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Solartron Metrology
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Application Story *Test and Measurement*

Mechanical testing for civil engineering using G Type Displacement Sensor

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The Product

The G-Series of analogue DC/DC Displacement probes is based on the LVDT sensing principle and features a high accuracy, long life linear ball bearing (as AX-Series). All models incorporate a Linear Variable Differential Transformer (LVDT) as the measuring element, together with high performance conditioning electronics for low noise and superior linearity whilst being able to cope with a wide supply range.

Range:	12 or 25 mm
Accuracy:	Up to 0.4 µm
Repeatability:	Up to 0.1 µm
Resolution:	Up to 0.05 µm

The Challenge

Test instruments supplied to the civil engineering industry can be used to survey the mechanical properties of soil and rock conditions of civil engineering sites prior to construction, alongside laboratory testing of new materials.

Linear Displacement Transducers compliment data logging electronics on testing machines to replace the use of manual dial gauges and thus reduce the risk of error, creating a cost- and time-efficient alternative. A key requirement for this was to match the output signal of the current linear displacement transducers to interface with the existing electronic equipment. The transducers' pre-travel also had to be reduced to an absolute minimum to aid mechanical interfacing.

The Solution

Solartron's displacement probes fitted the specification, using two different ranges. The first, the DG Series (now labelled the G Type), boasts 0.2% linearity and <0.15 µm repeatability, with a range of outputs. The second, the DC displacement transducer, has a friction-free core incorporating LVDT technology as the measuring source. Solartron's ability to be flexible and adapt to different environments and applications drove the success of the application.

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