

RT 010 – RT 060

Experiments in the fundamentals of control engineering

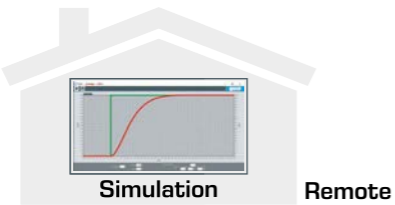
With this series of units, GUNT offers six training systems with typical controlled variables for experimental introduction to the fundamentals of control engineering.

GUNT software in the sense of hardware/software integration (HSI) is an integral component of the equipment concept. The software guides intuitively through the individual experiments and supports interactive action when experimenting with new approaches.

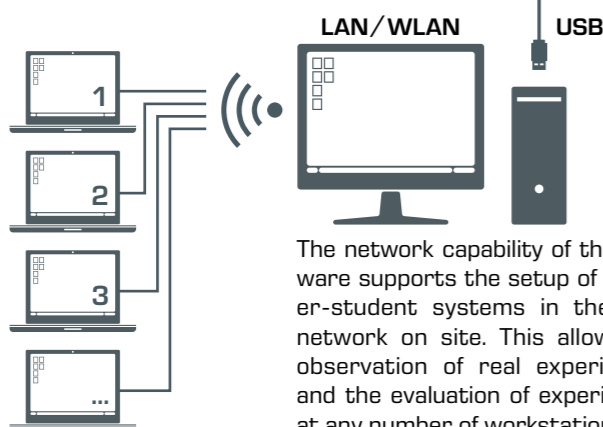
The combination of the descriptive, real controlled system and software simulations of different controlled systems with different controllers offers a higher reference to reality and thus aids understanding.

RT 010

Training system level control, HSI



The instructional material together with the software simulation and the E-Learn course from GUNT help to build up the basics and are carried out in remote learning.



The network capability of the software supports the setup of teacher-student systems in the local network on site. This allows the observation of real experiments and the evaluation of experiments at any number of workstations.

RT 020

Training system flow control, HSI



RT 030

Training system pressure control, HSI



RT 040

Training system temperature control, HSI



RT 050

Training system speed control, HSI

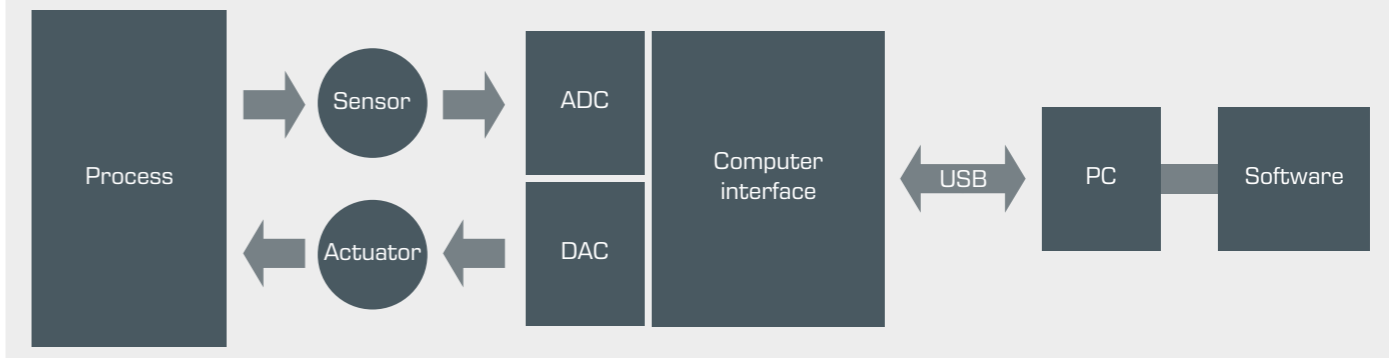


RT 060

Training system position control, HSI



Cooperation of hardware and software – hardware / software integration (HSI)



Advantages

- compact desktop units with low space requirements
- ideally suited to multi-user applications
- typical controlled systems from the field of process control engineering such as flow, level, pressure, temperature, speed and position
- high level of observability of processes based on transparent elements (covers, tanks, pipes)
- one software with many functions for the entire equipment series
- computer interface with USB port
- well-structured instructional material sets out the fundamentals and provides a step-by-step guide through the experiments

Comprehensive experiment programme for each training system:

- control loop analysis
- influence of controller parameters on control action and disturbance response
- stability of the open and closed loop
- controller optimisation

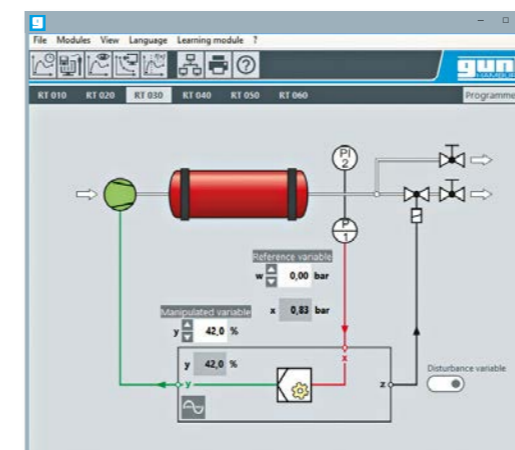
Software

State-of-the-art control and data acquisition software based on LabVIEW for Windows

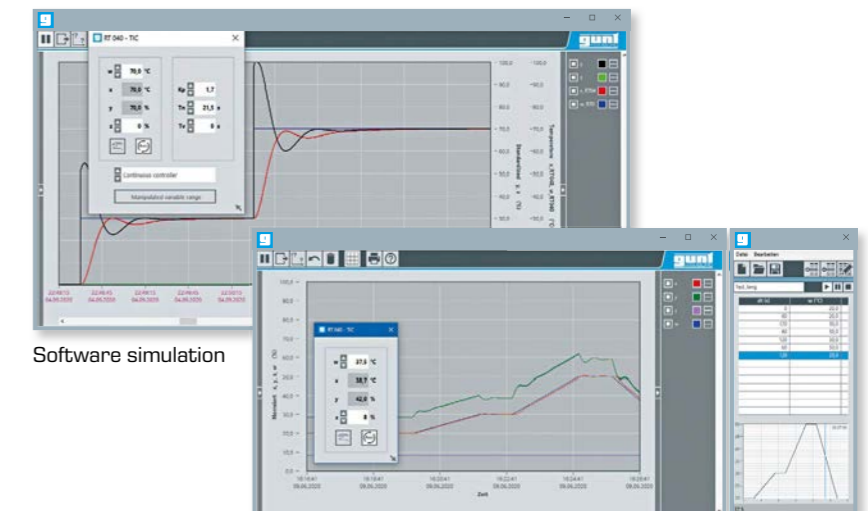
- software controller in real time, possible with real controlled system or simulation options
- programmer for own reference variable characteristics
- display and storage of all process variables
- network capability
- language switching

Software functionality

- process schematics with online display of all process variables
- operating and parameter setting of the software controllers
- manual control of actuators and activation of disturbances
- recording of step responses for system identification
- manual controller optimisation
- stability tests
- controlled system simulations for simplified controlled system models



Process schematic



Software simulation

Programmer