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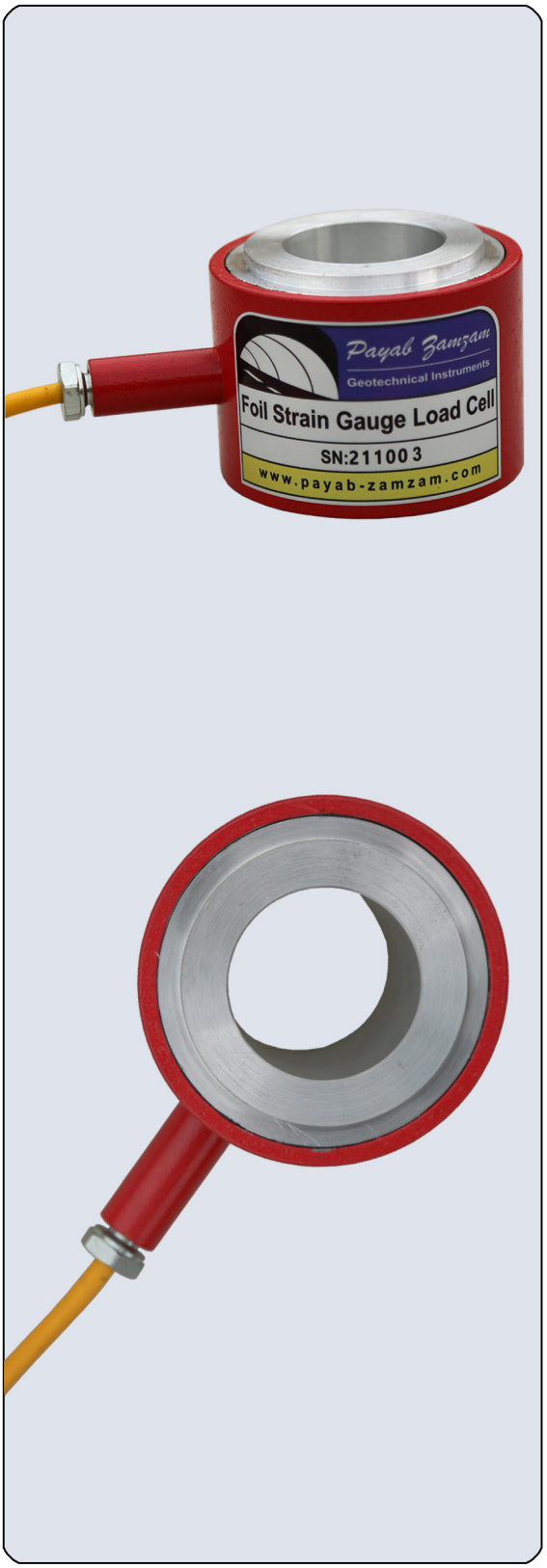
Foil Strain Gauge load cell – LCCN01

Electrical load cells are manufactured based on strain measurement of a hollow cylinder metallic annulus under applied load. An elastic material (Alloyed Aluminum / Steel) is instrumented by a number of strain sensors (Foil strain gauge or vibrating wire sensors) wired in a way to average the sensor readings. The metal strain is converted into a Voltage output. Knowing the deformability of the material, the strain can be translated into stress and force. Accurate laboratory calibrations provide the relation between applied force and load cell output. The load cell is designed to accommodate for off center loading. The wiring type also eliminates the effect of any change in temperature. The sensors are covered by a metallic ring to seal it from any ingress of water and to protect it from mechanical impacts during handling and installation. The central hole varies in a wide range making these instruments suitable for a wide variety of reinforcement load measurement applications.



Application

Some of the applications of this instrument are:
- Measuring load in rock bolts and cable bolt systems
- General load measurement as in the big scales
- Force measurement in pile tests

Operation and Installation

Installation of electrical load cells are similar to the hydraulic type. For mounting on a reinforcement, it is important to prepare a flat bearing surface normal to the reinforcement axis. Thick side of the load cell is placed on the bearing area. A set of spherical seating plates are used on top of the cell to make sure the loading direction is perfectly normal to the load cell surface. The fastening nut is fixed on top of the assembly and is tightened to about 10% of the reinforcement working capacity to eliminate any slack in the system and bring the load cell into complete contact with the reinforcement.

Technical Spec	
Load capacity	10 – 1000 tons
Transducer type	SG / VW
Accuracy	0.1 % FS
Temperature range	-20 to +80°C
Material	Alloyed Aluminum / Steel
Central hole	10-200 mm

Order information

LCCN01-AAA-BB-CC
AAA: Capacity in tons
BB: Central hole dimensions in cm
CC: Cable length in meters