



ENCARDIO RITE



STRAIN GAGE TYPE CENTRE HOLE LOAD CELL

MODEL ELC-30S

OVERVIEW

The Encardio-rite model ELC-30S is a precision engineered load cell with a central cylindrical hole. It is specially designed for civil engineering applications. It is available in capacities ranging from 200 kN to 3500 kN. Higher capacity load cells and those having an internal diameter different from the standard specified range are available on request.

FEATURES

- ◆ Rugged & robust construction
- ◆ Suitable for hostile & severe environment
- ◆ Hermetically sealed by electron beam welding
- ◆ Temperature compensated
- ◆ Eight or more strain gages incorporated to reduce positioning effect
- ◆ Any standard strain gage bridge measuring read out device can be used

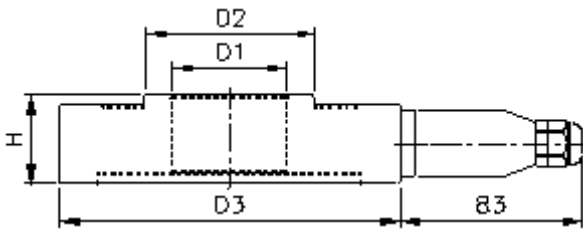


The center hole load cell comprises of a cylinder of high strength martensitic stainless steel. It generally uses eight 350 Ohm resistance strain gages, wired to form a 700 Ohm bridge. To minimize the effect of uneven and eccentric loading, the eight gages are mounted at 45° to each other. Load applied to the cell can be measured by using any standard digital read-out unit suitable for resistance strain gage applications. If specifically required, the load cell can be provided with twelve or sixteen strain gages. The stainless steel columnar element assembly with the strain gages mounted on it, is enclosed in a stainless steel body, electron beam welded to the element through two stainless steel diaphragms at the top and bottom. This results in a vacuum of around 1/1000 torr inside the sensor resulting in it becoming immune to the effect of any ingress of water or chemicals in the environment. The sectional area of the columnar element is varied in the different capacity load cells to give approximately the same millivolt output for a variation of zero to full load.

APPLICATIONS

- ◆ To determine load in rock bolts, tiebacks, foundation anchors, cables or struts
- ◆ Proof testing and long term performance monitoring of different kind of anchor systems
- ◆ Compressive load measurement between structural members i.e. tunnel supports or at the junction between a beam and the top of a pile strut
- ◆ Used extensively for correlating data obtained from bore hole extensometers

DIMENSIONS



Capacity kN	Centre Hole Load Cell				
	D1 mm	D2 mm	D3 mm	H mm	Wt.kg
200	40	60	155	40	4.4
500	52	78	155	40	4.4
1000	78	116	200	40	7.0
1000	105	138	225	40	8.0
1500	85	130	225	55	12.0
1500	130	165	260	55	14.2
2000	105	160	260	55	15.8
2000	155	192	260	55	12.2
3000	76	175	260	65	22.8
3500	76	175	260	65	22.8
3500	185	217	260	90	11.0

Capacity kN	T mm	Bearing plate			Load distribution plate		
		OD mm	ID mm	Wt. kg	OD mm	ID mm	Wt. kg
200	23	155	116	1.6	75	40	0.6
500	35	155	116	2.4	98	52	1.5
1000	45	200	150	5.0	135	78	3.5
1000	45	225	172	5.9	155	105	3.8
1500	55	225	165	8.0	150	85	5.3
1500	55	260	200	9.4	180	130	5.5
2000	65	260	195	11.9	180	105	8.8
2000	65	260	226	6.7	210	155	8.3
3000	70	260	212	9.8	200	76	14.8
3500	70	260	212	9.8	200	76	14.8
3500	70	250	185	12.5	250	185	12.5

ORDERING INFORMATION CODE

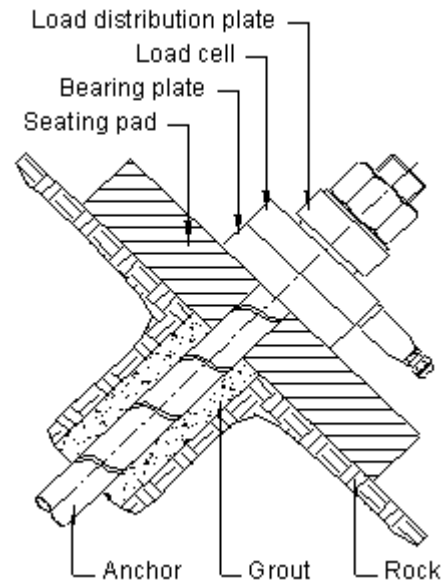
Model **ELC-30S-X/Y**

Capacity in kN/ID

SPECIFICATIONS

Capacity (kN)	200/500/1000/1500/2000/3000/3500 or as specified
Over range capacity	150 %
Non-linearity	± 1 % fs (± 0.5 % fs available)
Output	2 mV/V ± 10 % (for 3500/185 column type load cell, output is 1.5 mV/V ± 20 %)
Zero Balance	± 5 % fs
Excitation	10 V DC (maximum 20 V DC)
Terminal resistance	
Input	770 Ohm ± 5%
Output	700 Ohm ± 1%
Temperature effect	
Zero	± 0.01% fs/°C
Sensitivity	± 0.005 % fs/°C
Operating temperature	-10 to 55°C
Cable connection	Six pin glass to metal seal
Enclosure	Electron beam welding
Material of element	Stainless steel 420
Casing	Stainless steel 304

TYPICAL INSTALLATION



All specifications are subject to change without prior notice.

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