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Product Name :	**Product Code :**
Free and Forced Vibrations	TN952

Description :

Free and Forced Vibrations

Technical Specification :

Free and Forced Vibrations
The unit is perform the following experiments and investigations:

Learning Objectives / Experiments:
Free vibrations
Damped vibrations
Inertia force and displacement excitation
Forced vibrations
Resonance
Amplitude response and phase response
To be supplied with;
System for Data Acquisition
PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

Specification:
Fundamentals of mechanical vibration theory; free, damped and forced vibrations
Bar-type oscillator
3 coil springs
Imbalance exciter with dc motor
Displacement exciter with dc motor

Electronic control unit with digital display, adjustable excitation frequency
Damper with oil fill
Electrically driven drum recorder
Amplitude meter with electrical contact for triggering devices
Storage system for parts

Technical Data:
Bar-type oscillator: Length x Width x Height: 700x25x12mm, 1,6kg
Coil springs
0,75N/mm
1,5N/mm
3,0N/mm
Exciter frequency: 0...50Hz, electronically controlled
Imbalance of the imbalance exciter: 0...1000mmg Stroke of the displacement exciter: 20mm
Damper constant: 5...15Ns/m, oil-filled
Mechanical drum recorder
Feed: 20mm/s
Paper width: 100mm
230V, 50Hz, 1 phase
230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase
Dimensions and Weight
Length x Width x Height: 1000x420x900mm
Frame opening Width x Height: 870x650mm
Weight: 52kg
Storage system:
Length: Width x Height: 1170x480x237mm
Weight: 12kg
Including PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

1. System for Data Acquisition
Natural vibration of a bar-type oscillator
Damped vibration of a bar-type oscillator
Forced vibration of a bar-type oscillator (damped and undamped resonance)
Frequency and period time measurements

Specification:
Data analysis for Free and forced vibrations
Measurement, recording and analysis of frequency response and transfer function
Function as digital storage oscilloscope
Interface box with 3 sensor inputs, 3 analogue outputs
1 inductive displacement sensor (amplitude), 2 reference sensors (exciter force)
Software for data acquisition via USB under Windows 7, 8.1, 10

Technical Data:
Sensor input channels: 3
Inputs in oscilloscope mode: 2
Time basis: 10 ... 750ms/DIV
Record length: 2000 points
Displacement sensors
Measuring range: 5...10mm
Frequency range: 0...50hz
230V, 50Hz, 1 phase
230V, 60Hz, 1 phase

120V, 60Hz, 1 phase
Dimensions and Weight
Length x Width x Height: 265x260x110mm (interface box)
Weight: 7kg
Length x Width x Height: 600x400x170mm (storage system).

Naugralabequipments

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