

Force Transducer/ Load Cells

Force Proving rings are presently in use effectively as force measuring/force proving instruments but their use is limited due to their inherent disadvantages like cumbersome to use, temperature sensitive and are unable to measure the low forces with accuracy. The strain gauge force transducer to measure the applied forces up to 3 MN are available in the international market having an overall uncertainty of 0.02% with a digital display system of 10,00,000 (ten lacs count). Strain gauge force transducer having an accuracy and repeatability better than 0.04 % and 0.005 % respectively to measure applied forces up to 500 kN would be available through this development.

NATIONAL PHYSICAL LABORATORY

Force Transducer/Load Cells

Utility/Advantages

- ✓ Improved immunity to Ambient Temperature, Humidity and Pressure.
- ✓ Can be used from 10% to 100% of full capacity with no loss of accuracy
- ✓ Light weight, Easy to handle and operate
- ✓ Can be used as transfer standard
- ✓ Process control for automation
- ✓ Less number of Load cells to cover wide range of measurements
- ✓ No subjectivity and hence more accurate


Specifications


- ✓ Over all accuracy $\pm 0.04\%$ (k=2)
- ✓ Repeatability $\pm 0.005\%$
- ✓ Reproducibility $\pm 0.04\%$
- ✓ Linearity $\pm 0.04\%$
- ✓ Creep 0.1% over a period of 30 minutes

Potential Users

- ✓ Weigh Bridges for surface transport and Railways
- ✓ Civil Construction, Defence for testing of the material strength.
- ✓ Power Industries for the tension of the Power cables
- ✓ Verification of the material testing machines & hardness testing machines
- ✓ Civil Aviation for weighing kit
- ✓ Dissemination of the force scale to the user industries
- ✓ Packaging Industries

Licensee: M/s Ragrau Instruments Ltd., New Delhi



 **National Physical Laboratory**
Dr. K.S. Krishnan Marg, New Delhi - 1100 12 dnpl@mail.nplindia.ernet.in

[Procedure for Technology Transfer](#)

[Technology Request Form](#)

Contact:

Head, Industrial Liaison Group (ILG)
Room No. 46-A, Main Building
CSIR-National Physical Laboratory
Dr. K.S. Krishnan Marg

New Delhi 110012, INDIA.

Email: headilg@nplindia.org

Tel: +91-11-4560-8247/9385

Fax: +91-11-4560-9310