

E6.4.2
TECHNICAL PROCESSES WITH
INDUSTRIAL COMPONENTS

E6.4.2.5
Temperature in Water



Temperature in Water (E6.4.2.5)

| Cat. No. | Description | E6.4.2.5 |
|----------|--|----------|
| 38-002 | Temperature Process Control | 1 |
| 38-610 | Forced Air Cooler | 1* |
| 93-420 | ESPIAL Software Package | 1* |
| 38-001 | Level & Flow Process Control | 1* |
| | additionally required: 1 PC with Windows 7/8/10 | |

* additionally recommended

Temperature in Water

The Temperature Training System is a two loop system, using water as the process fluid which allows the study of the principles of process control using primary and secondary circuit temperatures as the process variables to be controlled. Both circuits pass through the heat exchanger and the secondary circuit contains a fan-assisted cooling radiator. Thermistor temperature sensors are located in the inlet and outlet streams of both primary and secondary sides of the heat exchanger and the outlet of the radiator. The primary flow is also monitored. The Trainer can be used with a cold mains water supply through the Auxiliary Temperature Control Pack 38-480, which is supplied as part of the system. This comprises a motorised control valve, a flow meter and a signal conditioning unit. Alternatively the Temperature Trainer can be connected to the Level & Flow Process Trainer, which then supplies the cold water circuit. This combination allows more complex control systems to be investigated.

Topics

- Temperature familiarisation & calibration
- Interface familiarisation & calibration
- Controller familiarisation & calibration
- Pulse Flow Transmitter
- On-Off Control
- Study of P, PI and PID control of temperature & flow
- etc.

Experiments are operated and evaluated with ESPIAL.
The equipment can require additional software modules.