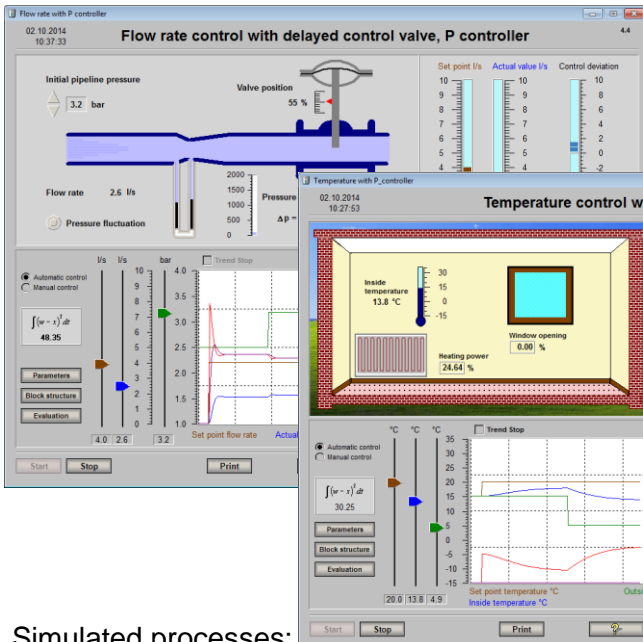


Practical Training on Control Engineering II

This program is a simulation application which can be used to practise and analyse the field of closed loop control engineering in vocational training.

By various processes and controlled systems one can examine interactively the performance of controlled systems and control loops with different controllers:

P, I, PI, PID, three-position controller

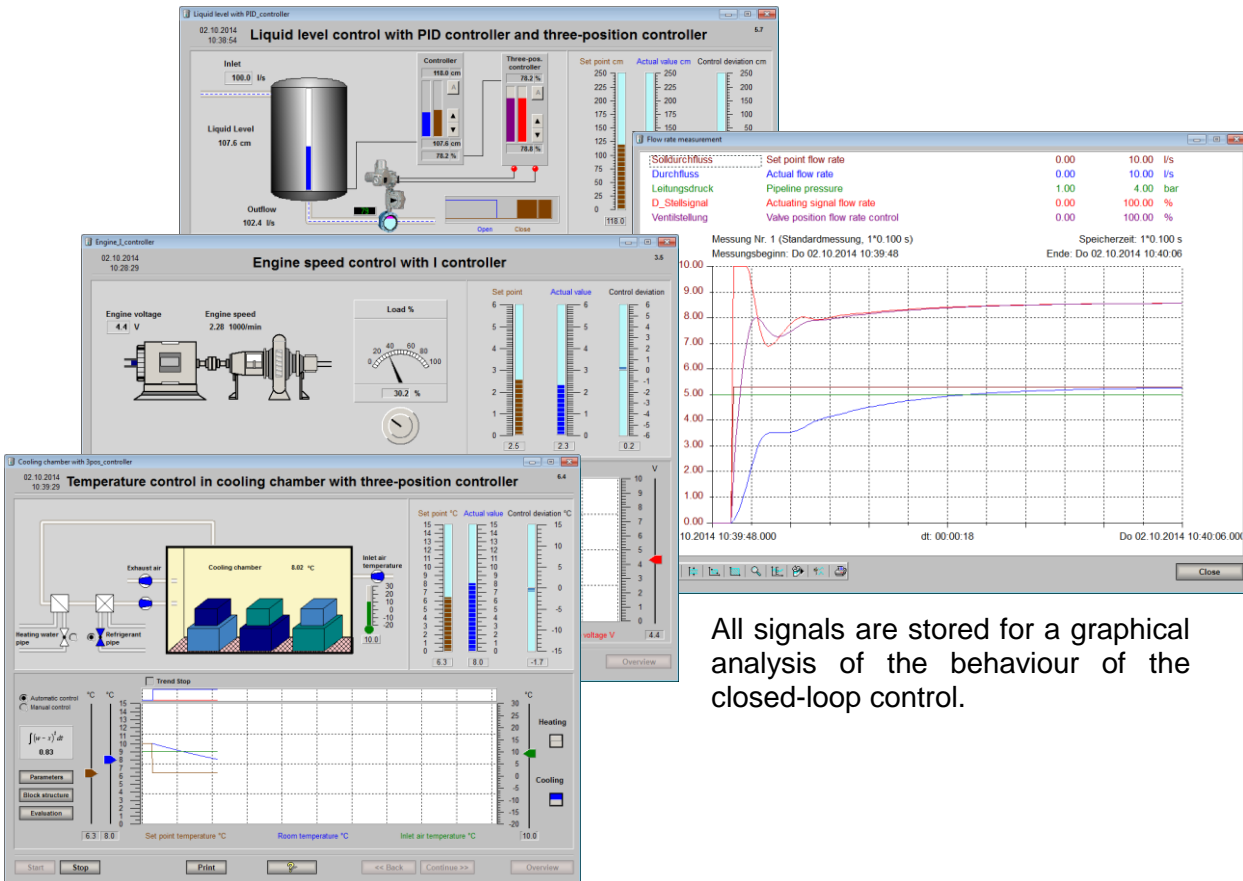


Practical Training on Control Engineering II

<p>1. Controller Behaviour</p> <ul style="list-style-type: none"> 1.1 P controller 1.2 I controller 1.3 PI controller 1.4 PID controller 1.5 Three-position controller 	<p>4. Flow Rate Control</p> <ul style="list-style-type: none"> 4.1 Uncontrolled system 4.2 Controlled system 4.3 Examine controlled system 4.4 Closed-loop control with P controller 4.5 Closed-loop control with I controller 4.6 Closed-loop control with PI controller 4.7 Closed-loop control with PID controller
<p>2. Room Temperature Control</p> <ul style="list-style-type: none"> 2.1 Uncontrolled system 2.2 Controlled system 2.3 Examine controlled system 2.4 Closed-loop control with P controller 2.5 Closed-loop control with I controller 2.6 Closed-loop control with PI controller 2.7 Closed-loop control with PID controller 	<p>5. Liquid Level Control</p> <ul style="list-style-type: none"> 5.1 Uncontrolled system 5.2 Controlled system 5.3 Examine controlled system 5.4 Closed-loop control with P controller 5.5 Closed-loop control with I controller 5.6 Closed-loop control with PI controller 5.7 Closed-loop control with PID controller 5.8 Closed-loop control with three position controller
<p>3. Engine Speed Control</p> <ul style="list-style-type: none"> 3.1 Uncontrolled system 3.2 Controlled system 3.3 Examine controlled system 3.4 Closed-loop control with P controller 3.5 Closed-loop control with I controller 3.6 Closed-loop control with PI controller 3.7 Closed-loop control with PID controller 	<p>6. Cooling Chamber Control</p> <ul style="list-style-type: none"> 6.1 Uncontrolled system 6.2 Controlled system 6.3 Examine controlled system 6.4 Closed-loop control with three-position controller

Simulated processes:

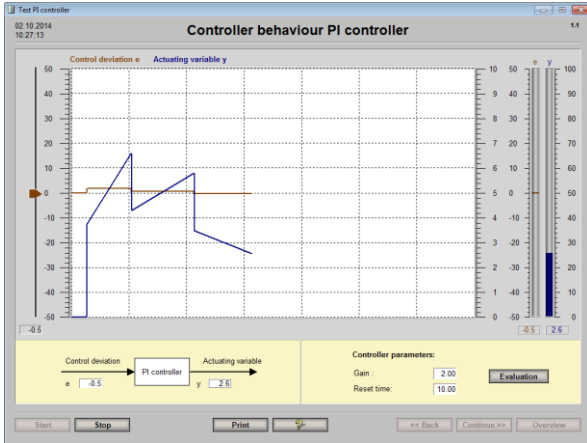
- Flow rate control
- Engine speed control
- Room temperature control
- Cooling chamber control with three-position controller
- Liquid level control with standard controller plus three-position controller



All signals are stored for a graphical analysis of the behaviour of the closed-loop control.

Didactical Structure

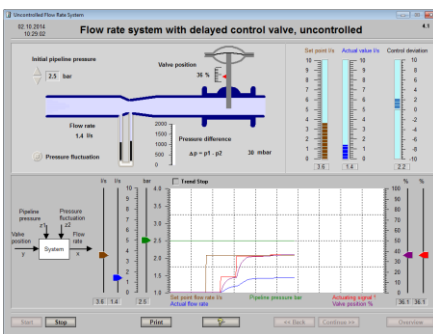
1. Examine controller behaviour



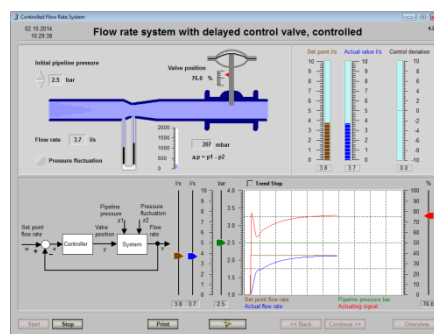
By editing the control deviation the actuating value is analysed with different controllers:

- P controller
- I controller
- PI controller
- PID controller
- Three-position controller

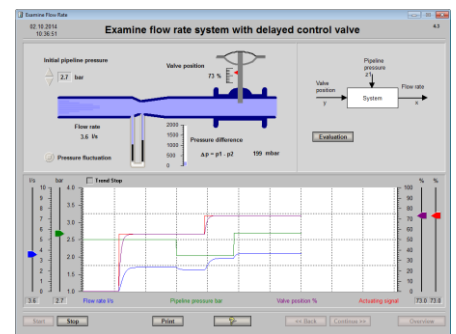
2. Examine different controlled systems



Manual control

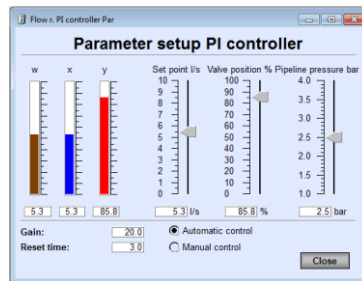
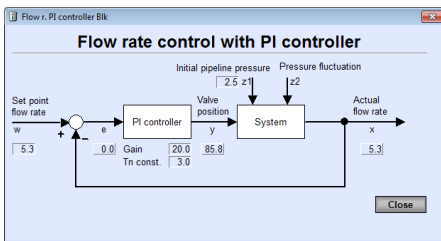


Automatic control

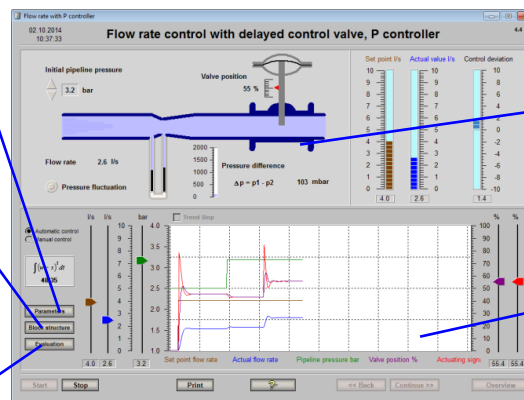


Control system behaviour

Block structure



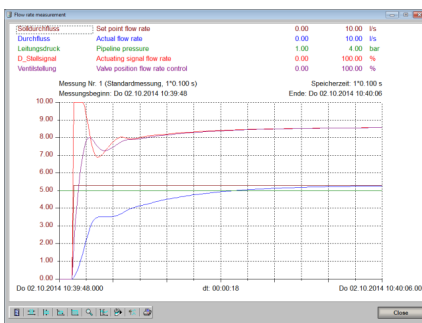
Controller parameters



Examine controller behaviour

Simulated process

Online-Values



Archiving/Storing