

Product Name :
Stress And Strain Analysis on A Membrane

Product Code :
TN188



Description :

Stress And Strain Analysis on A Membrane

Technical Specification :

Stress And Strain Analysis On A Membrane

The unit is perform the following experiments and investigations:

Learning Objectives / Experiments:

Measure radial and tangential strain using strain gauges

Measure deflection using a dial gauge

Calculate the stresses from the measured strains: radial stress, tangential stress

Determine direction of principal stress

Application of mohr's strain circle to determine the principal strains

Fundamental principle: using strain gauge technology to measure strains

Supplied with;

Multi-channel measuring amplifier

PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

Specifications:

[1] investigate the deflection and strain of a thin disk under compressive load

[2] strain gauges measure in the radial and

[3] direction

[4] strain gauge configured as half-bridge

- [5] possible to measure the deflection at any radius
- [6] measure the deflection
- [7] adjustable dial gauge, scale indicates position along the radius
- [8] hermetically sealed hydraulic system, maintenance-free, for
- [9] the compressive load
- [10] hydraulic system with hydraulic pump and manometer
- [11] with the supplied measuring amplifier
- [12] software for analysing measured values in the amplifier supplied

Technical Data

Aluminium disk

Outer diameter: $\tilde{A}=230\text{mm}$

Diameter used in the experiment: $\tilde{A}=200\text{mm}$

Thickness: 3mm

Strain gauge application

8 strain gauges: half-bridges, 350 Ohm

Gauge factor: $2,00 \hat{A} \pm 1\%$

Power supply: 10v

Dial gauge

0...20mm

Graduation: 0,01mm

Manometer

0...1bar

Accuracy: class 1,0

System pressure

0,6bar

Dimensions and Weight

Length x Width x Height: 700x350x350mm

Weight: 25kg

Multi-channel measuring amplifier

Amplification and display of signals from strain gauge measuring points

Processing of measured values on computer

Evaluation of stress and strain analysis experiments,

Evaluation of experiments relating to forces

Specification:

[1] multi-channel measuring amplifier for processing of strain gauge signals

[2] strain gauge connection in half or full bridge configuration

[3] strain gauge connection via 68-pin input port

[4] automatic tare of measured values

[5] processing of measured values directly in the measuring amplifier or using the supplied software on a PC

[6] integrated software for experimental units on stress and strain analysis

[7] software for data acquisition via USB under Windows 7, 8.1, 10 including PC1 Computer-System with 21" TFT-Monitor Win 10 engl.

Technical Data:

Amplifier

Number of input channels: 16

Strain gauge connection in half or full bridge configuration

Resistance: min. 350 ohm/strain gauge

Strain gauge supply voltage: $\hat{A} \pm 5\text{vdc}$

Input voltage: max. $\hat{A} \pm 32\text{mV}$

230V, 50Hz, 1 phase
230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase
Dimensions and Weight
Length x Width x Height: 230x200x120mm
Weight: 2kg.

Naugralabequipments

Website: www.naugralabequipments.com, **Email:** sales@naugralabequipments.com

Address: 6148/6, Guru Nanak Marg, Ambala Cantt, Haryana, India. **Phone:** +91-9896600003