AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

Application Story

Test and Measurement

Hardness testing of materials using Miniature Displacement Transducers

Precision. Quality. Reliability

www.solartronmetrology.com • sales.solartronmetrology@ametek.com

AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

The Product

SM transducers cover two standard linear ranges from ±1 mm to±3 mm. They are designed for measuring displacement in applications where infinite resolution and repeatability are required in a very small size. The core and push rod assembly moves friction-free within the sensor, an alternative design is available where only the core, threaded at both ends, is provided. Recommended push rod material is titanium; other materials can be used, but with varying effects on the electrical characteristics.

Range:	1 or 3 mm
Linearity:	Up to 0.25% of reading
Body dia:	9.5 mm

The Challenge

Manufacturers producing mechanical testing instruments and welding machines must gather data in order to measure physical displacement. Solartron Metrology's products are suitable for this type of application due to their rugged construction and high accuracy.

Hardness testers are used to measure the density of hard alloy, carbon steel, alloy steel and non-ferrous metals. Compact dimensions of sensors were needed for ease when incorporating the sensors into the machine.

The Solution

SM probes were used to measure the physical displacement of the tool tip as it produces an indentation in the surface of the item under test. Data from the SM probe and the force sensor is then used by the CPU to calculate the hardness of the material under test. The calculated hardness reading is then displayed on the testing machine's integrated read-out.

United Kingdom - Head Office
Solartron Metrology
Steyning Way
Bognor Regis
West Sussex
PO22 9ST
Tel: +44 (0) 1243 833333
Fax: +44 (0) 1243 833322
Sales.solartronmetrology@ametek.com

France
Solartron Metrology
Rond-point de l'Espine des Champs
Buroplus - Bat. D
Elancourt 78990
Tel: +33 (0)1 30 68 89 50
Fax: +33 (0)1 30 68 89 59
france.solartronmetrology@ametek.com

Germany
Ametek GmbH
Solartron Metrology Division
Rudolf-Diesel-Strasse 16
40670 Meerbusch
Tel: +49 (0) 2159 9136 500
Fax: +49 (0) 2159 9136 505
vertrieb.solartron@ametek.de

India
Ametek Instruments India Private Limited
1st Floor, Left Wing
Prestige Featherlite Tech Park
Plot #148, EPIP II Phase
Whitefield, Bengaluru 560 066
Karnataka, India
Tel: +91 80 6782 3200
Fax: +91 80 6782 3232

USA
Solartron Metrology
USA Central Sales Office
915 N.New Hope Road, Suite C
Gastonia, NC 28054
Tel: +1 800 873 5838
Fax: +1 704 868 8466
usasales.solartronmetrology@ametek.com

China
AMETEK Commercial Enterprise (Shanghai) Co. Ltd
No. 155 Puhui Road
Ju Ting Economic Development Zone
Shanghai 200131
Tel: +86 21 5763 2509
Fax: +86 21 5866 0969 Ext. 261/262
china.solartronmetrology@ametek.com

AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology

Precision Driven

Offices worldwide
Agent and distributor details
available at
www.solartronmetrology.com

Q09540

Datasheet 52624
Issue 61
EDCR20423

Precision. Quality. Reliability

www.solartronmetrology.com • sales.solartronmetrology@ametek.com