



**Redundant Truss Apparatus With DAQ : Order Code - 32201**

**Redundant Truss Apparatus Without DAQ : Order Code - 32202**

### Features

- High-quality structures teaching module for students of mechanical, civil and structural engineering
- Allows safe and practical experiments into determinate and indeterminate structures
- Realistic and verifiable experiment results
- Optional Software package for extra, 'virtual' experiments, that simulate and confirm the results from your hardware and allow extended experiments
- Optional Software package for automatic data acquisition and virtual experiments

Tesca Redundant Truss Apparatus 32201 fits onto a Structures Test Frame. Two supports hold the top and base of one side of a structure. The top support allows pivoting, the base support allows pivoting and rolling. Initially, one of the members is missing from the structure, making it determinate. To make the structure indeterminate, students refit the missing member.

Students manually apply a load to one end of the determinate framework using a screw-thread and electronic load cell. The load cell connects to a Digital Force Display which shows the applied load.

Each member of the structure has strain gauges attached. These each connect to a digital strain bridge which shows the member strains. Students use the strains to help them calculate the forces in the structure. A digital deflection indicator measures displacement in the structure.

Students note applied load, strains and deflection in a determinate framework. They then repeat the experiment with the frame made indeterminate, and analyze and compare their results.

### Specifications

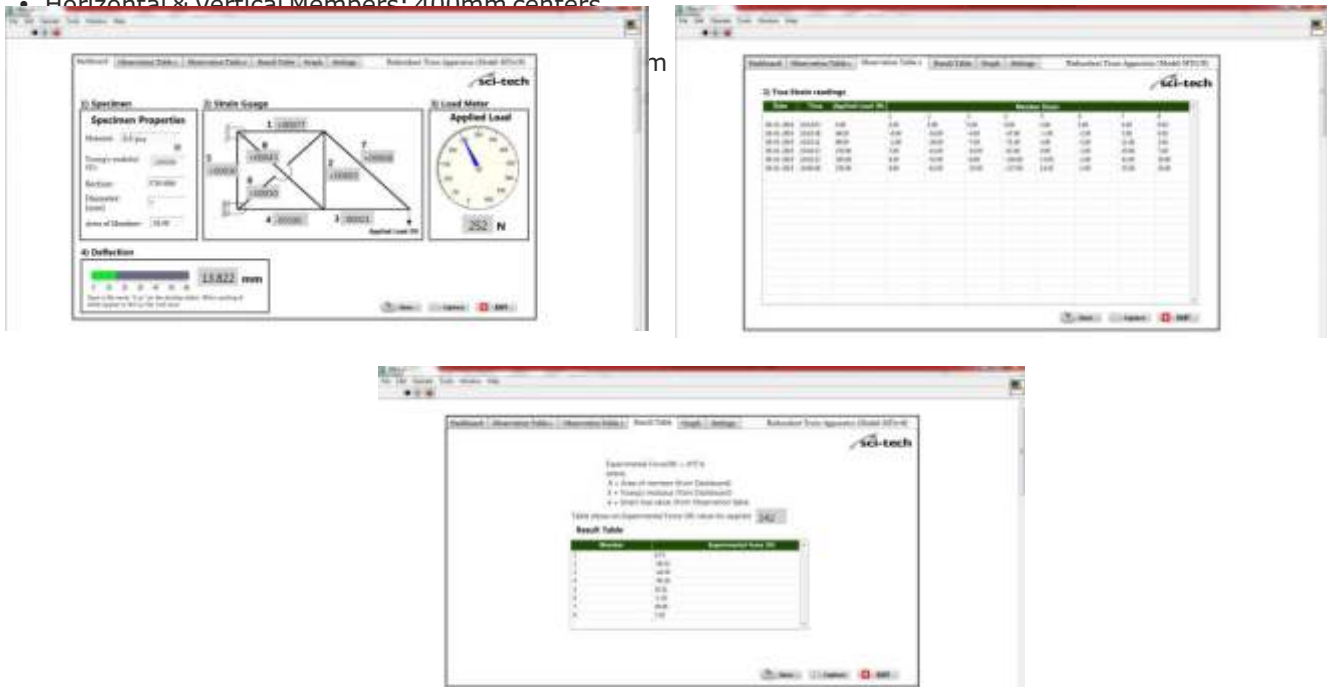
- Load application: 500 N electronic Load Cell, Resolution 0.1N
- Strain measurement: 16-way Digital Strain Bridge
- Deflection measurement: Digital Deflection Indicator, Resolution 0.01mm
- External Frame Load: 5kN max

Note: Specifications are subject to change.

### **Tesca Technologies Pvt. Ltd.**

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- Horizontal & Vertical Members: 400mm centers



Computer Interface Screenshots

### Experiments

- Study of strains, stresses, forces and deflections in:
- A statically determinate structure
- A statically indeterminate structure

### Operating Conditions

Operating environment: Laboratory

- Storage temperature range:  $-10^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$  (when packed for transport)
- Operating temperature range:  $+10^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$
- Operating relative humidity range: 80% at temperatures  $< 31^{\circ}\text{C}$  decreasing linearly to 50% at  $40^{\circ}\text{C}$

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