

### Technical Teaching Equipment



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## DESCRIPTION

This Trainer is used to teach the initial or first steps in field bus technology based on Profibus DP.

The field bus permits networking terminal devices (controllers, actuators or sensors) in the plant system (field level) with the control room (control level).

Several devices (slaves) are activated and read by a computer (PC) with a Profibus DP interface (master).

Different subjects or topics can be covered and studied: bus topology, system configurator with Device Master File "DMF", communication protocols, tags, OPC server, output and input process data, etc.

This trainer basically includes:

- Digital process controller.
- Analog input/output modules.
- Digital input/output modules.
- Profibus DP interface.
- Potentiometers.
- Digital Voltmeter.
- OPC server and process control software.

Etc.



ISO:9001-2000 Certificate of Approval. Reg. No. E204034



European Union Certificate



Certificates ISO 14001: 2004 and ECO-Management and Audit Scheme (environmental management)



Worlddidac Quality Charter Certificate Worlddidac Member

## SPECIFICATIONS

Trainer for field bus systems.

Steel box.

Digital process controller, with Profibus DP interface:

Configurable as P, PI or PID controller. Proportional gain  $X_p$ : 0-999.9%. Derivative time  $T_v$ : 0-1200s. Integral action time  $T_n$ : 0-3600s.

Signal generators: 0-10V.

Digital voltmeter: 0-20V.

Digital Profibus DP I module.

Digital Profibus DP O module.

Four digital inputs.

Four digital outputs.

Analog Profibus DP I module.

Analog Profibus DP O module.

Four analog inputs: 0-10V.

Two analog outputs: 0-10V.

Profibus DP interface card for computer (PC).

Process variables as analog signals at lab jacks: 0-10V.

Software CD with driver software, system configurator, OPC server and process control software.

Possibility of connection of external instruments via lab jacks (for example: chart recorder, oscilloscope, etc).

Set of cables.

Manuals:

This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

## EXERCISES AND PRACTICAL POSSIBILITIES

### Some Practical Possibilities of the Trainer:

- 1.- Operation and function of a digital industrial controller.
- 2.- Function of an analog input/outputs module.
- 3.- Function of a digital input/output module.
- 4.- Layout of a field bus system.
- 5.- Familiarisation with the field bus stations.
- 6.- Defining the bus technology with the stations.
- 7.- Reading out and in, and online displaying of analog and digital process variables.
- 8.- Communication protocols.
- 9.- To define tags.
- 10.- Familiarisation with the device master file "DMF".
- 11.- OPC server.
- 12.- Access to the OPC database from the process control program.

## REQUIRED SERVICES

- Electrical supply: single-phase 220V. / 50Hz. or 110V. / 60 Hz.
- Computer (PC)

## DIMENSIONS & WEIGHT

- Dimensions: 490mm x 330mm x 310mm. approx.
- Weight: 12Kg. approx.