0.1 .... 100 s-1
- Three position switch coarse setting.
- Potentiometer fine setting.
- Integral action reset input.
- Switch for inclusion/exclusion of the integral action.
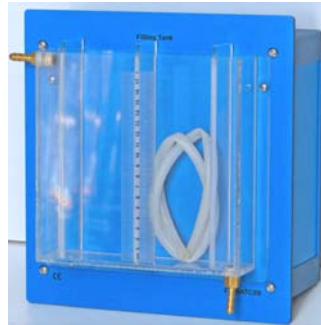- Led indicator of over-range.

IT.96ATC79
Two Position Controller
Two position controller for discontinuous closed loop control systems. It is provided with an input summing point to which the reference variable (non inverting input) and the controlled variable (inverting input) are connected. By means of two led the binary state of the controller, whose hysteresis can be changed, is visualized. The controller is provided with two binary outputs at different voltages.
- Power supply: +15 V ; 0 V ; -15 V
- Input summing point
- Signal voltage range: -10V, ..., +10V
- Output voltages: 0/+5 V ; 0/+10 V
- Adjustable hysteresis: 0 .... ± 2.5 V

IT.96ATC89 Filling tank
Used to demonstrate the characteristics of the controller system. Slide valves allow you to change the configuration of the controlled system. Includes plug-in devices for the sensors used to measure the level of the liquid.

- Tank capacity: approx. 1 l
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IT.96ATC33 True rms meter
For measuring the true rms of voltages and currents.
  Voltage:
    o   0 .. 1000V DC
    o   0 .. 1000VACpp/0 .. 750VACrms
  Current:
    o   0 .. 10 A
- • Continuous overload protection in all ranges

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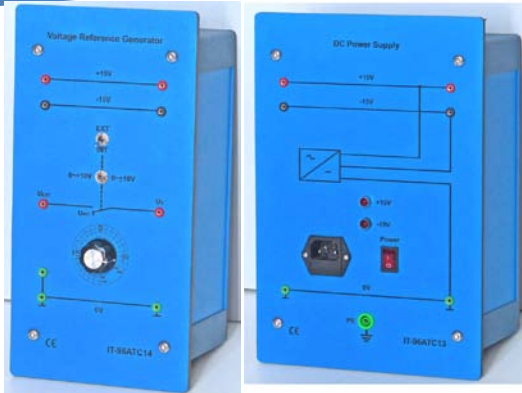
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IT.96ATC-14 VOLTAGE REFERENCE GENERATOR
- Output voltage: 0...+10 V AND -10 V ...+10 V
- Power supply: +15 V / 0 V / - 15V

IT.96ATC-13 DC POWER SUPPLY
- Output voltages: +15V / 0 V / - 15V
- Output current: 2-3 A

IT.96USB Data acquisition / control unit
Interface unit: used to interconnect real world signals
to a data acquisition system.
Technical features:
- Power supply from USB, < 100mA
- 2 relay outputs
- 2 analogue outputs, serial 8 bit D/A converter
- Output: -10/+10 V
- 8 analogue inputs, 12 bit A/D converter
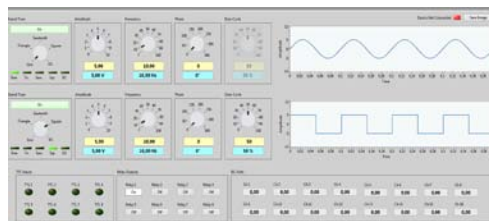- Input: -10/+10 V
- Max speed of conversion: 10 kHz

IT.96MSW Software
To generate the control signals and to acquire and visualize the signals and the wave forms to be analyzed.
- Input/Output Control window.
- Signal Generator window (continuous, square wave, ramp, triangular, sinusoidal, pulse).
- 3 trace Oscilloscope window with continuous, single and trigger control operation.
- 4 channel Chart Recorder window.
- Window with I/O controls for setting and visualizing the signals.

FUNCTION GENERATOR

4 Channel OSCILLOSCOPE