

# Educational Training Systems for Tomorrow's World





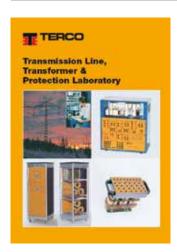
## Power System Simulator PST 2200

A superior modular training system for power training.

The four main modules: Power Plant, Transmission Line, Substation and Load Module, can all be individually operated, and the system can be gradually upgraded when the need occurs.

Our Power Factor Module is an important module and can be integrated into the system. The PST2200 can be delivered with one, two or three generators.

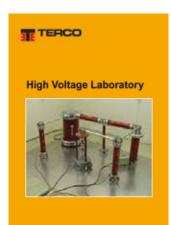
The system includes a sophisticated logical blocking system, isolators and circuit breakers. Various degrees of protection can be chosen, based on ABB IED relay models. The system can be equipped with the Terco SCADA module based on GE FANUC iFIX software, which is used in power plants across the world.



# Transmission Line, Transformer and Protection Laboratory

This catalogue includes all our various Terco products regarding Transmission Line Modules, Protective Relays, electronic as well as numerical and IED relays, Transformers and Rheostats. The different equipment can also be used together with our Power System Simulator.

- Universal Relay Trainer.
- Distance Protection Trainer.
- Differential Protection Trainer.
- Transmission Line Modules
- Transformers
- Accessories



# High Voltage Laboratory

TERCO High Voltage Laboratory is based on a system of components made with the highest precision and can be used to build systems both for teaching and research as well as for industrial routine and type tests.

The assembly of a required Test Set Up is easily done and requires no special toolings. The system gives values with high accuracy and can even be used for calibration purpose.

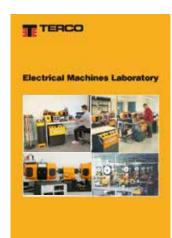
We can supply the following standard labs:

HV AC Lab, 100 - 300 kV

HV DC Lab, 140 - 400 kV

HV Impulse Lab, 140 – 420 kV

as well as various testing equipment.



## Electrical Machines Laboratory

Well known all over the world for their tremendous durability and high standards of safety. Many of the systems delivered during the seventies are still working satisfactorily. Our products have been gradually upgraded, and all the latest technology has been introduced into this program. e.g. 4 Q Drives and remote control. Machine size: approx. 1 kW.

The **Terco Classic Electrical Machines Program** is a flexible system where it is possible to interchange machines. The equipment has been adapted for control and data acquisition with PC (see brochure "Data Acquisition and Control Package").

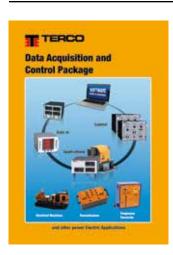




### **Motor Control Systems & Drives**

Today Terco produces a wide range of Motor Control Systems.

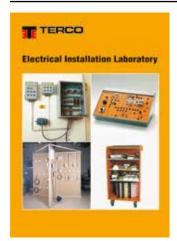
- 1. Motor Control Package including the DC-Motor and the AC-Motor, controlled in different modern ways and loaded steplessly.
- 2. System for Automatic Contactor Control. The package is designed for theoretical and practical laboratory teaching of fundamental automation with contactors, relays etc.
- 3. Stepper Motor Training Unit.
- 4. Modern AC- and DC-drives covering manual analogue operating and settings with close-by or remote PC-control by comprehensive and smart software.



# Data Acquisition and Control Package

The increased use and availability in the schools made it natural to adopt our Electrical Machine System to this environment. Terco has developed equipment and software for measuring and acquisition of important parameters. The system is mainly made for electric power applications. The applications can be controlled manually or automaticly by the software.

The Terco Data Acquisition and Control Package is a combination of Measuring Units, Control Units, Data Interface Module and Data Acquisition Software, enabeling the user to observe, control, record and investigate relevant electrical data. A typical application is in the electrical machines laboratory.

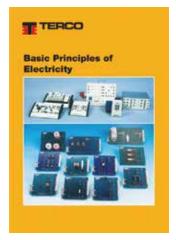


# Electrical Installation

Different types of training equipment which is essential for training the students in electrical installation and fault finding processes. All material and equipment used in our laboratories conform to accepted standards. Our equipment is listed in ILO's and UNDP's purchase guides.

# Basic Principles of Electricity

Modern laboratory equipment for DC, Single Phase AC and 3-phase AC to give basic knowledge of electricity. Common components are studied. e.g. resistors, isolators, batteries, capacitators and conductors as well as 1-phase and 3-phase systems, phase difference, motors, 3-phase transformers and control of motors.



Basic Power Electronics

#### **Electronics**

Analogue and Digital Electronics is a complete lab system including comprehensive theory and exercise books in four colours.

The system is built up around the multifunctional Base Unit 2000.

The electronics subject range comprises:

Basic Electronics – Analogue Electronics – Digital Electronics – Microprocessor Electronics – Power Electronics and Opto Electronics.





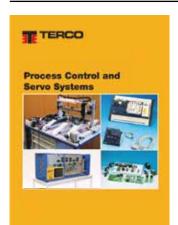
## Control Technology, Mechatronics

Terco has a comprehensive programme within Mechatronics from basic courses in PLC up to advanced pneumatics and control techniques with PLC.

Terco Mecha-Kit is a separate modular system for basic learning in pneumatics and control technique.

Our Basic Control Technology course offers a good ground training in control technology and automation.

The courses in this concept make use of our Laboratory Exercise Book in four colours.



## **Process Control and Servo Systems**

The Process Control equipment and measuring techniques is a modern educational package containing technical literature and hardware. The program product PID-Future together with the interface (PF-1) and many different control components combine to give a package that can handle the most common control processes, together with the help of a computer.

The Servo Technique Set is an educational package covering different motors used: DC stepper motors, AC and DC servo motors with relevant controls.

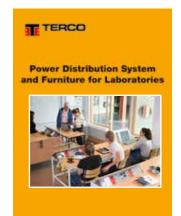
The Terco Energy Process Trainer is a bench model of a heating system, which enables practical laboratory training on a comprehensive system with the possibility to verify the applied theoretical relationships.



# Material Testing Laboratory Properties of Material

The equipment perfectly shows the basic idea of the Terco Training Equipment. Practical size, minimized risk for the students, easy to handle and to understand, and with a low cost profile.

This makes it possible for schools and colleges to buy complete sets of equipment instead of being able to afford only one or two items. A large number of students can thus follow courses which were previously available only to a privileged few.



# Power Distribution System and Furniture for Laboratories

Terco is a leading manufacturer of Power Distribution Panels for schools. We manufacture a wide selection of panels and very often on customers demands. The design is modern and with safety as a priority. Very often power supply and instrumentation integrated in the furniture gives better value and more effective laboration exercises.

The Furniture has a modern and ergonomic design to meet the requirements of the school of today.



TERCO managers in front of headoffice



TERCO has delivered equipment to more than 65 different countries throughout the world



Protective Relay Training



TERCO regularly participates in international fairs



The Terco PST-SCADA system



The Terco Mecha-Kit, Mechatronics



Electrical Machines Laboratory well equipped with Terco products



Installation of High Voltage Equipment

#### TERCO HEADOFFICE



Terco headoffice and factory outside Stockholm, Sweden



TERCO AB was founded in 1963 with the aim of producing and supplying practically oriented equipment for technical education.

TERCO develops, manufactures and markets advanced equipment and systems for technical education. TERCO is today represented in more than 50 countries world wide.

# TRAINING FOR TOMORROW'S WORLD



















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