

IT.96ATC-FC

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.



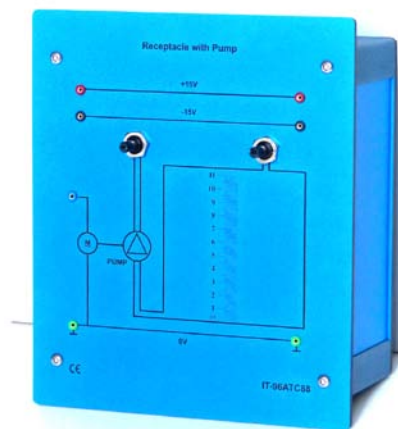
This laboratory is designed for the study of temperature control application to allow the student a practical training, based on the performance of guided experiments. Industrial type components are educationally adapted by using a modular panel system to allow easy step by step assembling, from the 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.

FLOW CONTROL



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.

- Measurement system's features
- Analysis of flow control features
- Flow control with adjuster P
- Flow control with adjuster PI
- Flow control with adjuster PID
- Flow control with a 2 position controller



IT.96ATC-88 WATER TANK WITH PUMP

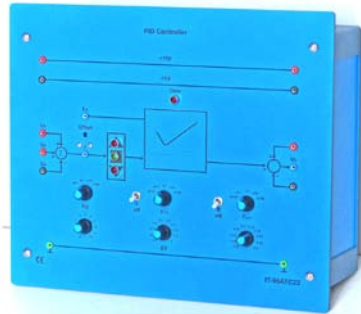
- Min. capacity: 1.5 lt
- Pump flow rate: 60lt/h at least
- Required supply : 12,7V (from +/- of amplifier)

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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 $K_p = 0 \dots 1000$
- integral action time $T_I = 1 \text{ ms} \dots 100 \text{ s}$
- differential action time $T_D = 0.2 \text{ ms} \dots 20 \text{ s}$



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

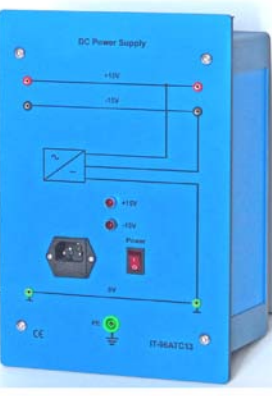


IT.96ATC-92 SOLENOID VALVES

- Normally open
- Two way and two position
- On/Off setup
- Adjusted with P, PI, PID controllers
- Automatic or manual adjustment

IT.96ATC-70 P CONTROLLER

- Proportional gain $K_p = 0 \dots 100$



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

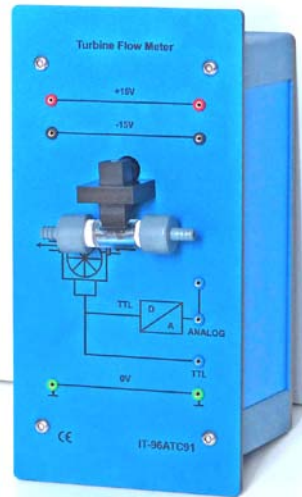
- Output voltages: +15V / 0 V / -15V
- Output current: 2-3 A

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IT.96ATC91

Turbine Flow Meter

It is used for measuring the flow according to the volumetric principle.

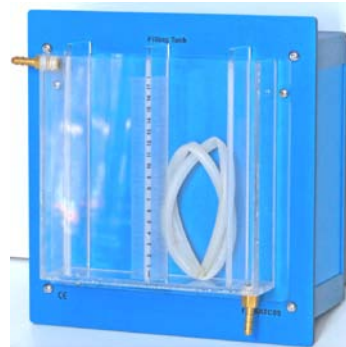
- Power supply: ± 15 V
- Measurement range: 10 ... 100 l/h
- Measurement temperature: 20°C
- Measurement medium: water

With 12,8V to the motor

- Output 10V=1l/min'
- TTL output 5V - Freq. 84Hz for 10V analog

With 7V to the motor

- Output 5V=0,5l/min'
- TTL output 5V - Freq. 42Hz for 5V analog



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



IT.96ATC25

Single Pole Switch

- Plug-in element, normally open, switch load 2A, 250V.



IT.96ATC33 True rms meter

For measuring the true rms of voltages and currents.

Voltage:

- 0 .. 1000V DC
- 0 .. 1000VACpp/0 .. 750VACrms

Current:

- 0 .. 10 A

- Continuous overload protection in all ranges

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IT.96USB Data acquisition / control unit
Interface unit: 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

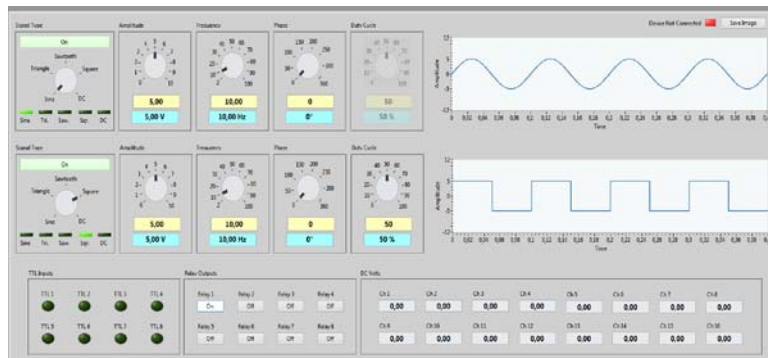


IT.96MSW Software

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

