

## LEVEL CONTROL UNIT



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### EDUCATIONAL APPLICATIONS

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- Study of a level control loop
- Identification of the elements: Sensors, controller, Actuator, Interfering element
- Configuration and control of the controller via interface
- PID regulation or All or Nothing
- Visualization of different signals (by supervision software, setpoint, measurement)
- Real-time curve plotting
- Optimization of the PID parameters of a control loop
- Reaction to disturbance

## Operating principle

The STL700 bench allows the study of level regulation. A pump supplies water to a transparent test tank. A pressure sensor measures the water level in the transparent tank. A digital PID controller receives the level information and must adjust the speed of the pump controlled by the drive to reach the set point.

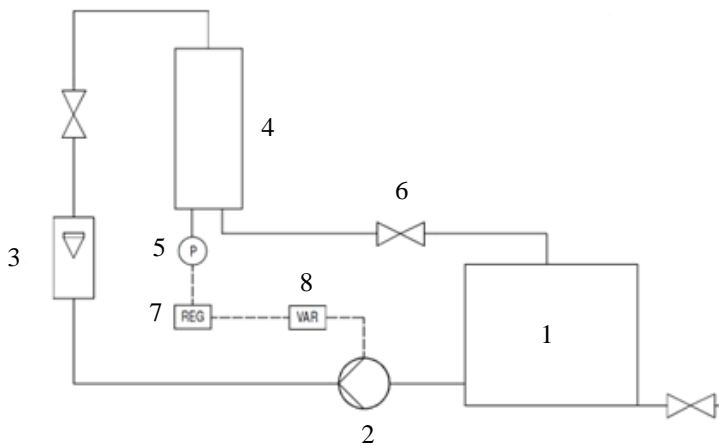
The unit is delivered complete, instrumented with technical and educational documentation in English as well as all the accessories necessary for proper operation (including the supervision software).

The robust design of this equipment makes it perfectly suited for school use.

Its anodized aluminum structure gives it great robustness as well as a great flexibility of integration into your premises. The manufacture of this equipment meets the European machine directive

## Illustrations

## Technical details



**1 HDPE tank with drain valve**  
40L capacity

**2 Three phase centrifugal pump**  
Maximum flow rate of 1,9 m<sup>3</sup>/h  
Maximum pressure of 38 mCE

**3 Float flowmeter in PVC**  
Linear scale 0-1600 L/h  
Direct reading by the position of the floater

**4 Transparent cylindrical tank of test level**  
Diameter 200mm  
Height 400mm

**5 Relative pressure sensor for level measurement**  
Piezo resistive sensor  
Measuring range from 0 to 100 mbars

**6 Perturbation valve**  
Ball valve

**7 Electronic controller**  
Possibility to regulate in PID or all or nothing. Input signal 4 / 20mA output signal 4/20mA. The regulator has an RS485 communication interface for its supervision.

**8 Speed variator** Schneider Electric

**9 Electrical box with general power disconnecter and 30mA differential circuit breaker**

## Services required

## Documentation

- Electricity: 230 VAC mono - 50 Hz - 16 A
- Water supply: 40 L
- Dimensions: (L x W x H mm) : 700 x 650 x 800
- Weight (Kg): 35

- User's manual
- Pedagogical manual
- Technical documentation of the components
- Lab exercises
- Certificate of conformity CE
- Hydraulic diagram
- Electrical diagram

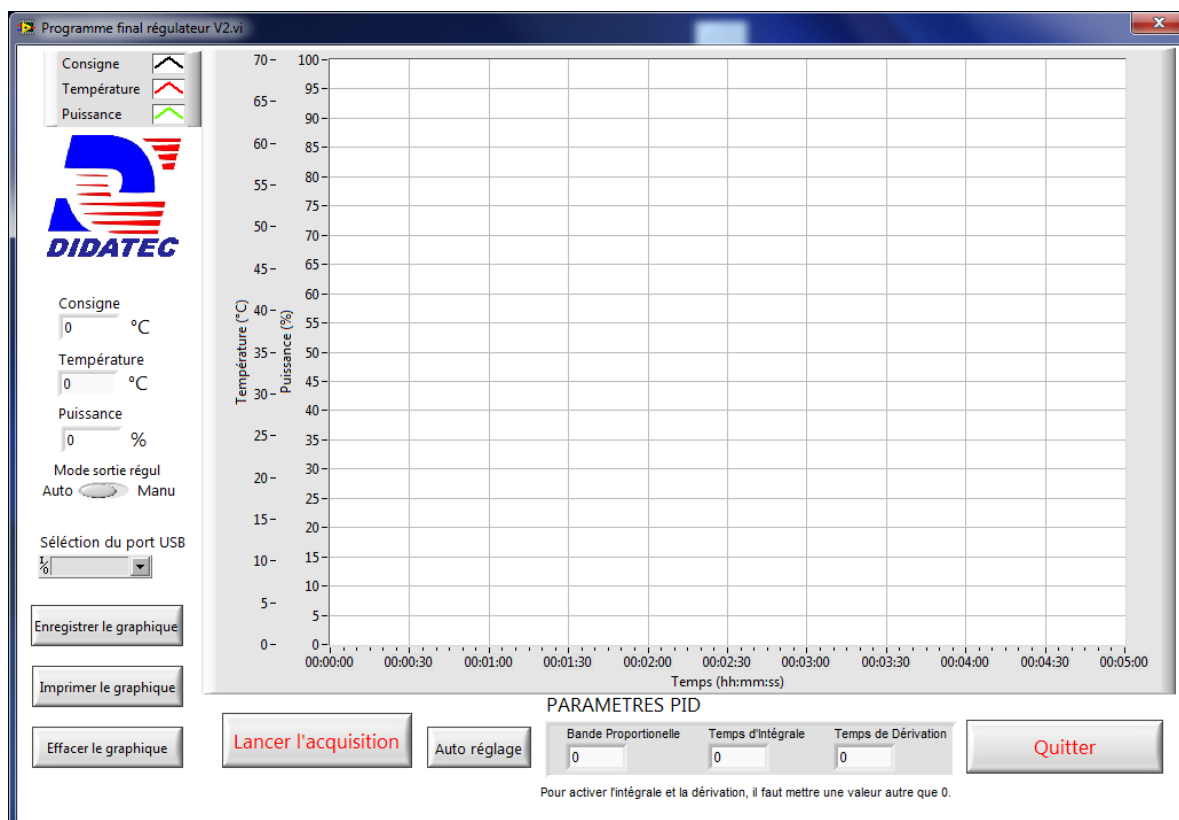
Note: If the equipment installation is operated by our staff, all supplies and exhaust connections required must stand at less than 2m from the machine

# STL700



## Supervision

The bench is supplied with an interface software running on Windows and developed under labview. It allows to modify the PID parameters and the setpoint, visualize the measurement and output power, auto launch of setting, and plot the curves in real time. The image below shows the interface:



DIDATEC– Zone d'activité du parc – 42490 FRAISSES- FRANCE  
Tél. +33(0)4.77.10.10.10 – Fax+33(0)4.77.61.56.49 – [www.didatec-technologie.com](http://www.didatec-technologie.com)  
email : [service\\_commercial@didatec-technologie.com](mailto:service_commercial@didatec-technologie.com)

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