

# Tension Load Cell

## Applications

The Model 4915 Tension Load Cell is designed to accurately measure in-line loads in...

- Process weighing systems
- Batching plants
- Weighing type rain gages



• The Model 4915 Tension Load Cell.

## Operating principle

The Model 4915 Load Cell consists of a vibrating wire transducer, housed inside a thick-walled stainless steel cylinder, designed to provide a highly stable and sensitive means of monitoring tensile loads in in-line weighing systems, such as weighing type rain gages, process weighing systems and batching plants.

As the weight applied to the load cell increases, the force on the internal vibrating wire increases, altering its tension, and hence its resonant frequency. The frequency is measured and is proportional to the applied load.

## Advantages and Limitations

The main advantage of the Model 4915 lies in its high sensitivity and stability, which allows for small changes in weight to be measured accurately.

The transducer is practically immune to zero drift and has a very low response to changes in temperature.

As with all vibrating wire sensors, because the output is a frequency, it is not affected by changes of cable resistance and hence long signal cables are not a problem.

The frequency is measured by either a portable readout or datalogger.

40-20 mA or 0-5 V outputs can be obtained using the Model 8020-54 Vibrating Wire/Analog Interface.

## System Components

The main component is a strain gauged diaphragm permanently secured in the transducer housing. The transducer is fitted with a stainless steel eye allowing in line connection into the weighing system, and a stainless steel hook, attached to the sensitive diaphragm, provides a means by which weights can be applied in a suspended mode.

The load cell is vented to atmosphere to eliminate barometric effects for optimum accuracy. The signal cable attached to the load cell extends to the readout location where the signals can be monitored using the Model GK-404 or GK-405 Readouts or by any of **GEOKON**<sup>®</sup>'s Dataloggers. A thermistor is included inside each sensor allowing for measurements of temperature.

## Technical Specifications

Rated Capacity <sup>1</sup>	15 kg
Over Range	150% F.S.
Resolution	0.025% F.S.
Accuracy <sup>2</sup>	±0.1% F.S.
Temperature Range <sup>3</sup>	-20°C to +80°C
Length × Diameter	94 × 19 mm (transducer)

<sup>1</sup>Other capacities available on request.

<sup>2</sup>Accuracy established under laboratory conditions.

<sup>3</sup>Other ranges available on request.