ENCARDIO RITE
METASENSING FOR MEGA STRUCTURES

COMPRESSION LOAD CELL HIGH CAPACITY

MODEL ELC-150S-H

DATASHEET

OVERVIEW

The Encardio Rite model ELC-150S-H load cell is a heavy-duty precision-engineered instrument specifically designed to measure large compressive load or axial forces with high accuracy and reliability. With capacities ranging from 5000 kN to 12,500 kN, it is ideal for high-capacity measurement applications. For loads exceeding 12,500 kN, multiple load cells can be employed.

The load cell incorporates high-quality foil strain gauges arranged in a Wheatstone bridge configuration, ensuring precise and stable measurements. The load-bearing element, constructed from high-strength martensitic stainless steel, is engineered to withstand high compressive loads while maintaining structural integrity. This material is chosen for its excellent mechanical properties, including high strength, toughness, and resistance to wear and corrosion.

Model ELC-150S-H compression load cell is temperature compensated to minimize errors and features a design with no moving parts, reducing the risk of mechanical failure. It is ideally suited for monitoring high compressive loads during pile testing as well for monitoring axial forces in struts.

FEATURES

- **High Capacity Measurement:** Designed for measuring large compressive loads.
- **High precision:** Sixteen foil-type strain gauges in a Wheatstone bridge configuration deliver exceptional accuracy and repeatability.
- **Robust construction:** The load cell's columnar design and martensitic stainless steel load-bearing element ensure enhanced linearity, reduced hysteresis, and long-term durability.
- **Durable design:** Resistant to extraneous forces, enhancing fatigue life and allowing for less stringent mounting alignment, reducing the likelihood of reading errors.
- **Temperature compensated:** Each load cell is individually temperature compensated to minimize temperature-induced measurement errors.
- **Negligible side and eccentric load effect:** Equally spaced strain gauges minimize the effects of uneven and eccentric loading, providing consistent millivolt output.
- **Stable system:** The absence of moving parts or linkages reduces the potential for mechanical failure.
- **Versatile datalogging:** Compatible with various readout units for manual data collection. For continuous monitoring, it can be connected to a suitable datalogger, allowing for data acquisition at desired frequencies.

  Encardio Rite offers a range of NexaWave dataloggers equipped with GSM/GPRS or RF communication capabilities, ensuring reliable and efficient data transmission.
- **Infrastructure data intelligence platform**: Integrates with Proqio software to facilitate data processing, analysis, andreal-time visualization, and generates instant alarms for critical events to keep all stakeholders informed.
- **Cross-Compatibility:** The load cell can work with any manufacturer's Dataloggers and Data Management Systems.

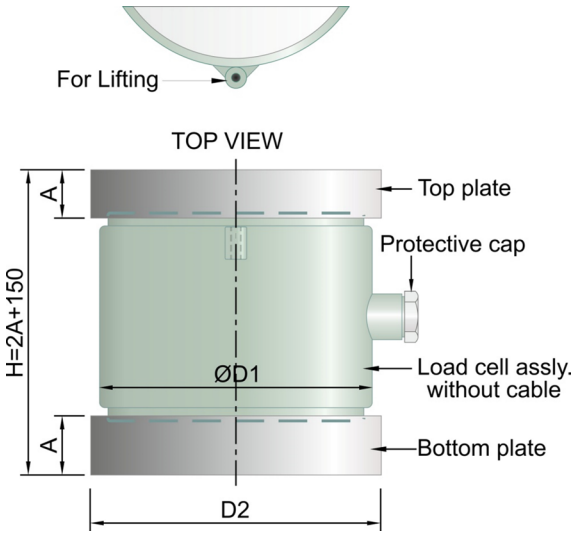
DESCRIPTION

The ELC-150S-H high-capacity compression load cell comprises of a columnar load-bearing element made of high strength martensitic stainless steel. Sixteen 350 Ohm resistive foil strain gauges are bonded to this element using high-quality epoxy cements, arranged in a 1400 Ohm Wheatstone bridge configuration. The sectional area of the element varies across different capacities to ensure consistent millivolt output from zero to full load.

When a compressive force is applied, imbalances within the bridge circuit generate an output, with the resulting electrical signal being directly proportional to the applied force. The load cell provides a full-scale output of approximately 1.5 mV/V when subjected to an excitation voltage of 10 VDC.

SPECIFICATIONS

Type	Resistive strain gage
Range (kN)	5000, 6000, 7500, 10000, 12500
Over range capacity	120 % with a maximum upto 14000 kN
Non linearity	± 1 % fs
Output	1.5 mV/V ± 10 %
Excitation	10 V DC (maximum 20 VDC)
Terminal resistance Input Output	 1540 Ohm ± 5 % 1400 Ohm ± 1 %
Temperature limit	-20 to 80°C
Cable connection	Four core shielded 5 m long/or as specified, with suitable connector



ELC-150S-H Load cell				Load distribution/bearing plates		
Capacity kN	D1 (OD) mm	Ht. mm	Wt. kg	A (Ht.) mm	D2 size mm	Wt. kg/ plate
5000	217	150	34	32	200X200	11
6000	217	150	36	32	200X200	11
7500	248	150	44	32	250X250	16
10000	278	150	58	50	Ø285	26
12500	293	150	68	50	Ø295	28

ORDERING INFORMATION

Model ELC-150S-H- **X**

Capacity kN

*All specifications are subject to change without prior notice

DATASHEET | 1212-12 R03

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Encardio-Rite Electronics Pvt. Ltd. A-7, Industrial Estate, Talkatora Road, Lucknow, UP-226011, India | info@encardio.com | T: +91 522 2661039-320