AUTOMATION

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 sensor:
- Capacitive level sensor
- Detecting range: 0 to 180mm
- Signal output: 0 to 5V
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)