4. Applications in the building trade

Study bench for selectivity of protective systems

Training objectives

- Using an adjustable differential relay with separate ring core.
- Analysing the causes and effects of short circuit currents (calculation methods, choice of protection devices).
- Studying the operating principles of a thermal-magnetic circuit breaker (tripping curves, breaking capacity).
- Using and drawing the tripping curve for a given rating.
- Implementing selectivity between upstream and downstream protection devices.
- Simulating situations of full selectivity, partial selectivity and non-selectivity.
- Studying the notions of selectivity with 2 or 3 stages (consequences and effect on an installation).
- Selecting the impedance of the fault loop via induction coils with modular values.
- Presenting, in a simplified way, the principle of breaking via an electrical arc under very low voltage.
- Limiting the short circuit current.

Presentation

This bench is designed to study and implement two selectivity strategies for protection devices in low voltage distribution systems:

- Ammeter selectivity.
- And chronometric selectivity.

Two isolating transformers enable limitation of the energy level involved when creating the deliberate faults required for the study.

Description

- The bench is mounted on a frame with locking wheels.

Contents

Description	Quantity.
Mimic diagram panels: ammeter selectivity and chronometric selectivity	2
Isolating transformers in the lower part: 220 V / 48 V and 220 V / 220 V	2
Set of induction coils (for ammeter selectivity.	1
Rheostat (for chronometric selectivity)	1

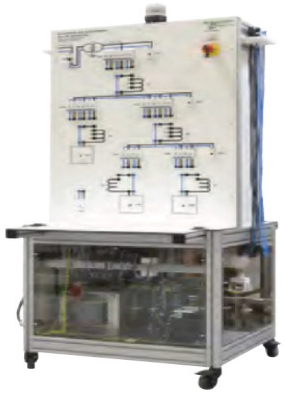
Accessory supplied

Description	Quantity.
set of safety leads	1

References

Description	Reference No.
Study bench for selectivity of protective systems	MDG99610

Chronometric side



Ammeter side

Decision aid

Sectors concerned
- Electrical
- Maintenance

Designated skills
- Analysis
- Configuring
- Checking

Themes studied
- Electricity distribution