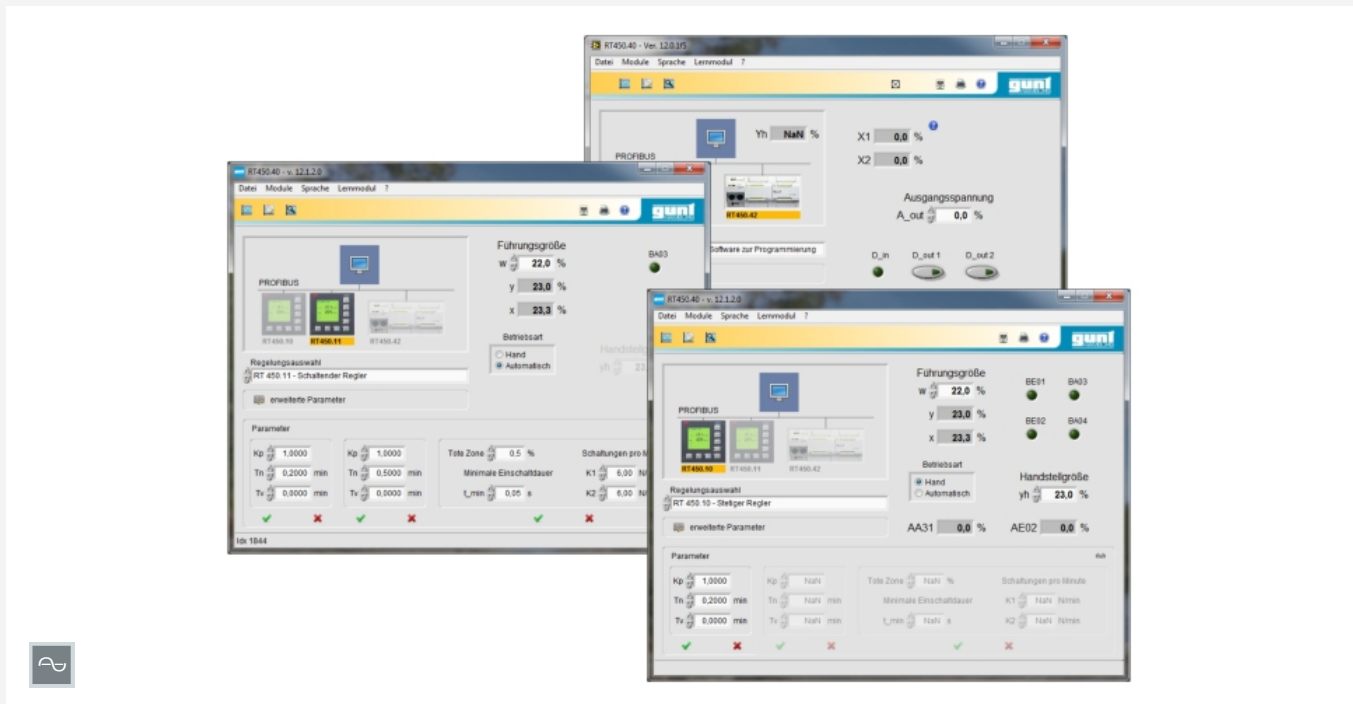


# RT 450.40

## Visualisation software



### Description

- **GUNT visualisation software with display of time functions of process variables**
- **fieldbus system for data interchange between software and accessories of a control loop**
- **PCIe PROFIBUS DP card as fieldbus master**

The automation of a process with PC-supported process monitoring and operation via software requires fast data interchange between the software and the individual accessories of a control loop. The use of fieldbus systems for this purpose is widespread in industry. PROFIBUS is a common standard in fieldbus communication. The protocol used by the RT 450.40 is the PROFIBUS variant PROFIBUS DP.

PROFIBUS communication networks have a hierarchical structure. PROFIBUS DP distinguishes between master and slave devices. The PROFIBUS master determines the data interchange. Slaves receive data or send data on request. Software, the OPC server, provides the interface between the fieldbus system and the process monitoring software.

With RT 450.40, the PCIe PROFIBUS DP card included in the scope of delivery serves as the fieldbus master.

The RT 450.10 and RT 450.11 controllers or the PLC RT 450.42 are slaves. These must also be fieldbus-capable and must be equipped with a PROFIBUS module RT 450.41 or RT 450.43 accordingly. The GUNT visualisation software is used as the software.

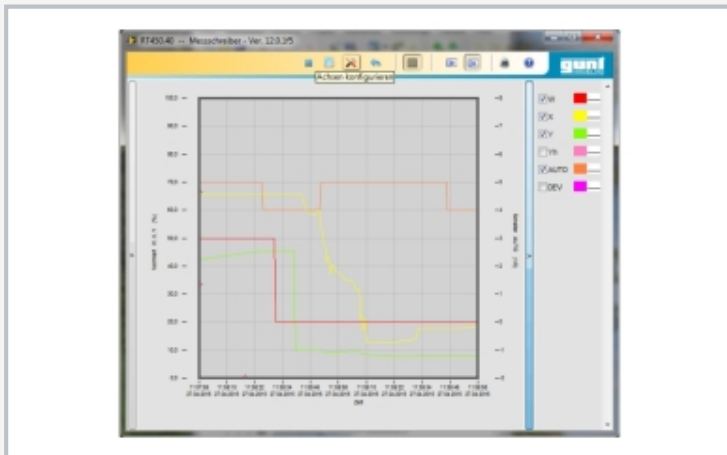
An important feature of the visualisation software, based on LabVIEW, is a chart function for displaying time functions in order to be able to track the values of the signals in the control loop, such as reference value, controlled variable or manipulating variable. The RT 450.10 and RT 450.11 controllers can also be operated and parameterised via the software. Changes made by the software are sent directly to the slaves. Controller settings made using the buttons on the controllers are also sent to the software.

### Learning objectives/experiments

- PC-based automation with fieldbus system for data interchange
- familiarising yourself with hardware components and cabling
- installation and configuration routines
- communication principles
- process monitoring and operation via software
- tracking the values of signals in the control loop, track via software time functions
- familiarising yourself with elements of a fieldbus system
  - ▶ PROFIBUS card as master
  - ▶ OPC server
  - ▶ system configurator

# RT 450.40

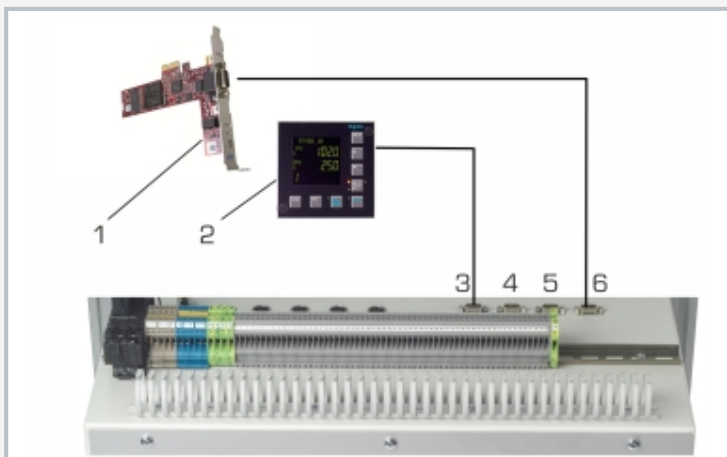
## Visualisation software



Screenshot of visualisation software: chart function for displaying time functions in a control system



PCIe PROFIBUS DP card



PROFIBUS connections on RT 450  
 1 PROFIBUS card, 2 controller module (RT 450.10) with PROFIBUS module (RT 450.41).  
 3, 4, 5, 6 connection sockets on the control cabinet of the basic module (RT 450)

### Specification

- [1] PC-based automation
- [2] process monitoring and operation via visualisation software
- [3] chart function for visualising time functions
- [4] data interchange via fieldbus system
- [5] protocol PROFIBUS variant PROFIBUS-DP
- [6] PCIe PROFIBUS DP card as fieldbus master
- [7] RT 450.10 or RT 450.11 controller module with RT 450.41 PROFIBUS module as slave
- [8] RT 450.42 PLC module with RT 450.43 PROFIBUS module as slave
- [9] PROFIBUS connections already prepared on the switch box of the RT 450 base module
- [10] software via PCIe under Windows 11

### Technical data

- PROFIBUS card
- communication interface: PROFIBUS DP
  - system interface: PCIe
  - data access: Dual-port memory
  - integrated memory: 8MB SDRAM
  - SYCON.net configuration software
  - OPC server

### Required for operation

PC with Windows

### Scope of delivery

- 1 PROFIBUS card
- 1 GUNT software + data cable

# **RT 450.40**

## **Visualisation software**

Required accessories

RT 450.41      PROFIBUS DP module for controller