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Hydraulic load cell – LCCX01

Hydraulic load cell is an instrument to measure force in the systems. This is composed of a stainless steel thick base on which a diaphragm is mounted to create a close area which when filled with a deaired liquid, can transfer load into a pressure transducer. The load cell which is used in geotechnical applications is meant for force measurement in reinforcements. These load cells have a central hole which makes it suitable to be mounted on any type of reinforcement (Rock bolt, cable bolt, ground anchor, etc.). The pressure measurement is either done by a pressure dial gauge or a pressure transducer. In case of a transducer, it is well sealed and protected against any accidental impact by a steel tube. The device is produced with a wide range of dimensions which suite any type of application and loading range. The thickness of the load cell is small which fits in very tight spaces.

Hydraulic load cells are very simple in structure and design, hence making them very durable and simple to use. No electrical implications exist in the cell which makes it very suitable for harsh environments.

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

When the load cell is supposed to be mounted on a reinforcement, a flat bearing surface should be prepared normal to the reinforcement axis. The load cell is placed on the bearing area from its thick side. To make sure the loading direction is perfectly normal to the load cell surface, a set of spherical seating plates are used on top of the cell and fastening nut is fixed on top of those. Usually to eliminate any slack in the system and bring the load cell into complete contact with the reinforcement, a preload (around 10 percent of the working load) is applied to the load cell.

Technical Spec	
Load capacity	10 – 100 tons
Transducer type	Piezoresistive
Resolution	0.05% FS
Accuracy	1% FS
Temperature range	-20 to +70°C
Material	Stainless steel 316
Input Voltage	8-28 V
Out put	4-20 mA

Order information

LCC-A-01-BBB-CC
A: Pressure dial gauge (D) or Pressure transducer (Q)
BBB: Load range in tons
CC: Cable length in m