

Press Release from Applied Measurements Ltd.

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Submersible Compression Load Cell Resists Freeze-Thaw Weathering

Applied Measurements have just designed and manufactured a special version of their compact CCG [annular load cell](#) (also known as a 'ring load cell' or 'donut load cell') for use in a particularly tough application where it is submerged 1 metre deep in potable water, subjected to a force of 160kN (~16 tonnes) *and* subjected to a repeated cycle of freezing and thawing.

The load cell design utilises 17-4PH stainless steel for the sensing element and cover in conjunction with a stainless steel IP68 cable gland, submersible polyurethane cable and a double 'O' ring sealing system to ensure that the transducer's integrity is maintained at all times.

The submersible load cells achieved an accuracy of better than 0.5% of rated capacity despite their low height of just 40mm. It was also fully temperature compensated over the operating range to minimise the effect of the application's cyclic thermal profile.

The submersible CCG annular load cell, alongside the [DDEN in-line submersible load cell](#), are just two of a number of customised transducer designs from Applied Measurements that are suitable for both permanent and temporary submersion in a variety of medias including water and hydraulic oil.

In addition to low level submersion applications where external pressures range from a few hundred millibar up to 4 or 5 bar typically, we also specialise in the design of load cells for use in applications where much higher pressures in excess of 620bar (9000psi) are present, such as subsea vessels and systems, ROVs & AUVs, oil well tools and pressurised vessels. The majority of these designs feature a pressure compensation system to nullify the external stresses experienced in these demanding situations and ensure high accuracy measurements.

For further information on the submersible annular load cell, or to discuss the design of a customised sensor for your particular application in detail, please contact our sales engineers by telephone on +44 (0) 1189 817339, or by email info@appmeas.co.uk.