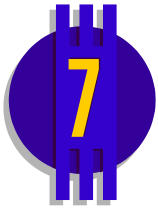


# **The training programs SIM-Trainer and BODE-Trainer**

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## SIM-Trainer



*SIM-Trainer* is a program designed especially for training purposes to learn the way how to deal with step responses of simple or combined linear systems as well as with the analysis of their system dynamic. For this purpose any number of linear standard elements (P-, PT1-, PT2-element etc.) can be combined to a serial connection; afterwards the step responses of all elements, their serial connection and the corresponding closed-loop system can be calculated and displayed. Furthermore various characteristic values of the step responses can be determined which allow a judgement of the system dynamic.

The main features of the program in headwords:

- Representation of step responses of all individual transfer elements, their serial connection and the corresponding closed-loop system
- Input and parameterization of transfer elements via comfortable dialogs and trackbars
- Adding and deleting of transfer elements
- Loading and saving of systems
- Automatical determination of characteristic values for system analysis (response time, settling time, overshoot)
- Display of help lines for graphical determination of characteristic values
- Automatical or manual scaling
- Comfortable measurement mode
- Saving of step response for usage with other WinFACT modules
- Free selection of line widths, curve colours and grids
- Automatical saving of all program settings when program is closed.

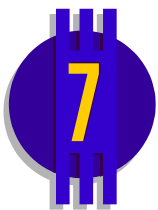
The screenshot below shows a typical main window of *SIM-Trainer*.



Typical main window of SIM-Trainer

More details concerning all program features can be found in the extensive online help.

## BODE-Trainer



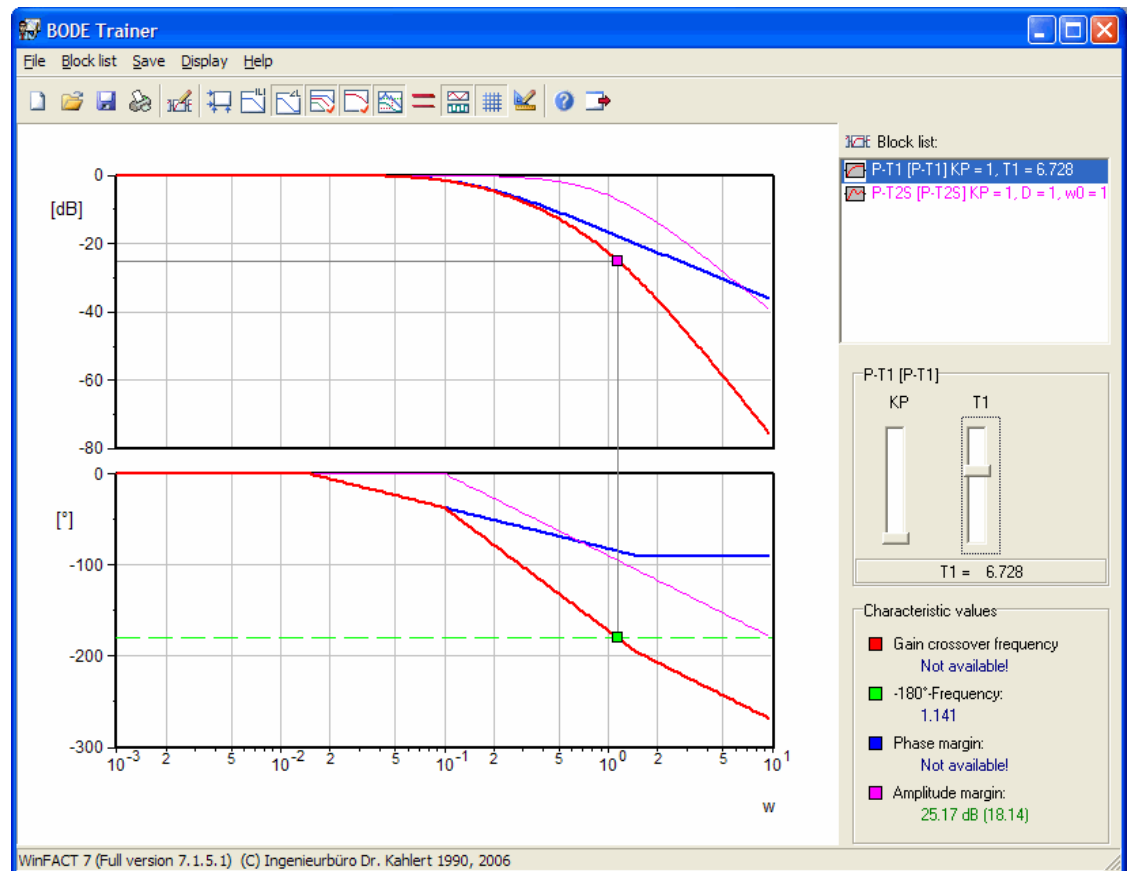
*BODE-Trainer* is a program designed especially for training purposes to learn the way how to deal with Bode plots of simple or combined linear systems as well as with the stability analysis using the *Nyquist* criterion. For this purpose any number of linear standard elements (P-, PT1-, PT2-element etc.) can be combined to a serial connection; afterwards the Bode plots of all elements and their serial connection can be calculated and displayed in various ways. Furthermore various characteristic values can be

determined which allow a stability analysis of the corresponding closed-loop system.

The main features of the program in headwords:

- Representation of gain and phase plot exactly or asymptotically
- Representation of gain and phase in a common diagram or separated
- Input and parameterization of transfer elements via comfortable dialogs and trackbars
- Adding and deleting of transfer elements
- Loading and saving of systems
- Automatical determination of characteristic values for stability analysis (crossover frequency, phase margin, amplitude margin, ...)
- Display of help lines for graphical stability analysis
- Automatical or manual scaling
- Comfortable measurement mode
- Printout on half-logarithmic DIN A4 paper
- Saving of frequency responses for usage with other WinFACT modules
- Free selection of line widths, curve colours and grids
- Automatical saving of all program settings when program is closed.

The screenshot below shows a typical main window of *BODE-Trainer*.



*Typical main window of BODE-Trainer*

More details concerning all program features can be found in the extensive online help.