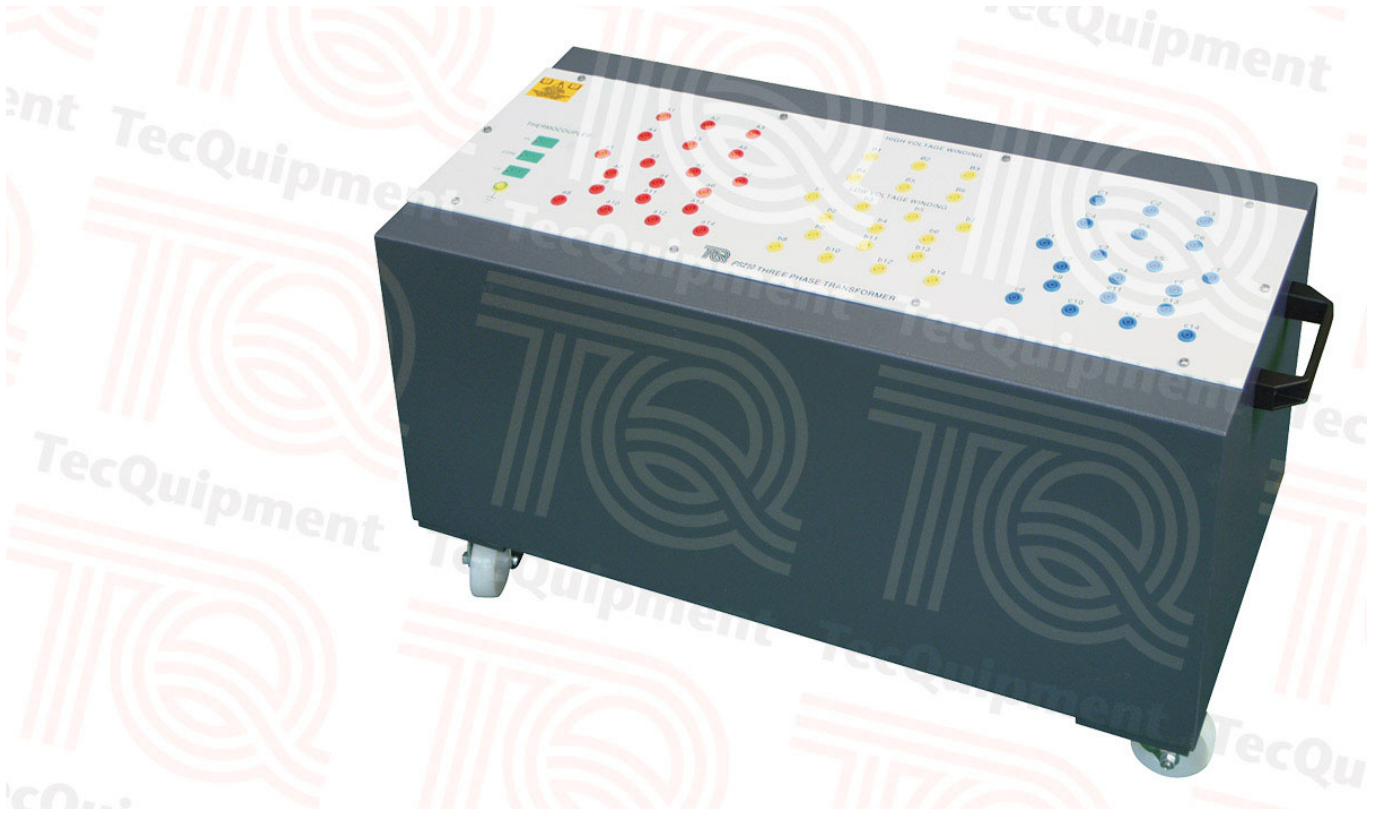


## PS210

## Three-Phase Mobile Transformer

***A mobile 3 kVA three-phase multi-tapped transformer for a wide range of single-phase or three-phase experiments***



- Open and flexible design for wide variety of experiments and demonstrations
- For use in single-phase or any three-phase configuration, including star, delta, interstar and others
- Mobile, for easy use
- One-volt-per-turn winding design for easy demonstration of transformer principles
- Coloured, shrouded sockets for improved laboratory safety
- Includes thermocouples for core and winding temperature measurements
- Multiple tapplings for selection of input and output voltages

- TecQuipment Ltd, Bonsall Street, Long Eaton, Nottingham NG10 2AN, UK
- **T** +44 115 972 2611 • **F** +44 115 973 1520 • **E** info@tecquipment.com • **W** www.tecquipment.com
- An ISO 9001 certified company

# PS210

## Three-Phase Mobile Transformer

### Description

The Three-phase Mobile Transformer is an essential tool for experiments and demonstrations of transformer theory. It consists of three identical transformers on a common core to create a three-phase transformer. The transformer is inside a steel enclosure, which has small wheels for ease of mobility.

The transformer has a selection of high-voltage (primary) and low-voltage (secondary) tapplings to select a range of input and output voltages.

All tapplings are accessible, so students may link the windings to suit any of the common three-phase connections. All tapplings connect to coloured, shrouded sockets for safety.

To show transformer principles clearly, the transformers operate as one volt each turn. This means that the no-load output voltage is the same as the number of turns on the secondary.

Thermocouples measure the temperatures of the primary windings, the secondary windings and the core of one of the phases.

To perform a typical open-circuit test, students connect the primary and secondary winding to suit their experiments. They then connect a suitable variable supply to the primary windings and measure the no-load output voltages. The students then rearrange the primary windings to a different arrangement and note the differences in output voltages. Students do the short-circuit tests in a similar way, but they short the secondary windings to give maximum current flow.

The thermocouples help to show the temperature changes in the transformers in open and short-circuit conditions. The readings help the student to understand the temperature specification for materials used in transformers.

Supplied with a detailed user guide, including theory and experiments.

### Standard Features

- Supplied with comprehensive user guide
- Two-year warranty
- Manufactured in accordance with the latest European Union directives

### Experiments

- Single-phase and three-phase experiments
- Open and short-circuit tests
- Harmonics and unbalanced loading
- Star-star connected transformers
- Delta-delta connected transformers
- Star-delta and delta-star connected transformers
- Interstar connection
- Iron and copper losses

### Recommended Ancillaries

- Portable Resistive Load Bank (PS231)
- Portable Capacitive Load Bank (PS232)
- Portable Inductive Load Bank (PS233)

### Operating Conditions

*Operating environment:*  
Laboratory environment

*Storage temperature range:*  
-25°C to +55°C (when packed for transport)

*Operating temperature range:*  
+5°C to +40°C

*Operating relative humidity range:*  
80% at temperatures < 31°C decreasing linearly to 50% at 40°C

### Sound Levels

Less than 70 dB(A)

### Specifications

*Nett dimensions and weight:*  
340 mm wide x 900 mm long x 500 mm high and 100 kg

*Packed weight and volume:*  
200 kg and 0.3 m<sup>3</sup>

*Transformers:*

- 3 kVA nominal (1 kVA each phase)
- 3 x single-phase double-wound transformers (phase A, B and C) on a common core
- Each primary has two sections with tapplings at 0 V, 18 V, 120 V and 138 V
- Each secondary has two sections with tapplings at 40 V, 48 V, 50 V, 52 V, 60 V, and 69 V

*Thermocouples:*

Three K-type thermocouples, each fitted to the primary, secondary and core of phase B transformer. Each thermocouple connects to K-type sockets on the connection plate of the transformer.