Equipment for engineering education

gunt HAMBURG

In accordance to curricula of Indian engineering colleges

Process control and instrumentation

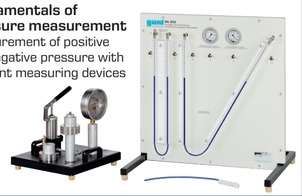
Measuring methods

IA 110
Calibrating a pressure sensor
Test-pressure generated with dead-weight piston manometer

WL 201
Fundamentals of humidity measurement
Comparison of four measuring methods of humidity in a climatic chamber with adjustable humidity

WL 202
Fundamentals of temperature measurement
Experimental introduction to temperature measurement technology: methods, areas of application, characteristics

WL 203
Fundamentals of pressure measurement
Measurement of positive and negative pressure with different measuring devices

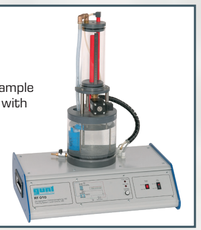


WL 204
Vapour pressure of water – Marcet boiler
Pressure and temperature measurement in a steam boiler

RT 121
Fuzzy control: ball-on-beam
Linear, one-dimensional single-variable system with one input and one output

Fundamentals of process control

RT 010
Training system: level control, HSI
Fundamentals of control engineering using the example of a level control system with integral behaviour



RT 020
Training system: flow control, HSI
Fundamentals of control engineering using the example of a rapid flow control system

RT 030
Training system: pressure control, HSI
Fundamentals of control engineering using the example of a pressure control system with first order lag

RT 040
Training system: temperature control, HSI
Fundamentals of control engineering using the example of a temperature control system with dead time

RT 050
Training system: speed control, HSI
Fundamentals of control engineering using the example of a speed control system with first order lag

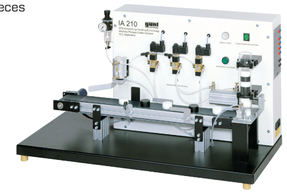
RT 060
Training system: position control, HSI
Fundamentals of control engineering using the example of a position control system with integral behaviour

Advanced process control

IA 120
Principles of industrial sensors
Familiarisation with key sensors: mode of operation and application

IA 130
PLC module
Self-contained PLC module for basic exercises; also suitable for IA 210 and RT 800

IA 210
PLC application: Materials handling process
Basic system of automation: transporting and sorting workpieces



Absorption

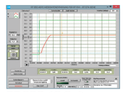
RT 350
Operation of industrial controllers
Simulation of controlled systems; digital controller with freely selectable parameters

RT 360
Networking of industrial controllers
Function and structure of a process control system under Profibus DP

RT 370
Setup of field bus systems
Parametrisation and communication of field bus systems

RT 380
Optimization of control loops
Tuning the controller to the controlled system; software simulation of the most common controlled systems

RT 674
Flow/level control demonstration unit
Experimental introduction to control engineering using an example of a control led system for flow rate, level and level via flow rate (cascade control)

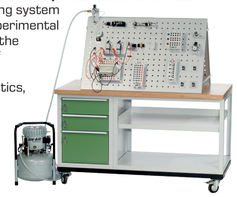


RT 650.40 Software

RT 700
Training system: fundamentals of hydraulics
Complete training system providing an experimental introduction to the fundamentals of hydraulics

RT 701
Components set electro-hydraulics Set of electrohy-draulics components for hydraulics trainer RT 700

RT 770
Training system: pneumatics, electro-pneumatics and PLC
Complete training system providing an experimental introduction to the fundamentals of pneumatics and electro-pneumatics, also with PLC



RT 578
Control of four variables from process engineering
Practical control of level, flow rate, pressure and temperature

RT 681
Multivariable control: vacuum degassing
Model of "degassing of fluids": coupled level and pressure control in one vacuum tank

RT 682
Multivariable control: stirred tank
Heated stirrer tank with heat recovery as model: coupled level and temperature control

Made in Germany

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