

# Equipment set TP 1111: Power supply systems and protective measures



## Fundamentals of electrical protective measures

Protecting people plays an important role when using electrical energy, as it is not visible and is recognisable only by its effects. Possible risks must therefore be minimised through suitable safety measures.

Examples provide an introduction to the problems associated with electrical safety measures. Current conditions are examined and the risks resulting from the relevant situation are demonstrated by means of measurements. The subsequent analysis and interpretation of the measurement results show the relationships and identify measures.

## Advantages

- Lockable error switches integrated in the housing facilitate realistic fault finding
- No additional power supply required
- For a practical explanation of the protective measures, measurements and tests are carried out using conventional test and measuring devices.
- The optionally available Systainer solution meets work, transport and storage requirements efficiently.

## Training content

Power supply:

- Power supply systems (TN, TT, IT system)
- Protective measures in the different networks

Service connection:

- Components of a service connection system
- Additional designations in the TN system (TN-C, TN-S, TN-C-S)
- Selection of the protective measure and protective devices
- Protective measure measuring devices
- Planning and execution of initial tests in accordance with DIN VDE 0100-610 and repeat tests in accordance with DIN VDE 0105 and BGV A3
- Creating test reports
- Safety and availability advice for customers

Sub-distribution:

- Using protective measures and measuring devices
- Planning and execution of initial and repeat tests
- Evaluation of the measurement results
- Creating test reports
- Identifying, describing and measuring risks due to errors
- Systematic troubleshooting

General:

Conducting customer dialogues

- for system commissioning
- for repeat testing
- for errors/malfunctions in the electrical system
- following successful repair

Also order:

### **Workbook**

The exercises in the workbook contain concrete, realistic projects with problem descriptions, parameters and project tasks.

The workbook contains:

- Sample solutions
- Educational instructions
- Multimedia CD-ROM with graphics
- Worksheets for learners

The worksheets support the learner in the information and planning phase as well as with execution, monitoring and documentation.

All exercises require independent performance, evaluation and documentation from the learner.