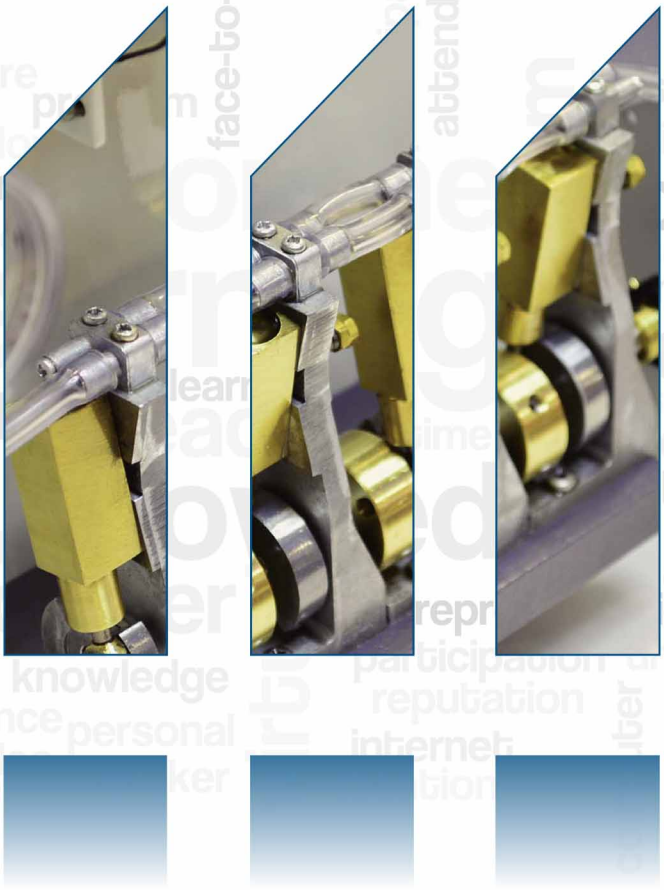

Control Engineering

infoWERK
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CE108 Coupled Drives Apparatus

Compact, self-contained, bench-mounting apparatus to study basic and advanced principles of control of coupled drives

- Self-contained and compact bench-mounting unit
- Shows the problems of speed and tension control with coupled drives
- Mimics many industrial and household applications with realistic results
- All inputs and outputs buffered for connection to TecQuipment's optional controllers or other suitable controllers
- Ideal for classroom demonstrations and student project work
- Shows basic speed control and advanced multivariable control
- Front panel includes a mimic diagram of the process so that students can clearly see what they are controlling

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An ISO 9001 certified company

TecQuipment

CE108 Coupled Drives Apparatus

Description

The CE108 Coupled Drives apparatus shows the problems of controlling speed and tension in coupled drives. Many applications use coupled drives, for example: magnetic tape drives, textile machines and paper mills.

The apparatus has two electric motors, coupled by a continuous flexible belt. The belt also passes over a swinging arm with a 'jockey wheel' that measures the belt speed and tension. A manual control allows the user to adjust the spring tension at the swinging arm.

The basic control problem is to vary the torque in the motors to regulate the belt speed and tension. The user guide also shows techniques for speed and tension control, simultaneous control of velocity and tension, and analysis of multivariable control systems.

Note: You must use the CE108 with TecQuipment's optional CE120 Controller, the optional CE122 Digital Interface, or other suitable controllers with 10 V inputs and outputs. Details of the CE120 and CE122 are on separate datasheets.

The CE108 includes a set of cables and connectors for connection to other equipment.

All control connections work with 0 to 10 VDC signals.

Standard Features

- Supplied with comprehensive user guide
- Five-year warranty
- Made in accordance with the latest European Union directives

Essential Base Unit:

- Controller (CE120) – A controller with analogue and digital controls and instruments

  or
- Digital Interface (CE122) – An interface which connects between most products in the Control Engineering range and a suitable computer (not included)

  or
- Other suitable controller with 10 V inputs and outputs

  Both the CE120 and the CE122 include TecQuipment's CE2000 Control Software (see separate datasheet) with editable, pre-made control experiments for use with the CE108.

Recommended Ancillaries

- Optical Tachometer (OT1)

Experiments

- Independent control of speed and tension
- Simultaneous control of speed and tension
- Practical methods of controlling multi-variable electro-mechanical systems

The flexible design of the equipment allows the user to develop many other analysis and control exercises to suit their needs. It is good for extended or advanced control experiments, and is ideal for student project work.

Essential Services

Electrical supply:
220 VAC to 240 VAC at 0.4 A or

110 VAC to 120 VAC at 2 A

50/60 Hz, with earth

Other voltages and frequencies available to special order

Bench space needed:
1 m x 750 mm

Operating Conditions

Operating environment:
Laboratory

Storage temperature range:
–25°C to +55°C (packed)

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:
540 mm x 330 mm x 625 mm, 20 kg

Packed dimensions and weight:
0.37 m^3, 30 kg (approx – packed for export)

Inputs: 0 to 10VDC
- Motor 1: 0 to +/– 10 VDC
- Motor 2: 0 to +/– 10 VDC

Outputs: 0 to 10VDC
- Motor 1: speed
- Motor 2: speed
- Belt tension: 0 to +/– 10 VDC
- Jockey pulley speed: 0 to +/– 10 VDC

Other controls:

Swinging arm spring tension

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Furthermore infoWERK is the representative and system integrator of "TecQuipment".

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