



### Features

The gauge factor (or strain factor) of a strain gauge is the ratio of relative change in electrical resistance to the mechanical strain. The signal obtained with a strain gauge is processed by a strain measurement amplifier to visualize the resulting strain in a display.

To evaluate the measurements given by the measuring device and the reading shown in the display, it is necessary to know the gauge factor of the strain gauge.

Tesca Apparatus for determining the Gauge Factor of Strain Gauges allows the measurement of deflection and strain in a bar and the determination of the gauge factor of strain gauges.

Tesca Apparatus for determining the Gauge Factor of Strain Gauges is used to measure deformation in a bar by means of a dial gauge and four strain gauges in full bridge configuration. The gauge factor is calculated through several measurements taken with the strain gauges.

The unit consists of a bar supported on ball bearings at two points, allowing to apply a purely bending stress. The mechanical load application device includes a spindle, a cross-arm and a flywheel. This device allows to load the bar and a dial gauge allows to measure the deflection in the bar. At the same time, two strain gauges on the tension side and two strain gauges on the compression side measure the strain on the surface of the bar.

The unit includes an electronic console with a

Note: Specifications are subject to change.

### Tesca Technologies Pvt. Ltd.

IT-2013, Ramchandrapura Industrial Area, Sitapura Extension,  
Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
Tel: +91-141-2771791 / 2771792; Email: info@tesca.in, tesca.technologies@gmail.com  
Website: www.tescaglobal.com

digital display to show all readings.

The gauge factor can be calculated from the deflection of the bar by the strain gauge measurements.

### Specifications

- Unit mounted on a metallic frame.
- A bending bar:
  - Material: stainless steel. Dimensions: 680 x 25 x 12 mm
  - The bar is supported on ball bearings at two points, allowing to apply a purely bending stress.
- It includes two strain gauges on the tension side and two strain gauges on the compression side in full bridge configuration:
  - Strain gauge measuring point: full bridge, 350Ω.
- A mechanical load application device. It includes a spindle, a cross-arm and a flywheel.
- Dial gauge with adjustable dial for direct deflection measurement, range: 0-20mm., graduations: 0.01mm.
- Electronic console (in separate metallic box), including:
  - Strain gauge connector.
  - Digital display for the strain gauge.
  - Cables and accessories, for normal operation.
- Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices Manuals.

### Experiment Possibilities

1. Study of the fundamentals of measurement using strain gauges.
2. Determination of the gauge factor of the strain gauges.
3. Measurement of deflection in a bar using a dial gauge.
4. Comparison of the experimental values obtained by the strain gauge with the experimental values obtained by the dial gauge.

### Required Services

1. Electrical supply: single-phase, 220V./50Hz