Solartron Metrology

AMETEK

Application Story

Sensors for Triaxial Test

The Challenge

One common shear test for raw materials is called a Triaxial Test. With this, a circular piece of material such as a soil or rock sample is placed in a chamber filled with fluid, and then pressure is applied from all sides until the sample shears to failure. Pressure can be up to 2000 bars and up to 200 degrees Celsius. For this, a laboratory requires rugged displacement measurement sensors to monitor external components, as well as the sample in the liquid.

The Solution

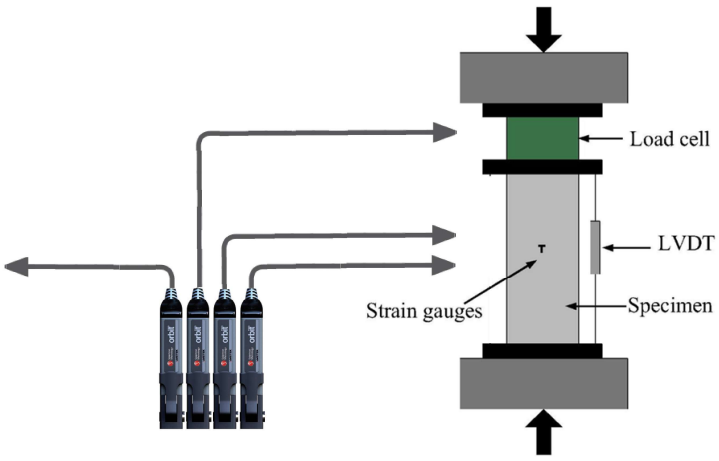
Solartron Metrology offers a full array of displacement transducers that precisely measure any material expansion or compression, and can be customized to fit even harsher environments of the **Triaxial Test**. This includes the ability to provide customized transducers.

- **Vented:** Solartron can provide custom "vented" transducers that can be placed into pressurized environments and still perform measurement. In the Triaxial test, a vented transducer is placed internally, while standard LVDT transducers can be used externally.
- **High Resolution:** Solartron transducers have resolution up to 0.01 microns, providing even the slightest shift in materials.
- **Rapid response:** Solartron LVDT probes will provide a near instant response, with no timing loss, when any displacement is made in a laboratory setting.
- **Up to IP 68 Sealing:** Solartron Displacement LVDTs are available with IP 65 or IP 67 sealing, to protect the internal electronics from tough environments. G-Type probe and Gauging probes can be sealed to IP 68.
- **Multiple Outputs:** Solartron offers DC, 4-20mA, TTL, and other analog output options.
- **Digital Option**: In addition, Solartron's Digital Orbit® network offers a calibrated, digital unit, and enables multiple, synchronized readings into a PC or PLC

Vented Free core OP Series Transducer

In this Triaxial test, displacement transducers are required both externally and internally.

An example of custom "Vented" transducers that are built for pressurized environments.



Orbit® can be used to network different types of sensors onto one synchronized platform, and then output to software or readout.

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Orbit® – The Total Measurement System from Solartron Metrology

The Solartron Orbit® Digital Measuring System provides a limitless set of measurement solutions, with numerous different interfaces to computers and PLC's.

S-Series

Special probes for low temperatures

SI 8500

Compact displacement

S-series transducers in an auto frame

OP Series

Measurement of concrete compression with G-Type