



## PROCESS CONTROL TRAINER

The trainer is composed of:

- an educational board with a pressurized vessel and a set of sensors and actuators for level, pressure, temperature and flow;
- a control module, containing the interface circuits for the sensors and the actuators and the ON/OFF, proportional, integral and derivative control circuits (PID).

### TECHNICAL FEATURES

Pressurized vessel capacity: 5 litres approx.

Water tank capacity: 20 litres approx.

Temperature sensors:

- platinum thermo-resistance Pt 100
- bi-metallic direct reading thermometer

Level sensors:

- linear variable-differential transformer (LVDT)
- on-reed ON/OFF sensor

Flux sensors:

- flowmeter 8000 pulses/ litre
- flowmeter, direct reading

Pressure sensors:

- strain gauge
- manometer, direct reading

Recirculation pump: 6 litres/minute, 12 V, 1.5 A

Motor driven valve

4 manual valves

Water heating resistance: 48V, 200W

Safety valve set at 2.4 bar

Safety thermostat

Piping: brass

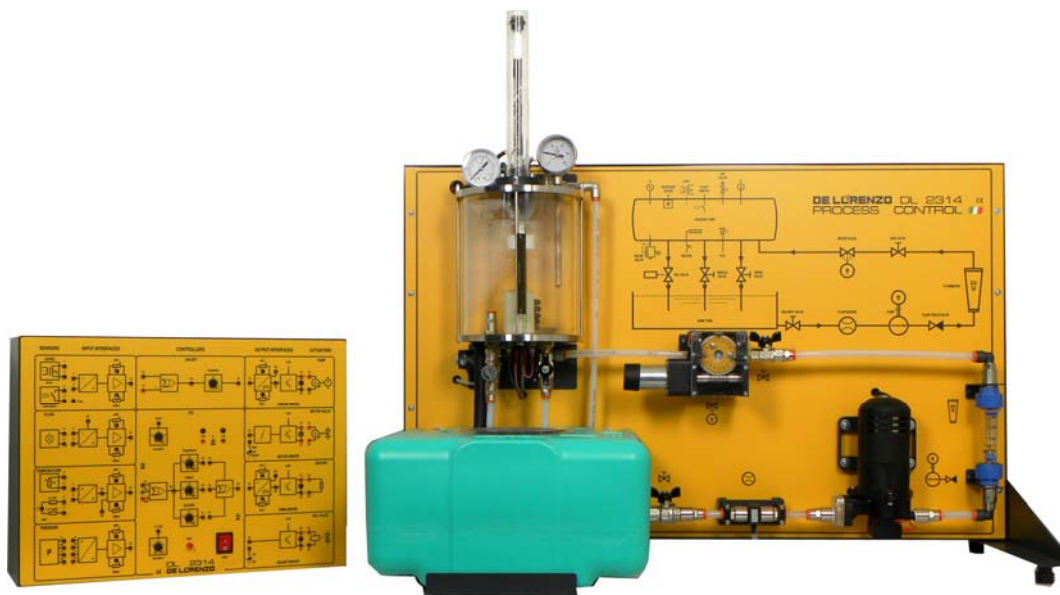
Power supply: single-phase from mains

**With this system, the student will be able to study the following:**

- Study of the level, flow, pressure and temperature sensors
- Study of the characteristics of the pump and of the motor pump
- Study of the characteristics of the static process and of the time constants
- ON-OFF, P, PI, PD and PID closed loop control of the level
- P, PI, PD and PID closed loop control of the flow
- ON-OFF, P, PI, PD and PID closed loop control of the temperature
- ON-OFF control of the level with the pressure sensor

**Optionally, it is possible to connect to the trainer:**

- a microprocessor based process controller of industrial type (DL 2314C)
- a process recorder (DL 2314R)
- a programmable logic controller (DL 2210B)
- a personal computer with suitable interface module and software (PC with DL 1893 and DL 2314SW)



**DL 2314**