

# CTE



**model CTE**

# HYDRAULIC LOAD CELL

## Description

Hydraulic anchor load cells are used to monitor loads in tiebacks, rock bolts and cables. The hydraulic anchor load cell is a special ring-shaped in stainless steel. Two plates welded along their perimeter and separated inside by a cavity saturated under vacuum with de-aired oil to guarantee maximum rigidity.

The applied load is transferred by means of oil to an analog pressure gauge that allows to immediately see the pressure in that moment. The ring-shaped load cell is chosen to suit the diameter and nominal load of the anchor.

The same cell can be equipped with an electric pressure transducer for continuous monitoring.

A stiff distribution plate is supplied, in order to ensure that the load is applied equally over the loading surface of the cell.

## Application

- Retaining walls
- Deep excavations
- Tunneling
- Diaphragm walls
- Tie-backs
- Struts
- Rock bolts
- Landslides

## Features

- Direct readings by manometer, no maintenance required
- Electrical conversion for remote readings available
- Rugged and reliable in every environmental condition
- Stainless steel body assure cell long life
- Splash-proof design

## Technical features pressure gauge

- Gauge diameter 100 mm
- Material stainless steel
- Accuracy 1% F.S.
- Protection class IP 65
- Scale in kN



## Technical features pressure transducer

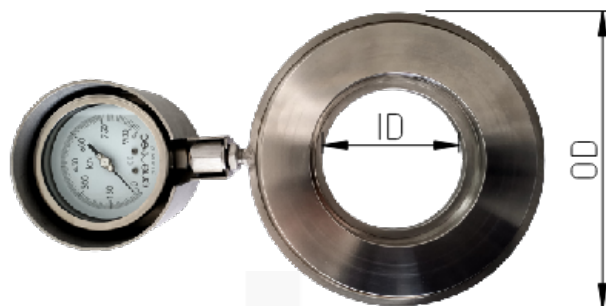


- Type of sensor: piezoresistive
- Output signal: 4-20 mA (2 wires) or vibrating wire transducer (2300 to 3200 Hz)
- Vibrating wire transducer includes a NTC temperature sensor
- Electrical power supply: 8-32 V DC
- Ultimate tensile strength: 200 % F.S
- Repeatability: +/- 0.5 % F.S.
- Admissible load: 150 % F.S.
- Protection class: IP 68
- Material: AISI 304 stainless steel
- Operating temperature: from -40 to 105 °C

## Gauge manometer model CTE-M

Product code	Capacity [kN]	Id [mm]	OD [mm]	Height [mm]
CTE-01-040M-01	150	40	140	30
CTE-01-040M-02	250	40	140	30
CTE-01-040M-03	350	40	140	30
CTE-01-040M-04	450	40	140	30
CTE-01-120M-05	500	120	250	30
CTE-01-120M-07	750	120	250	30
CTE-01-120M-10	1000	120	250	30
CTE-01-120M-12	1250	120	250	30
CTE-01-120M-15	1500	120	250	30
CTE-01-165M-10	1000	165	300	30
CTE-01-165M-12	1250	165	300	30
CTE-01-165M-15	1500	165	300	30
CTE-01-165M-18	1800	165	300	30

**Special capacities and geometries are available on request. The gauge can also be delivered in a 90 degree configuration.**

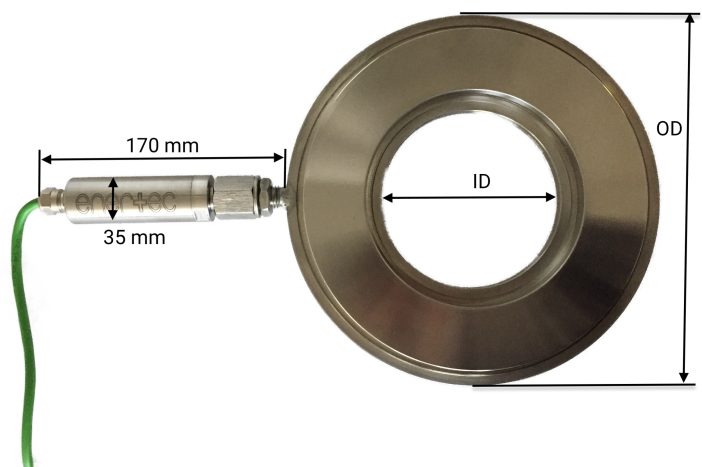


## Electric output models CTE-T and CTE-VW

Model CTE-T with 4–20 mA signal output and model CTE-VW with vibrating wire output.

Product code	Capacity [kN]	Id [mm]	OD [mm]	Height [mm]
CTE-02-040T-03 CTE-02-040VW-03	350	40	140	30
CTE-02-120T-05 CTE-02-120VW-05	500	120	250	30
CTE-02-120T-10 CTE-02-120VW-10	350	120	250	30
CTE-02-165T-12 CTE-02-165VW-12	1250	165	300	30
CTE-02-165T-15 CTE-02-165VW-15	1500	165	300	30

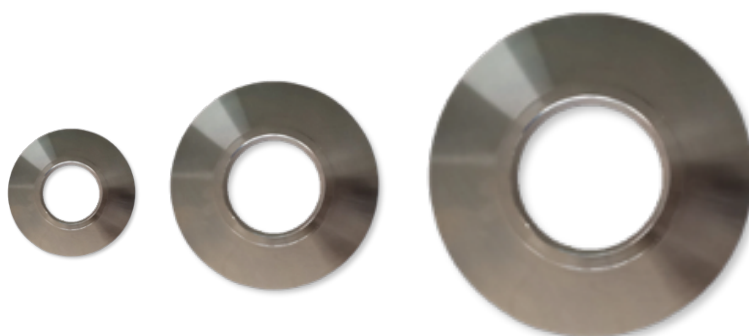
Special capacities and geometries are available on request.



## Load distribution plates

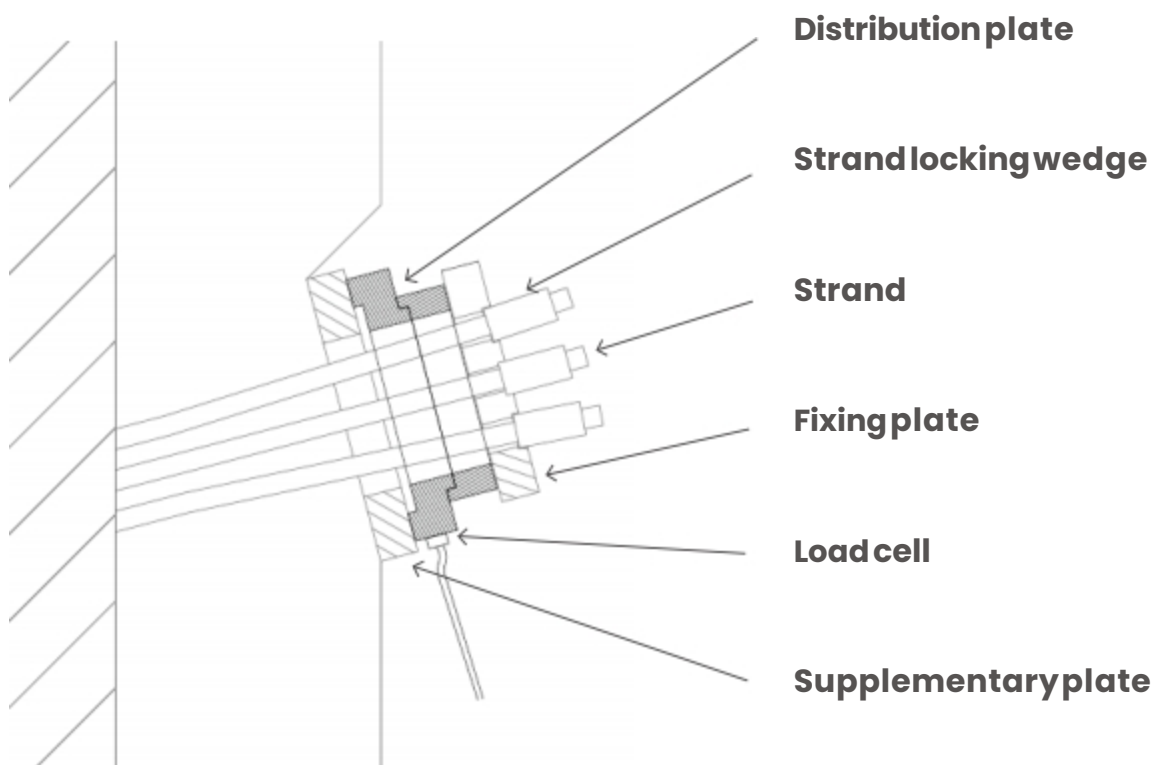
Product code	Description	Id [mm]	OD [mm]	Height[mm]
CTE-03-40DP	Galvanized steel load distribution plate.	40	140	30
CTE-03-120DP	Galvanized steel load distribution plate.	120	250	30
CTE-03-165DP	Galvanized steel load distribution plate.	165	300	30

**Special capacities and geometries are available on request. The load distribution plate must fit to the load cell.**



## Installation recommendations

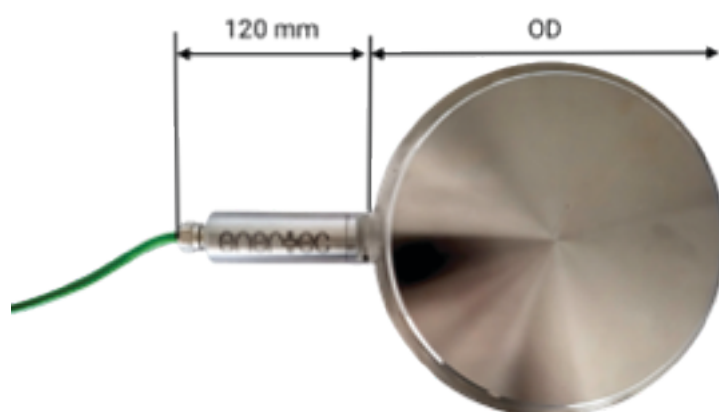
Anchor load cells have to be installed with particular care to obtain load bearing surfaces flat and parallel to avoid any significant distortion under load. The specific design of these cells gives a very low sensitivity to the load eccentricity. Between the cell and wall surfaces it is usually installed an abutment plate. The plate shall be at least of the same thickness of the distribution plate (30 mm) with diameter at least 20 mm larger than the load cell. Please remember that after the anchor tension phase there is a release due to the settlement of the whole system that generally gives a load decrease of 10-15%.



# Hydraulic load cell for tunnel lining

Product code	Capacity [kN]	OD [mm]	Height [mm]	Output signal
CTE-01-ID-120VW	1200	220	35	Vibrating wire
CTE-01-ID-135	1365	220	35	4-20 mA
CTE-01-ID-190	1900	220	35	4-20 mA
CTE-01-ID-300	3000	300	35	4-20 mA

**Special capacities and geometries are available on request.**







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